

**Project Title: Economic Impact and Consumer Awareness
Study of Indiana Grown**

Final Report

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Collaboration & Research Support provided by Purdue University:

Dr. Michael Wilcox
Dr. Nicole Widmar
Dr. Zuzana Bednarikova
Tanya Hall
Mario Ortiz
Taylor Thompson
Alejandra Armesto
Claire Baney

Contents

Executive Summary.....	3
1 Introduction.....	4
2 Research design and description	4
2.1. Consumer Survey.....	5
2.2. Producer Surveys	7
2.2.1. Producer Survey 2020	7
2.2.2. Producer Survey 2021	8
3 Impact Analysis	10
3.1. Methodology overview	11
3.2. Summary of Economic Impact Results	11
2.2.3. Statewide Analysis.....	11
2.2.4. Regional Analysis	13
3.3. Distribution of Economic Contributions	14
4 Implications & Recommendations	16
Appendix 1. Executive Summary for Indiana Resident Perception and Mean Marginal Willingness to Pay for Indiana Grown	17
Appendix 2. Producer Survey 2020 Results.....	25
Appendix 3. Producer Survey 2021 Results.....	44
Appendix 4. Economic Impact Analysis – Key Terms & IMPLAN Software	59
Appendix 5. An Additional Perspective on The Growth Potential of Indiana Grown	61

Executive Summary

Purdue Extension and the Purdue University Department of Agricultural Economics (Purdue Team) assisted Indiana Grown, Indiana's statewide branding initiative for locally made/grown products, to determine the economic impact and potential of the Indiana Grown program through a collaborative, science-driven approach. The period of the project's performance was from September 2019 to September 2022.

A three-pronged approach was employed. First, the Purdue Team determined the consumer awareness of the program and quantified a consumer willingness to pay for locally made and/or grown products in regionally differentiated markets within Indiana. Second, the Purdue team identified and quantified the drivers and benefits of producer participation in Indiana Grown. Third, the Purdue Team used consumer and producer data to determine the economic impact of the Indiana Grown program and extrapolated the potential economic development potential for local agricultural product branding and marketing programs in Indiana.

The Purdue Team distributed a state-wide questionnaire to collect Indiana residents' awareness of and perceptions of the Indiana Grown label/program. Random parameters logit models estimated willingness to pay for Indiana Grown labeling and signage for BBQ and sweet corn. The Purdue Team in collaboration with Indiana Grown distributed two surveys to all Indiana Grown members to collect membership and business-related data. Impact analysis was employed to identify and quantify the current economic impact of the Indiana Grown program.

The consumer survey results analysis shows that 33% to 37% of respondents had awareness of the Indiana Grown labels/signage/programs when asked about them visually. Regional awareness of Indiana Grown signage and labeling did vary somewhat by the region of residence that the respondent lives in. Mean willingness to pay estimates for BBQ sauce and sweet corn revealed a positive willingness to pay for the "Prepared in Indiana" label and "Indiana Grown" label.

To determine the value of the program to an Indiana Grown member, the Purdue team took into account the change in member sales between 2014 and 2020, the value-added output from both the members and the Indiana Grown program and estimated that the value of the program to their business is equivalent to approximately \$13,600. The value-added multiplier shows that for every dollar spent via Indiana Grown activities, \$0.97 in additional economic activity occurs within Indiana. The value-added multiplier shows that for every dollar spent by Indiana Grown members in the Indianapolis metropolitan area, an additional \$1.01 was returned to the region's economy. Indiana Grown sales growth potential for Indiana's state-wide economy is 6.5%.

Anecdotal comments indicated that some members saw varying degrees of benefits from the program, which is likely largely dependent on the types of products sold, their markets, demand for their goods, and reputation. However, the economic impact analysis reflects positive activity and the Purdue Team posits that the Indiana Grown program has exuded a positive influence on the member's business operations within Indiana.

1 Introduction

The Indiana Grown program is Indiana's statewide branding initiative for locally made/grown products developed by the Indiana State Department of Agriculture (ISDA). The main objective of this program is to increase the awareness and purchase of Indiana Grown products leading to enhanced economic demand and production. The program impacts a variety of indicators ranging from job creation, retail-ready education for members, and consumer education on identifying and using local products. The purpose of this project was to determine the economic impact and potential of the Indiana Grown program through a collaborative, science-driven approach, which aligned with the cooperative development project type.

To achieve the stated purpose of the project, three key objectives were addressed. The first objective was to determine the consumer awareness of the Indiana Grown program and quantify a consumer's willingness to pay for locally made and/or grown products in regionally differentiated markets within Indiana. The second objective identified the drivers and benefits of participation in Indiana Grown. Finally, the third objective determined the economic impact of Indiana Grown and extrapolated the economic development potential for local agricultural product branding and marketing programs in Indiana.

The partnership between ISDA and Purdue Extension focused on the collaborative approach between the state government and academia and the potential for increased economic opportunity through marketing in local and regional food systems.

The Purdue team, in collaboration with ISDA, developed an economic model to scientifically evaluate the current economic impacts of a state branding initiative at a regional and state level, provided a framework so the model can be replicated, and developed a quantitative study of consumer and producer awareness and attitudes toward locally made and/or grown products and markets. The findings are being disseminated to public and private stakeholders in Indiana and used as the basis for scholarly outputs to inform future research and Extension programs.

2 Research design and description

To achieve the objectives, the ISDA and the Purdue Team collected information about consumers of Indiana Grown produce and Indiana Grown members to determine the value of Indiana Grown to producers and other Indiana Grown members. The Purdue Team collaborated with ISDA to develop consumer and producer surveys, construct survey marketing strategies, and distribute surveys to all Indiana Grown members.

This report examines the data collection and assessment of Indiana residents' awareness of and perceptions of the Indiana Grown label/program and Indiana Grown's economic impacts via several replicable approaches: primary data collection using Qualtrics online survey in 2020, Qualtrics online and mail surveys in 2021, descriptive and cross-tabulation analyses of survey results, random parameters logit models, and impact analysis using an IMPLAN analytical software.

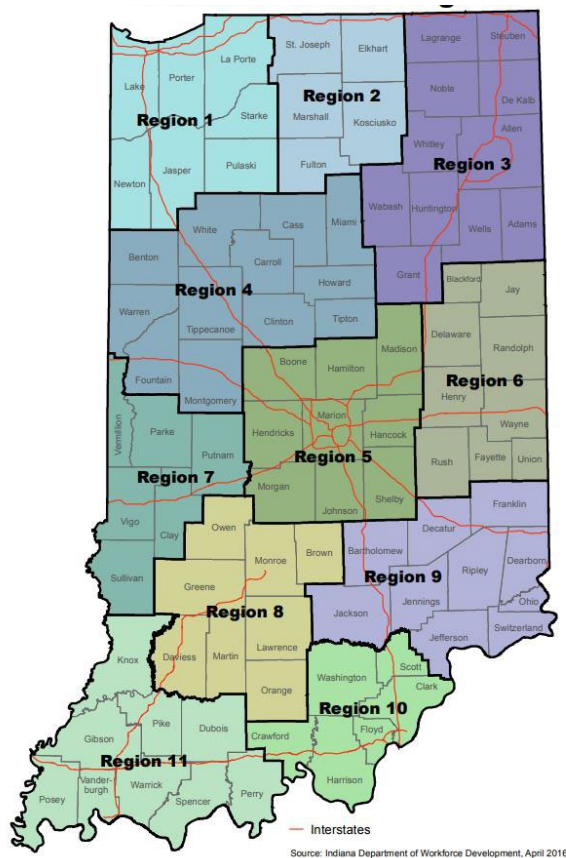
2.1.Consumer Survey

Survey methods

The summary statistics and willingness to pay estimates, intended to represent the mean marginal value of the Indiana Grown attribute as measured for sweet corn and bar-b-que sauce, are provided based on analysis completed as of June 30, 2021.

Data were collected from April 8 to April 26, 2021. Respondents were screened for Indiana residence and age over 18 years; respondents who did not reside in Indiana or reported that they were under 18 years of age were immediately declined from participation. Quotas were employed to facilitate sampling of Indiana residents in proportion to the Indiana population for sex, age, household income, and region of the state using Indiana Economic Growth Regions (Figure 1).

Figure 1. Economic Growth Regions in Indiana



Consumer Survey summary statistics (Appendix 1) are provided for “% of respondents” except in specific cases where “% of total clicks or responses” were deemed appropriate; these instances are clearly labeled/marked. Each question is analyzed for the whole sample and then for the portion of the sample who took the sweet corn choice experiment versus the BBQ sauce choice

experiment. There are expected to be no meaningful differences in responses between those who saw the two product choice experiments as they were randomly assigned. No meaningful differences were found, yet the dual tables are provided for transparency and completeness.

Consumer Survey analysis provides mean marginal willingness to pay estimates for the Indiana Grown attributes included in the choice experiment. Choice experiments are based on random utility theory. The mean willingness to pay for the sample of respondents has been estimated for both the sweet corn and BBQ sauce products studied. Respondents were randomly assigned to either see BBQ sauce or sweet corn as their product to participate in a simulated shopping experiment for. The specific combination of attribute levels presented in the choice experiment to respondents, resulting in main effects plus two-way interaction experimental design, was determined using the SAS OPTEX program. The design was chosen based on maximizing D-efficiency. Seventy-two was the D-efficiency of the chosen experimental design, which contained 20 choice scenarios. The 20 choice scenarios were randomly divided into 2 blocks of 10 choice scenarios. Thus, there were 10 individual choices presented to each respondent.

Respondents were asked to choose between two products that were exactly the same in terms of similar color, brand, and flavor, with the exception of the different combinations of attribute levels as detailed above, and the option “I choose not to purchase either item.”

Summary of the survey results

A representative sample of 484 Indiana residents was collected. Eighty-seven percent of respondents reported that they were the primary shopper for food and household essentials in their household, indicating a sample with familiarity with shopping for their households. Forty-seven percent of respondents indicated that they usually or always read the information on labels/products when making purchases, while another 38% reported sometimes and 13% reported rarely. Seventy-five percent of respondents reported purchasing items labeled as local or locally produced while 48% indicated that they were at least sometimes familiar with the Indiana Grown label.

A representative sample of Indiana residents revealed that 33-37% of respondents had awareness of the Indiana Grown labels/signage/programs. Regional awareness of Indiana Grown signage and labeling did vary somewhat by the region of residence that the respondent lives in.

Awareness of the various labels and signage documented by region is included in Appendix 1.

The mean estimated marginal amount that Indiana residents were willing to pay differed between the products studied, including differing in what attributes were positively versus negatively valued. Willingness to pay documented by region is included in Appendix 1.

Random parameters logit models estimated willingness to pay (WTP) for Indiana Grown labeling and signage for BBQ and sweet corn. Mean WTP estimates for BBQ sauce reveal a positive WTP for the “Prepared in Indiana” label of \$1.42/bottle and of \$1.96/bottle for the “Indiana Grown” label. For sweet corn, the mean WTP for corn with “Indiana Grown label” was \$1.58/dozen ear and under “Indiana Grown Sign at the point of sale” was \$1.58/dozen, reflecting

nearly identical valuation for both the label on the actual product and the sign at the point of purchase.

Regarding the location of purchase of local products, there was a higher valuation for BBQ sauce in locations off the farm (retail supermarkets and farmers' markets) whereas the opposite materialized for sweet corn, where buyers had a nominally lower mean valuation when purchasing it at a farmer's market (\$0.13/dozen ears less) and at retail locations (\$0.64/dozen ears less) compared to purchasing directly from the farm.

2.2. Producer Surveys

The surveys focused on the basic characteristics of Indiana Grown members, their satisfaction with membership in Indiana Grown, and their farm or business performance. The mean marginal willingness to pay for the Indiana Grown affiliated attributes was estimated linearly, without interactions, for ease of use in further analyses by the research team.

2.2.1. Producer Survey 2020

Survey methods

The purpose of the Producer Survey 2020 survey was to collect data related to the basic characteristic of Indiana Grown members, their satisfaction with membership in Indiana Grown, and the impacts of COVID-19 on their farm or business performance.

When the company's shutdown and stay-at-home order were ordered in mid-March 2020, it became clear the COVID-19 outbreak was creating issues with data collection. Producers were beginning to be wary of disease and experiencing the impacts of economic restrictions. Given the nonstandard conditions for collecting data related to the project objectives, the Purdue Extension team suggested pivoting a survey slightly. The adjusted survey was developed by the Purdue Extension team in collaboration with ISDA and focused on Indiana Grown members' economic performance, response to COVID-19, and satisfaction with their participation in Indiana Grown. The survey also allowed the Purdue Extension team to familiarize itself with the current listframe of growers, identify effective strategies that will positively influence response rates, and prepare Indiana Grown members for the original survey conducted in 2021.

Purdue Extension collaborated with ISDA to develop the survey instrument, create the listframe, and construct a survey's marketing strategy. After being transferred to Qualtrics, ISDA distributed the link to the online survey to all Indiana Grown members (1714+ members) in mid-October 2020. For this study, 71 responses were collected from Indiana Grown members.

Summary of the survey results

The complete analysis of the Producer Survey 2020 is included in Appendix 1. Despite the low response rate (4.1%), the survey provided important insights of Indiana Grown members regarding their business characteristics, membership satisfaction, impacts of COVID-19 on their

businesses, and demographic information. As respondents are spread across Indiana, and the focus of their businesses and farms differ, we received many contradictory results reflecting diverse perspectives on their membership and economic performance.

In general, respondents are satisfied with their membership and would recommend the membership to others. The survey revealed that most of the respondents consider the Indiana Grown benefits and programs as extremely valuable, especially the program 'Educating consumers on the importance of buying Indiana Grown products.' However, several respondents did not find any value in some of the programs and benefits, especially in 'Making connections between producers and buyers' and 'Individualized help.' Nearly one-third of respondents did not develop any professional relationship and thus do not experience any contribution to their business activities. Also, some respondents repeatedly pointed out the excessive exposure to small farmers.

The most popular Indiana Grown events are Indiana State Fair and Annual Market at Monument Circle. Respondents like promotional and marketing events and would like to have more events that promote their business. Several respondents reported they were not aware of Indiana Grown events and communication ways such as the Indiana Grown newsletter. Many respondents like to use the Indiana Grown logo. However, nearly half of the respondents do not use the Indiana Grown logo at all.

COVID-19 had mostly large or moderate negative impacts on the farm or business performance, and the majority of respondents experienced disruptions in their supply chain in 2020.

The demographic profile of respondents shows that most respondents were farmers/food producers selling their products at farmers' markets and festivals. More than half of the respondents have had their farm or business in operation for less than five or ten years, respectively.

To conclude, creating connections between producers and buyers is extremely valuable for many respondents. Respondent's reactions made it clear that Indiana Grown should work more on promoting non-farm businesses, emphasizing networking activities, providing business connections for Indiana Grown members, and improving communication with members.

2.2.2. Producer Survey 2021

The Purdue Team defined the Producer Survey 2021 to focus on a few essential items and target the sample to represent the Indiana Grown producers in their production activities. Hence, the survey concentrated on the Indiana Grown member's product mix, economic performance, and participation in Indiana Grown events.

Given what the Purdue Team learned from the Producer Survey 2020 and to successfully address the response rate issue for the Producer Survey 2021, the team proposed and employed an iterative survey strategy using different tools. The Purdue Team developed the producer survey in Qualtrics - an online survey tool allowing a distribution of the survey invitation via email. Moreover, the Purdue Team reached out to all Indiana Grown members through mailed surveys

in a booklet form along with business-reply mails (prepaid envelopes) and informational postcards. Indiana Grown reached out through social media and their newsletter. In support of these state-level efforts, the Purdue Team divided the state amongst community development and agricultural and natural resources educators. These educators approached their Indiana Grown member contacts to bolster response rates as previous email blasts and mailings had not solicited the desired responses.

A more personal approach to data collection was selected to ensure a higher response rate. Indiana Grown members were divided into five groups based on their product portfolio and/or membership type: Group A - Horticulture, Grains, Oil (30.3% of members), Group B - Proteins and Livestock (18%), Group C - Natural Sugars, Bakeries, and other food manufacturing, Beverages (28.8%), Group D - Non-edible product manufacturing (7.3%), Group E - Wholesale and Retail Sale – Partner, Other Partners, Food Service and Restaurants (15.6%). Each member received a customized invitation and postcard based on the group they were involved in.

The Purdue Team and Indiana Grown representatives distributed the producer survey to all 1,828 Indiana Grown members in November 2021 in 7 days intervals as follows, (a) distribution of emails with a survey link and mails with a hard copy survey including a QR code to a survey, (b) personalized postcard distribution, (c) distribution of emails with a survey link and mails with a hard copy survey including a QR code to a survey. Moreover, Purdue Extension educators were assigned to regions and counties to reach out to Indiana Grown members in their territories.

The Purdue Team obtained 211 valid responses in total - 110 online and 101 mail responses. The response rate was 11.5% which is 1.5% higher than our goal 10% valid response rate to get a statistically significant sample.

Data derived from the survey were used as inputs to the IMPLAN to estimate the direct and indirect economic impact of the Indiana Grown program at the state and economic growth regional level.

Summary of the survey results

The complete analysis of the Producer Survey 2021 is included in Appendix 2. The survey provides important insights into the Indiana Grown member's business characteristics, the impact of the COVID-19 pandemic on business performance, their participation in Indiana Grown activities, and a brief description of their demographic characteristics.

Half of the respondents indicated that more than 90% of their activities are tied up with Indiana Grown. The activities with high involvement include Farmer's Markets, Vegetable Farming, and Retail.

The COVID-19 pandemic had a mixed impact on business operations. Nearly 28% of respondents reported that their businesses faced moderate negative effects caused by the pandemic. On the other hand, some respondents experienced little or no impact on business operations. In general, more businesses experienced a negative effect rather than a positive effect of the pandemic.

Finally, the survey revealed that most members who took action to keep their businesses running during the pandemic changed how they served customers and/or increased their social media presence.

The most represented Indiana Grown activities and events pursued by respondents involve reading Indiana Grown email communications, displaying the logo on signage and/or products, and being listed on an Indiana Grown map, trail, or guide.

The demographic profile of the respondents shows that most of the respondents are more than 60 years old. In addition, males predominate among respondents answering a gender question, and most of the respondents recognize themselves as white. Also, most respondents have between 6 and 15 years of business experience and at least some post-secondary or graduate/professional training. Lastly, according to the zip codes provided by the respondents, Marion County, Indiana, represented the county with the highest number of respondents.

The respondents with most activities related to Indiana Grown include Vegetable and Melon Farming and Farmers Markets, with 47 members each. Nevertheless, there are other businesses like Sugar and Confectionery Product Manufacturing, Animal Slaughtering and Processing, Animal Food Manufacturing, Agricultural Products and Food Packaging, or Tourism and Farmers Organizations, with fewer respondents but all activities related to Indiana Grown.

Most Indiana Grown members joined the program in 2018, particularly in the Proteins and Livestock and Horticulture, Grains, and Oil operations. Likewise, 2020 was the year with the second-highest number of people enrolled in Indiana Grown. In this case, the categories with more new members were Horticulture, Grains and Oil, Proteins and Livestock, and Wholesale and Retail Sale.

3 Impact Analysis

An economic impact analysis was conducted to understand better the ripple of employment and capital transactions caused by the Indiana Grown program and its members within the Indiana economy. This analysis was done in two parts: first, a survey of Indiana Grown members (members) evaluating the change in employment and economic activity since joining Indiana Grown and 2020; second, evaluating the employment and economic activity of the program itself.

Of the member survey, there were 127 usable data entries that constructed a snapshot of the members' financial profiles associated with the Indiana Grown program. The financial profile revealed low employment numbers, which was anticipated given the nature of the member operations. Despite the COVID-19 pandemic's influence on the national economy, there was still an overall uptick in economic activity, even though there were business closures or significant shifts in operation. The financial profile of the Indiana Grown program from the Indiana State Department of Agriculture (ISDA) was a spending pattern that demonstrated that the expenses went to personnel and execution of the Indiana Grown program within the state.

3.1. Methodology overview

To do the economic impact analysis, the IMPLAN software was used. IMPLAN is a commonly used software analysis tool for impact and contribution studies when measuring economic ripples throughout a local economy. The software disposes of an input-output model that can define the flow of dollars through the economy contingent while assuming fixed relationships between members and their suppliers. The appendix reviews key terms commonly used to describe economic impact analysis as well as information about the IMPLAN software used for this study.

For the member survey, the questions allowed the Purdue team to calculate the appropriate share of their operations in the Indiana Grown program by production type. To discern the change in activity between when a member joined the Indiana Grown program and the analysis year (2020), the economic analysis was run twice. The subsequent results show the differences in members' economic activities between the year of joining Indiana Grown and 2020.

This analysis was run for statewide analysis and again for the Indianapolis Metropolitan Area. The Indianapolis Metropolitan Area was chosen due to the high number of survey respondents located in this area (14 respondents, 263 Indiana Grown members) and the quantity of Indiana Grown events hosted in this region. Other regions in the state were considered but lacked the membership density or diversity to be a representative sample.

A standard institutional spending analysis for the Indiana Grown program was conducted for state government and other enterprises. The underlying statewide model was adjusted to reflect the actual spending pattern of the program and the local area spending within Indiana.

The results show the economic impact of the Indiana Grown program from both the perspective of the members and from the investment by state legislators to operationalize the program. It must be noted that these results are likely conservative estimates as not all Indiana Grown members participated in the survey, nor did all respondents answer the financial questions.

3.2. Summary of Economic Impact Results

2.2.3. Statewide Analysis

Table 1 lists the aggregated results of the statewide and Indianapolis Metropolitan Area analyses. In total, the Indiana Grown program generated an estimated \$7.27 million in direct economic output – which is reflective of the expenditures made by the program and its members (Table 1).

Examples of direct economic output expenditures include purchases made by the Indiana Grown program to produce the marketing materials as well as all the purchases made by members to create their products that they sold under the Indiana Grown label.

Table 1: The Economic Contributions of Indiana Grown Program in Indiana, 2014-2020

	Direct Effect	Indirect Effect	Induced Effect	Total	Multiplier
Output (\$ millions)	\$7.27	\$3.76	\$2.88	\$13.91	1.91
Value Added (\$ millions)	\$3.31	\$1.60	\$1.63	\$6.54	1.97
Labor Income (\$ millions)	\$2.65	\$0.95	\$0.93	\$4.52	1.71
Employment (number of jobs)	18	16	18	52	2.96

In addition to these direct effects, the program and its members caused an estimated \$3.76 million in additional economic activity in the state by purchasing inputs from Indiana-based suppliers (indirect effects). Thus, the expenditures to Indiana-based suppliers allowed them to go and purchase their products and services to produce their end product. Hence the indirect effect or the second ripple of how the initial spending by members and the Indiana Grown program stimulated additional economic activity.

The tertiary economic ripple results from increased household spending (induced effect) of the members, Indiana Grown employers, and supply chain employees that earn their income in payment for their labor inputs to production processes totaled \$2.88 million. Collectively, the total economic footprint of the Indiana Grown program was \$13.91 million as of 2020.

Multipliers assist in better understanding the ripple effects. The ratio of total effects to direct output yields an output multiplier of 1.91, meaning that each dollar of output generated by Indiana Grown stimulates another \$0.91 in economic activity in the state.

It is important to note that while economic output estimates are useful as they provide approximate values of sales or expenditures – a concept readily understood by most people – it truly serves as “headline numbers.” It could also be regarded as the “gross” economic activity as a result of the domino effect of economic transactions. In relation to the total output or total footprint, the total value added would be the “net” economic activity as it eliminates transaction duplications. Total value added contributes to the official GDP figures reported at national or state levels, thus is a more accurate appraisal of the contribution of Indiana Grown to the state’s economy.

As depicted in Table 1, the Indiana Grown program and its members combined to generate \$3.31 million in direct value added to the economy. This initial level of activity cascaded through the economy with nearly \$1.60 million indirect and \$1.63 million in induced effects within Indiana, resulting in a total value-added contribution of \$6.54 million. ***The value-added multiplier shows that for every dollar spent via Indiana Grown activities, \$0.97 in additional economic activity occurs within Indiana.***

The depicted labor income is the sum of employee compensation and proprietor income. Therefore, it represents the combined cost of total payroll paid to employees (e.g., wages and salaries, benefits, payroll taxes) and payments received by self-employed individuals and/or unincorporated businesses between the year of joining Indiana Grown and 2020. In Table 1, the total labor income value across three dimensions (direct, indirect, and induced effects) was \$4.52 million

Employment by Indiana Grown members is comprised of many sole proprietors who employ family members, whereas the program itself hired several employees to manage the program at the statewide level. It was anticipated that this number would be low. The estimated direct jobs were 18 employees, nearly evenly split between the two focus areas. An additional 34 jobs within the state were the byproducts of the ripple effects of the Indiana Grown members and program. This brings the total employment effect to an estimated 52 jobs. The ratio of total employment effects to direct employment results in a multiplier of 2.96, meaning that for every 10 jobs directly related to Indiana Grown, approximately another two jobs (1.96 jobs) were created in the state between 2014 and 2020.

2.2.4. Regional Analysis

The Indianapolis metropolitan area is comprised of eight counties and had 33 Indiana Grown members complete the financial portion of the survey, representing 26 percent of all surveys that could be used for the economic impact analysis. Between 2014 and 2020, these counties experienced a decline in employment, as reflected in the negative 18 jobs within the direct effect (Table 2). This drop in employment was to be expected, given the negative impact COVID-19 enacted on many small and family business performances via market disruptions.

Table 2: Indiana Grown Program Economic Impact in Indianapolis Metropolitan Area, 2014-2020

	Direct Effect	Indirect Effect	Induced Effect	Total	Multiplier
Output (\$ thousands)	\$1,734.61	\$795.07	\$798.29	\$3,327.96	1.92
Value Added (\$ thousands)	\$903.65	\$430.51	\$480.89	\$1,815.04	2.01
Labor Income (\$ thousands)	\$703.32	\$286.16	\$286.18	\$1,275.66	1.81
Employment (number of jobs)	-18.00	3.82	4.72	-9.46	0.53

Despite the drop in jobs, the existing jobs still generated modest employment growth with indirect and induced effects. Overall, the total employment declined by 9.5 individuals, thus causing a low multiplier of 0.53, meaning that for every 10 new jobs associated with the Indianapolis metropolitan area members, it generated one-half of an additional job within the larger economy. Despite these drops in employment, the labor income is held steady, with a total of \$1.28 million being paid to the sole proprietor and/or their employees.

The output generated by the Indianapolis area members totaled \$3.3 million, with the majority occurring from direct outputs from the members (52 percent). This initial expenditure from members stimulated an additional \$1.6 million through indirect and induced effects, leading to a multiplier of 1.92. Thus, for every dollar spent by the Indiana Grown members, an additional \$0.92 went back into the local economy.

Removing duplicate transactions yielded a net economic activity, otherwise known as the value-added output. The direct value-added output was \$903,649. Once these expenditures hit the market, it drove another \$911,395 in indirect and induced effects throughout the local economy. This activity occurred despite a drop in employment across these same members, indicating that

economic activity still happened despite fewer personnel completing the work at members' operations. *Thus, the value-added multiplier shows that for every dollar spent by Indiana Grown members in the Indianapolis metropolitan area, an additional \$1.01 was returned to the region's economy.*

3.3. Distribution of Economic Contributions

Since the Indiana Grown program has been enacted, members have driven most of the economic impact within the state of Indiana. In **Table 3**, members had a sizable difference in output and value-added economic activity across all three dimensions (direct, indirect, and induced effect) over the Indiana Grown program itself. In looking at the total value added contributed back to the economy; \$4.91 million came from members' expenditures and an additional \$1.63 million from the activities of the Indiana Grown program.

Table 3: The Economic Contribution of Indiana Grown by Component, 2014-2020 (\$ millions)

	Direct Effect	Indirect Effect	Induced Effect	Total	Multiplier
Member Results					
Output (\$ millions)	\$5.83	\$3.49	\$2.17	\$11.49	1.97
Value Added (\$ millions)	\$2.22	\$1.46	\$1.22	\$4.91	2.21
Indiana Grown Program Results					
Output (\$ millions)	\$1.43	\$0.28	\$0.71	\$13.91	1.69
Value Added (\$ millions)	\$1.09	\$0.14	\$0.41	\$1.63	1.50

The Purdue team realized that the survey was distributed in 2021 and requested information during a significant market disruption due to the COVID-19 pandemic. It was hypothesized that the results could be dismal. While the data did show some members' closing their doors, many shifted their operations to fit the changing demands and market avenues. The presence of the Indiana Grown website, which listed all the members, was valuable in connecting Indiana buyers and sellers as traditional supply chains were compromised.

From this analysis, the Purdue team saw a positive economic impact of the Indiana Grown program at both the statewide and Indianapolis Metropolitan Area based on spending, income and employment patterns. *To determine the value of the program to an Indiana Grown member, the Purdue team took into account the change in member sales between 2014 and 2020, the value-added output from both the members and the Indiana Grown program and estimated that the value of the program to their business is equivalent to approximately \$13,600.*

Anecdotal comments indicated that some members saw varying degrees of benefits from the program, which is likely largely dependent on the types of products sold, their markets, demand for their goods, and reputation. However, the economic impact analysis reflects positive activity and the Purdue team posits that the Indiana Grown program has exuded a positive influence on the member's business operations within Indiana.

Using sales indicators in 2014 – the start year of Indiana Grown – and the end year that is equivalent to 2020, we calculated the growth potential for Indiana’s state-wide economy as follows:

Sales growth rate = (Total Sales in 2020 – Total Sales in 2014) / Total Sales in 2014 x 100%

Table 4 indicates *that Indiana Grown sales growth potential for Indiana’s state-wide economy is 6.5%.*

Table 4. Growth potential for Indiana’s state-wide economy

	Production	Value Added	Total	Growth Potential
Adjusted Start Sales (\$)	40,098,401	33,785,225	73,883,737	
Adjusted End Sales (\$)	42,717,343	35,991,952	78,709,295	6.5%

The impact analysis offers an opportunity to consider the growth potential of Indiana Grown using multipliers and estimates derived from primary and secondary data. The Purdue Team examines the footprint of sixty-six sectors that are closely aligned with Indiana Grown membership. In Appendix 5 the Purdue Team provides a means of thinking about the growth potential of Indiana Grown from a different perspective – demand, sales, jobs, and membership.

4 Implications & Recommendations

The purpose of this project was to determine the economic impact and potential of the Indiana Grown program through a collaborative, science-driven approach, which aligned with the Cooperative Development project type. The partnership between ISDA and Purdue Extension focused on the collaborative approach between the state government and academia and the potential for increased economic opportunity through marketing in local and regional food systems. By joining the primary data from surveys and impact analysis results, the Purdue Team evaluated the economic impacts of a state branding initiative at the state level. Moreover, the Purdue Team provided a framework to replicate the model and develop a quantitative study of producer awareness and attitudes toward locally made/grown products and markets.

The consumer survey results analysis shows that 33% to 37% of respondents had awareness of the Indiana Grown labels/signage/programs when asked about them visually. Regional awareness of Indiana Grown signage and labeling did vary somewhat by the region of residence that the respondent lives in. Mean willingness to pay estimates for BBQ sauce and sweet corn revealed a positive willingness to pay for the “Prepared in Indiana” label and “Indiana Grown” label.

In general, Indiana Grown members are satisfied with their membership and would recommend the membership to others. Most of the Indiana Grown members that responded to the survey consider the Indiana Grown benefits and programs extremely valuable. Creating connections between producers and buyers is important for many respondents. Respondent's reactions made it clear that Indiana Grown should work more on promoting non-farm businesses, emphasizing networking activities, providing business connections for Indiana Grown members, and improving communication with members.

Anecdotal comments indicated that some Indiana Grown members saw varying degrees of benefits from the program, which is likely largely dependent on the types of products sold, their markets, demand for their goods, and reputation. However, the economic impact analysis reflects positive activity and the Purdue Team posits that the Indiana Grown program has exuded a positive influence on the member's business operations within Indiana.

The approach taken to improve response rates for the second producer survey, involving county-based Extension educators, is one that will be utilized for other projects where gathering local information is challenging. Purdue Extension has existing expertise in working with agricultural producers, farmers' markets, and entrepreneurs. Thus, the study results will assist Extension educators in developing programs to support local producers, such as a curriculum focused on marketing locally made/grown products or expanding existing programs to better serve the local food audience.

Appendix 1. Executive Summary for Indiana Resident Perception and Mean Marginal Willingness to Pay for Indiana Grown

**Executive Summary for Indiana Resident Perception
and Mean Marginal Willingness to Pay for Indiana
Grown**

Submitted by

Dr. Nicole Olynk Widmar

nwidmar@purdue.edu

Collaboration & Research Support provided by Mario Orteiz and Taylor
Thompson

June 30th 2021

Outcome: Indiana Grown will know a quantitative number of consumers who are aware of the Indiana Grown program statewide and regionally, and will have a quantitative indicator of the willingness of an average consumer to pay additional cost for a locally grown/made product.

Indicator 1: For every random 1,000 consumers in Indiana, x# are informed of Indiana Grown's mission and purpose (with information distilled to both state-wide and regional awareness).

A representative sample of Indiana residents revealed that 33-37% of respondents had awareness of the Indiana Grown labels/signage/programs.

Regional awareness of IN Grown signage and labeling did vary somewhat by the region of residence that the respondent lives in. Awareness of the various labels and signage is documented by region as follows.

Select all of the following that apply regarding the image shown



% of Respondents (n=484) (# of clicks 714)	I have never seen this sign	I have seen this sign at a store	I have seen this sign at a roadside stand	I have seen this sign at a farmer's market	I would be more likely to buy products from a seller displaying this sign	I would be willing to pay a premium for products sold by a seller displaying this sign	None of the statements apply to me
Region1 (n=64)	72%	11%	5%	8%	34%	5%	3%
Region2 (n=49)	73%	14%	8%	10%	33%	10%	2%
Region3 (n=58)	67%	12%	7%	9%	41%	9%	3%
Region4 (n=29)	72%	14%	0%	7%	24%	7%	0%
Region5 (n=75)	61%	17%	13%	12%	43%	9%	7%
Region6 (n=26)	88%	8%	4%	4%	27%	12%	0%
Region7 (n=18)	56%	28%	17%	22%	39%	22%	6%
Region8 (n=20)	65%	5%	5%	0%	60%	10%	0%
Region9 (n=18)	50%	11%	22%	17%	33%	6%	6%
Region10 (n=10)	78%	9%	9%	9%	39%	9%	4%
Region11 (n=33)	70%	12%	3%	12%	24%	6%	0%
Region12 (n=71)	51%	24%	6%	10%	32%	15%	8%
All regions (n=484)	66%	15%	8%	10%	36%	10%	4%

Select all of the following that apply regarding the image shown



% of Respondents (n=484) (# of clicks 714)	I have never seen this sign	I have seen this sign at a store	I have seen this sign at a roadside stand	I have seen this sign at a farmer's market	I would be more likely to buy products from a seller displaying this sign	I would be willing to pay a premium for products sold by a seller displaying this sign	None of the statements apply to me
Region1 (n=64)	75%	13%	3%	3%	23%	3%	2%
Region2 (n=49)	69%	18%	12%	16%	39%	8%	2%
Region3 (n=58)	71%	9%	3%	3%	40%	9%	5%
Region4 (n=29)	72%	7%	0%	7%	28%	3%	3%
Region5 (n=75)	53%	21%	7%	11%	45%	9%	8%
Region6 (n=26)	85%	12%	4%	4%	38%	4%	0%
Region7 (n=18)	50%	39%	22%	22%	44%	22%	6%
Region8 (n=20)	70%	0%	10%	5%	50%	20%	0%
Region9 (n=18)	50%	11%	17%	17%	39%	11%	6%
Region10 (n=10)	83%	4%	4%	4%	35%	13%	4%
Region11 (n=33)	85%	6%	3%	9%	18%	0%	3%
Region12 (n=71)	52%	23%	8%	13%	34%	21%	11%
All regions (n=484)	67%	15%	7%	9%	36%	10%	5%

Select all of the following that apply regarding the image shown



% of Respondents (n=484) (# of clicks 714)	I have never seen this sign	I have seen this sign at a store	I have seen this sign at a roadside stand	I have seen this sign at a farmer's market	I would be more likely to buy products from a seller displaying this sign	I would be willing to pay a premium for products sold by a seller displaying this sign	None of the statements apply to me
Region1 (n=64)	72%	11%	3%	5%	31%	9%	3%
Region2 (n=49)	69%	14%	8%	10%	43%	12%	2%
Region3 (n=58)	62%	17%	7%	3%	43%	9%	3%
Region4 (n=29)	72%	14%	0%	10%	28%	3%	0%
Region5 (n=75)	53%	19%	7%	15%	48%	11%	7%
Region6 (n=26)	81%	8%	4%	8%	35%	8%	0%
Region7 (n=18)	50%	33%	17%	22%	44%	28%	6%
Region8 (n=20)	70%	10%	15%	5%	55%	10%	0%
Region9 (n=18)	61%	6%	11%	17%	33%	11%	6%
Region10 (n=10)	70%	13%	4%	4%	39%	4%	4%
Region11 (n=33)	79%	12%	3%	6%	24%	3%	0%
Region12 (n=71)	49%	27%	4%	15%	34%	17%	8%
All regions (n=484)	64%	16%	6%	10%	38%	11%	4%

Select all of the following that apply regarding the image shown



% of Respondents (n=484) (# of clicks 714)	I have never seen this sign	I have seen this sign at a store	I have seen this sign at a roadside stand	I have seen this sign at a farmer's market	I would be more likely to buy products from a seller displaying this sign	I would be willing to pay a premium for products sold by a seller displaying this sign	None of the statements apply to me
Region1 (n=64)	67%	16%	8%	6%	36%	6%	3%
Region2 (n=49)	69%	14%	10%	8%	39%	12%	2%
Region3 (n=58)	62%	9%	2%	5%	45%	7%	7%
Region4 (n=29)	76%	7%	3%	14%	24%	3%	0%
Region5 (n=75)	49%	17%	8%	9%	45%	13%	8%
Region6 (n=26)	92%	4%	4%	4%	35%	4%	0%
Region7 (n=18)	56%	33%	22%	28%	50%	28%	6%
Region8 (n=20)	75%	10%	0%	0%	55%	20%	0%
Region9 (n=18)	39%	28%	11%	11%	33%	11%	6%
Region10 (n=10)	74%	9%	0%	4%	43%	13%	9%
Region11 (n=33)	76%	6%	3%	9%	18%	3%	3%
Region12 (n=71)	46%	21%	4%	10%	44%	23%	7%
All regions (n=484)	63%	14%	6%	8%	39%	12%	5%

Indicator 2: On average, a Hoosier consumer is willing to pay \$x more for an Indiana Grown product, knowing it was grown or processed within the state (with information distilled to both state-wide and regional indicators.)

The **mean** willingness to pay for **BBQ sauce** with the prepared in Indiana label was **\$1.42 (\$0.07/ounce)**.

The **mean** willingness to pay **per ear of sweet corn** with the Indiana Grown label or Indiana Grown sign was **\$0.13/ear**.

Mean willingness to pay for individual's from the various economic development regions are detailed in the tables below, although the valuation on the IN Grown attributes was quite consistent across regions.

Corn WTP By Indiana Region

Region	Opt Out	Retail Location_WTP	Farmers Market_WTP	Indiana Grown Label_WTP	Indiana Grown Sign Displayed at Point of Purchase_WTP
1	-7.80	-0.78	-0.14	1.58	1.62
2	-8.28	-0.71	-0.36	1.59	1.41
3	-8.03	-1.23	-0.17	1.58	1.64
4	-8.27	-0.89	-0.11	1.58	1.65
5	-9.18	-0.54	-0.04	1.58	1.53
6	-9.97	-1.29	0.24	1.58	1.56
	-				
7	10.08	-0.76	-0.21	1.58	1.69
8	-7.50	-0.73	0.04	1.58	1.48
	-				
9	11.12	-0.64	-0.28	1.58	1.64
10	-7.04	-0.59	0.04	1.58	1.71
11	-8.70	-0.51	0.04	1.59	1.44
12	-7.54	-0.38	-0.16	1.58	1.47
Average of Individual Regions	-8.46	-0.74	-0.11	1.58	1.56
Standard Deviations	1.18	0.26	0.16	0.00	0.10
Mean Model Estimates	-8.27	-0.64	-0.13	1.58	1.56

BBQ Sauce WTP By Indiana Region

Region	Opt Out	Retail Location_WTP	Farmers Market_WTP	Prepared in Indiana Label_WTP	Indiana Grown Label_WTP
1	-5.57	0.65	0.53	1.43	1.91
2	-7.84	0.48	0.39	1.42	1.70
3	-6.40	0.41	0.26	1.41	2.33
4	-5.65	0.36	0.30	1.41	2.02
5	-7.35	0.42	0.44	1.46	1.91
6	-5.43	0.54	0.27	1.39	1.66
7	-6.71	0.37	0.32	1.45	1.95
8	-7.03	0.19	0.26	1.42	1.79
9	-8.48	0.21	0.47	1.39	2.04
10	-5.29	0.90	0.11	1.41	2.05
11	-5.63	0.64	0.28	1.44	1.66
12	-5.93	0.66	0.34	1.40	2.10
Average of Individual Regions	-6.45	0.52	0.35	1.42	1.95
Standard Deviations	1.00	0.20	0.11	0.02	0.19
Mean Model Estimates	-6.41	0.49	0.36	1.42	1.96

Appendix 2. Producer Survey 2020 Results



**Project Title: Economic Impact and Consumer
Awareness Study of Indiana**

**Executive Summary & Internal Report
Online Indiana Grown Member's Survey**

January 2021

Submitted by

Dr. Zuzana Bednarikova

zbednari@purdue.edu

Collaboration & Research Support provided by Tanya Hall and Dr. Michael Wilcox

Executive Summary

In partnership with Purdue Extension and the Purdue University Department of Agricultural Economics, Indiana Grown intends to determine the economic impact and potential of the Indiana Grown program. The purpose of the survey described in this report is to collect data related to the basic characteristic of Indiana Grown members, their satisfaction with membership in Indiana Grown, and the impacts of COVID-19 on their farm or business performance. Purdue Extension collaborated with ISDA to develop the survey instrument, create the listframe, and construct a survey's marketing strategy. After being transferred to Qualtrics, ISDA distributed the link to the online survey to all Indiana Grown members (1714+ members) in mid-October 2020. For this study, 71 responses were collected from Indiana Grown members.

Despite the low response rate, the survey provided important insights from Indiana Grown members. In general, respondents are satisfied with their membership and would recommend the membership to others. The survey revealed that most of the respondents consider the Indiana Grown benefits and programs extremely valuable. Nearly one-third of respondents did not develop any professional relationship and thus do not experience any contribution to their business activities.

The most popular Indiana Grown events are Indiana State Fair and Annual Market at Monument Circle. Respondents like promotional and marketing events and would like to have more events that would promote their business. Many respondents like to use the Indiana Grown logo. However, nearly half of the respondents do not use the Indiana Grown logo at all.

COVID-19 had mostly large or moderate negative impacts on the farm or business performance, and the majority of respondents experienced disruptions in their supply chain in 2020.

Creating connections between producers and buyers is extremely valuable for many respondents. Respondent's reactions made it clear that Indiana Grown should work more on promoting non-farm businesses, emphasizing networking activities, providing business connections for Indiana Grown members, and improving communication with members.

1 Introduction

Indiana Grown is a marketing and promotional program developed by the Indiana State Department of Agriculture and launched in July 2015. It is a statewide agricultural initiative promoting locally grown products and encouraging consumers to purchase local foods and products. The main objective of the Indiana Grown program is to increase the awareness and purchase of Indiana Grown products, thus enhancing economic demand and production.

In partnership with Purdue Extension and the Purdue University Department of Agricultural Economics, Indiana Grown intends to determine the economic impact and potential of the Indiana Grown program through a collaborative, science-driven approach. The purpose of the survey described in this report was to collect and analyze data related to the basic characteristic of Indiana Grown members, their satisfaction with membership in Indiana Grown, and the impacts of COVID-19 on their farm or business performance.

2 Methodology

To examine the factors affecting producer/processor participation in Indiana Grown and estimate the benefits derived from participation, the project was positioned to collect data from Indiana Grown members. Purdue Extension collaborated with ISDA to develop the survey instrument, create the listframe, and construct a survey's marketing strategy.

When the company's shutdown and stay-at-home order were ordered in mid-March, it became clear the COVID-19 outbreak was creating issues with data collection. Producers were beginning to be wary of disease and experiencing the impacts of economic restrictions. Given the nonstandard conditions for collecting data related to the project objectives, the Purdue Extension team suggested pivoting a survey slightly. The adjusted survey was developed by the Purdue Extension team in collaboration with ISDA and focused on Indiana Grown members' economic performance, response to COVID-19, and satisfaction with their participation in Indiana Grown. The survey also allowed the Purdue Extension team to familiarize itself with the current listframe of growers, identify effective strategies that will positively influence response rates, and prepare Indiana Grown members for the original survey that will now be conducted in 2021.

After being transferred to Qualtrics, ISDA distributed the link to the online survey to all Indiana Grown members (1714+ members) in mid-October 2020. The survey remained open during November and December 2020.

To get the best picture of the Indiana Grown participant's situation and ensure a statistically significant respondent rate, ISDA and Purdue Extension Team constructed and implemented a marketing strategy for the survey. ISDA published a press release supplemented by the survey link to inform Indiana Grown members and the public about the upcoming survey. Purdue Extension - Community Development educators were asked to spread the information about the survey. Other marketing activities included posting the survey information and link on the Indiana Grown website and Facebook page.

3 Results

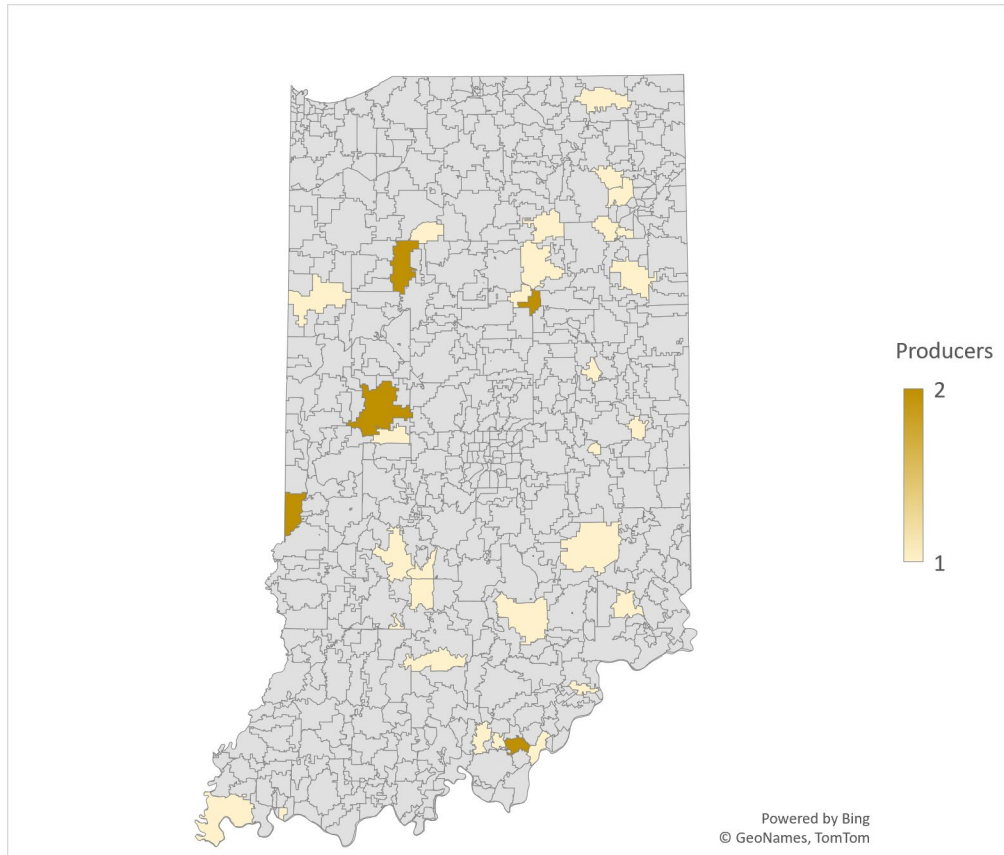
For this study, 71 responses were collected from Indiana Grown members. We were hopeful that we could attain at least a 10% response rate. However, despite our mutual effort, the response rate was low (4.1%). Indiana Grown members were probably exhausted from the situation in 2020, and some level of survey fatigue played a role too. The survey was focused on the following topics:

- The basic characteristic of Indiana Grown members.
- Satisfaction with membership in Indiana Grown.
- Impacts of COVID-19 on the farm or business performance.
- Personal characteristics.

3.1 Basic characteristics of Indiana Grown members

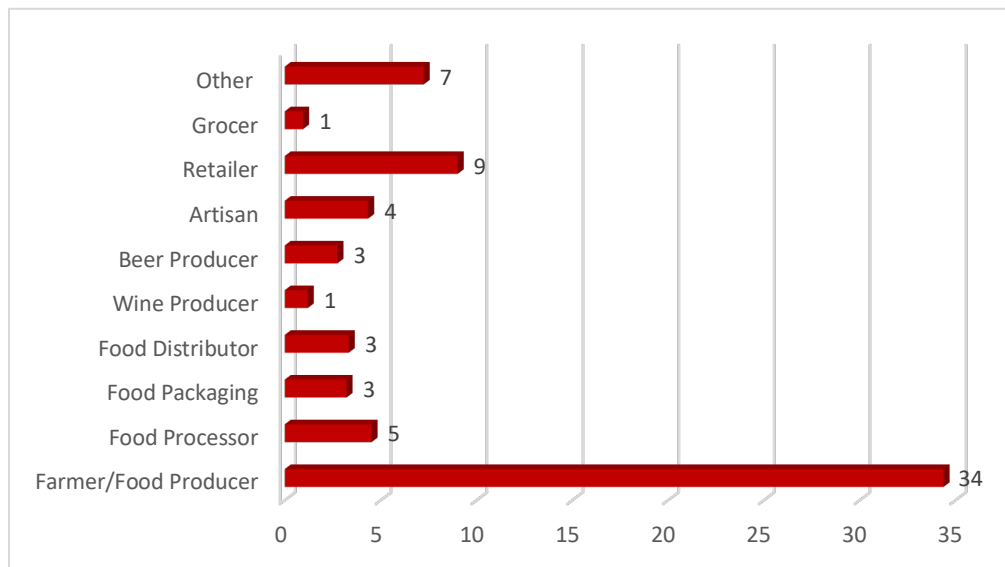
Figure 1 shows that respondents' locations by their ZIP codes are spread rather evenly with a lower representation in the northwest, central, and southwest Indiana.

Figure 1. Indiana Grown Survey Respondent's Locations



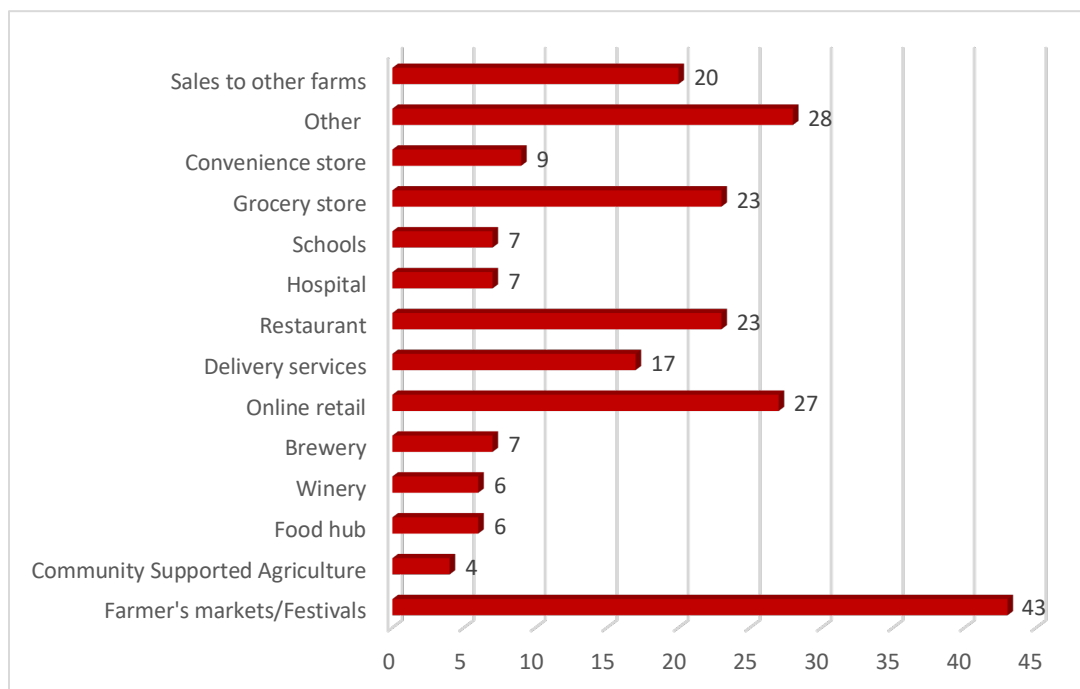
Forty-eight percent of respondents are farmers and/or food producers as their primary business activity, about 13% are retailers, and about 6% are food processors and artisans. Other business activities include food packaging, food distribution, beer production, wine production, and grocery (Figure 2). Respondents specified in the category 'Other' following activities: honey production, artisan, distiller, re-packer, K-12 school, spirit producer, soap maker, food show, seed bean producer, and equipment manufacturer.

Figure 2. Indiana Grown member's activities (N=71)



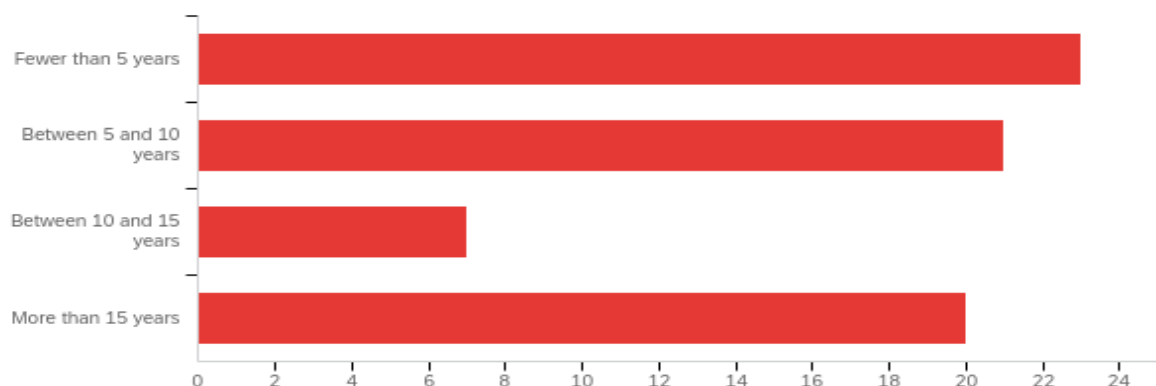
Respondents were asked to specify the market where they sold their items in 2019 (Figure 3). The majority of respondents sold their produce on farmers' markets and festivals (19%), 12% were selling through online retail, and 10% delivered their items to restaurants and grocery stores. About 12% of respondents indicated other ways of selling their products, such as Big Box, roadside stand, other distillery and tasting room, farm store, farm stand, catering, liquor store, and arts & craft festivals. Most of the respondents indicated more than one market where they sell their products.

Figure 3. Please specify markets where you sold your items in 2019.



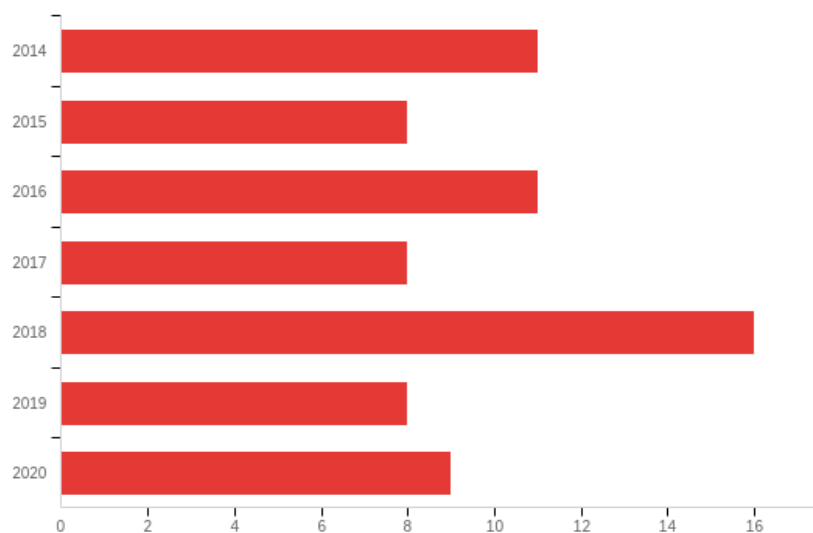
Sixty-two percent of respondents reported having their business or farm in operation for less than ten years (Figure 4).

Figure 4. How many years has your farm or business been in operation? (N=71)



Twenty-two percent of respondents became Indiana Grown members in 2016 (Figure 5).

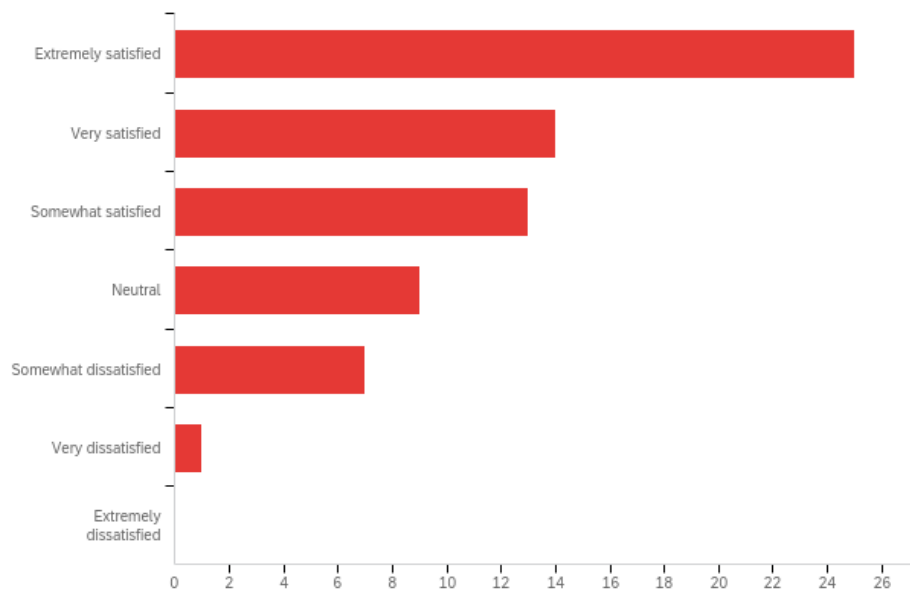
Figure 5. When did you become a member of Indiana Grown? (N=71)



3.2 Satisfaction with membership in Indiana Grown

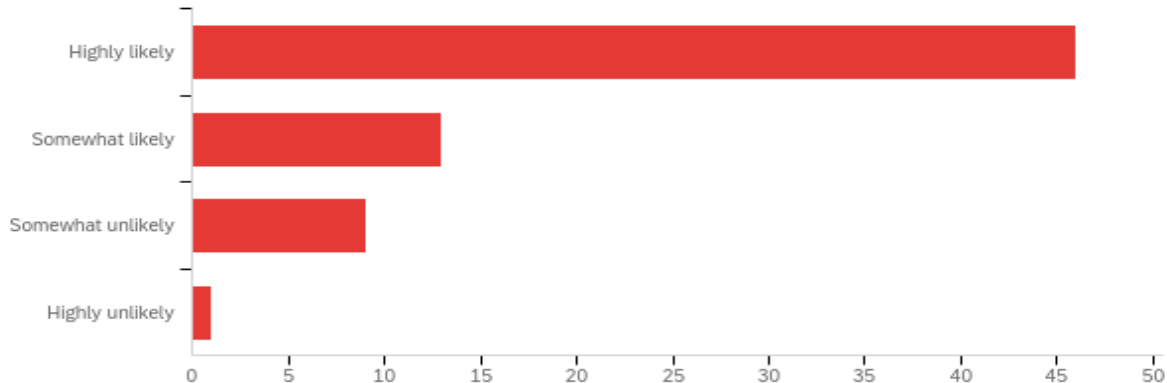
Respondents were asked about their satisfaction with membership in Indiana Grown. Thirty-six percent of respondents are extremely satisfied with their Indiana Grown membership (Figure 6). Only one member indicated to be very disappointed.

Figure 6. Overall, how satisfied are you with your Indiana Grown membership? (N=69)



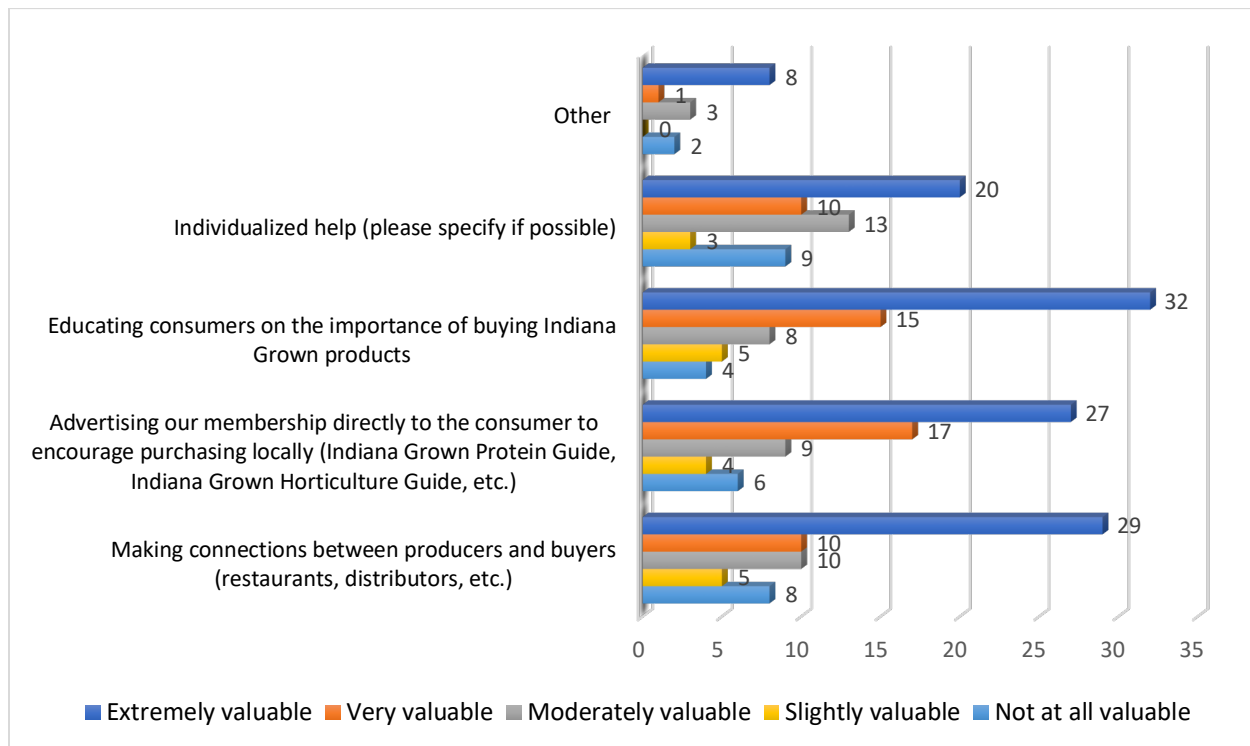
The vast majority of respondents (67%) would highly likely recommend an Indiana Grown membership to others (Figure 7).

Figure 7. How likely would you be to recommend an Indiana Grown membership to others? (N=69)



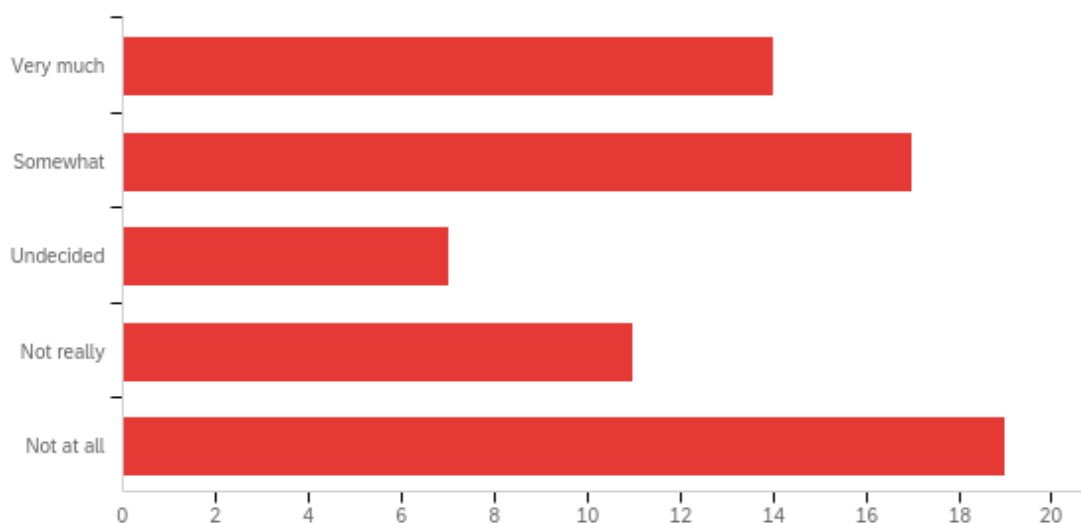
Respondents were asked how valuable different benefits and programs provided by Indiana Grown are. Most of the respondents considered the benefits and programs extremely valuable (Figure 8). 'Educating consumers on the importance of buying Indiana Grown products' was the best-rated program, followed by 'Advertising the membership directly to the consumer to encourage purchasing locally (Indiana Grown Protein Guide, Indiana Grown Horticulture Guide, etc.)', and 'Making connections between producers and buyers (restaurants, distributors, etc.)'. However, for some respondents, the benefits of 'Making connections between producers and buyers' and 'Individualized help,' in particular, were not at all valuable. Respondents did not specify any other Indiana Grown benefit or program.

Figure 8. Overall, how valuable is each of our benefits/programs?



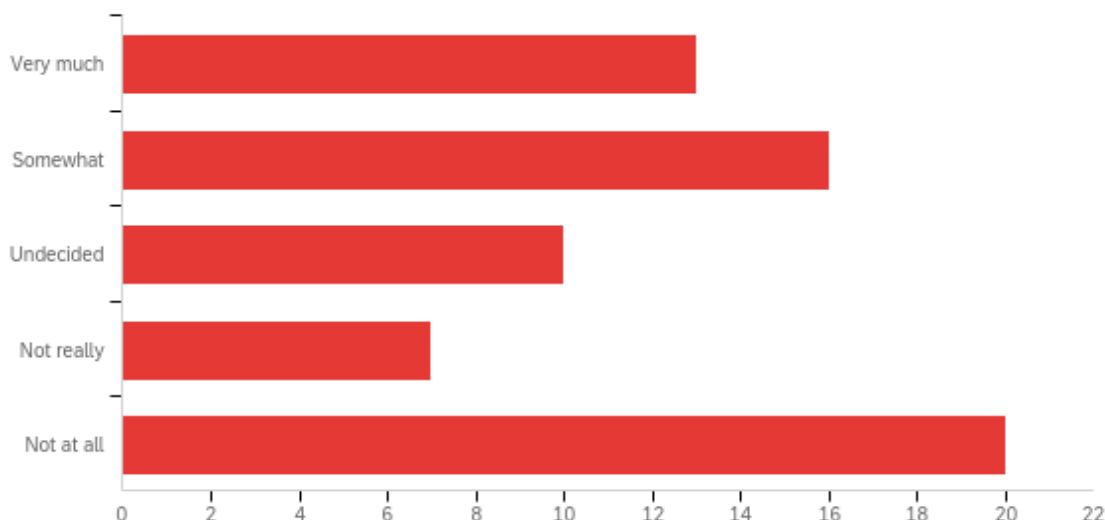
The answers to the question on the extent to which the Indiana Grown membership helped develop professional relationships with other organizations revealed opposed results. Twenty-one percent of respondents reported that they were very much able to create professional relationships with other organizations due to their Indiana Grown membership (Figure 9). On the other hand, 28% of respondents did not develop any relationship at all.

Figure 9. To date, to what extent have you been able to develop professional relationships with other organizations due to your Indiana Grown membership? (N=68)



The responses related to the contribution of professional relationships to the respondent's business activities correspond with the role of Indiana Grown in developing professional relationships. Most likely, respondents that did not develop professional relationships also indicated that those relationships did not contribute to their business activities (Figure 10).

Figure 10. To what extent have these professional relationships contributed to your business activities? (N=66)



Respondents were asked how often they use the Indiana Grown logo. Most of them (41%) admitted they do not use the logo (Figure 11). Twenty-nine percent of respondents use the logo for all their products.

Figure 11. How often do you use the Indiana Grown logo? (N=70)



Which of Indiana Grown's current events do you like the most?

Respondents were asked which of Indiana Grown events they like most. The most popular events are the Indiana State Fair (6 out of 28 respondents) and the Annual Market at Monument Circle (6 out of 28). Other events mentioned by respondents include Meeting at Statehouse, Chef JJ's

dinner, and Wish TV spot. Two out of 28 respondents have never attended any event, and six respondents are not aware of any Indiana Grown event.

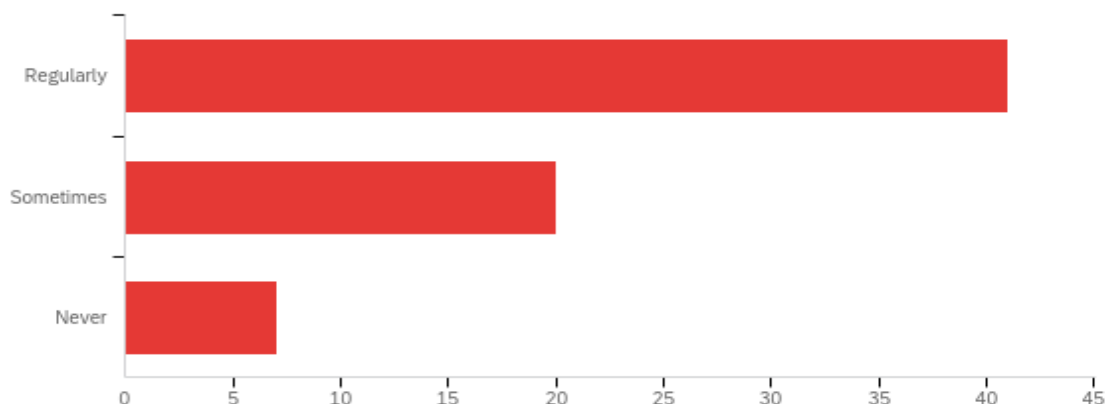
What types of events would you like to see Indiana Grown host in the future?

Twenty-eight respondents answered the question regarding potential future events as follows:

- Four respondents would like to have more promotional and marketing events that would promote their business.
- Based on the popularity of the circle type market, two respondents would enjoy the regional monument circle type market in southern and northern Indiana.
- Other required activities include:
 - o social media assistance;
 - o marketing training;
 - o food show;
 - o product-specific events such as hops festival;
 - o specialized workshops on shipping, labeling laws, legal contracts for wholesale, and agritourism.

Respondents were asked how often they read the Indiana Grown newsletter. Sixty percent of respondents read the newsletter regularly, and only 10% read has never read it (Figure 12).

Figure 12. How often do you read the Indiana Grown newsletter? (N = 68)



What type of content would you like to see in the Indiana Grown newsletter?

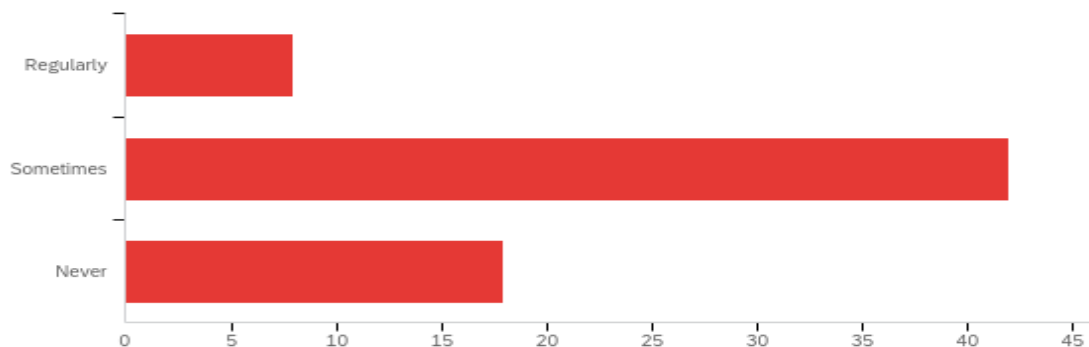
Twenty-three respondents answered the question regarding potential newsletter content as follows:

- Four respondents would leave the newsletter the same as now.

- Three respondents would appreciate more event opportunities to participate in and event updates.
- Three respondents like the marketing of Indiana Grown products and would welcome small business advertising and more social media and marketing support.
- Three respondents would like to see more member stories and interviews with local farmers.
- Two respondents were not aware of an Indiana Grown newsletter.
- Reduce the focus on farmers and increase the orientation on other manufactured products for sale.
- More information about:
 - Regular business challenges
 - Grant availabilities
 - Educational opportunities
 - How is the Indiana Grown brand protected?
 - Business partnership with other members
 - How are members navigating COVID-19?

Respondents were asked how often they visit the Indiana Grown website. Sixty-two percent replied they sometimes visited the website, and 26% have never visited the website (Figure 13).

Figure 13. How often do you visit Indiana Grown website? (N = 68)



What agriculture and business-related topics are of most interest to you right now?

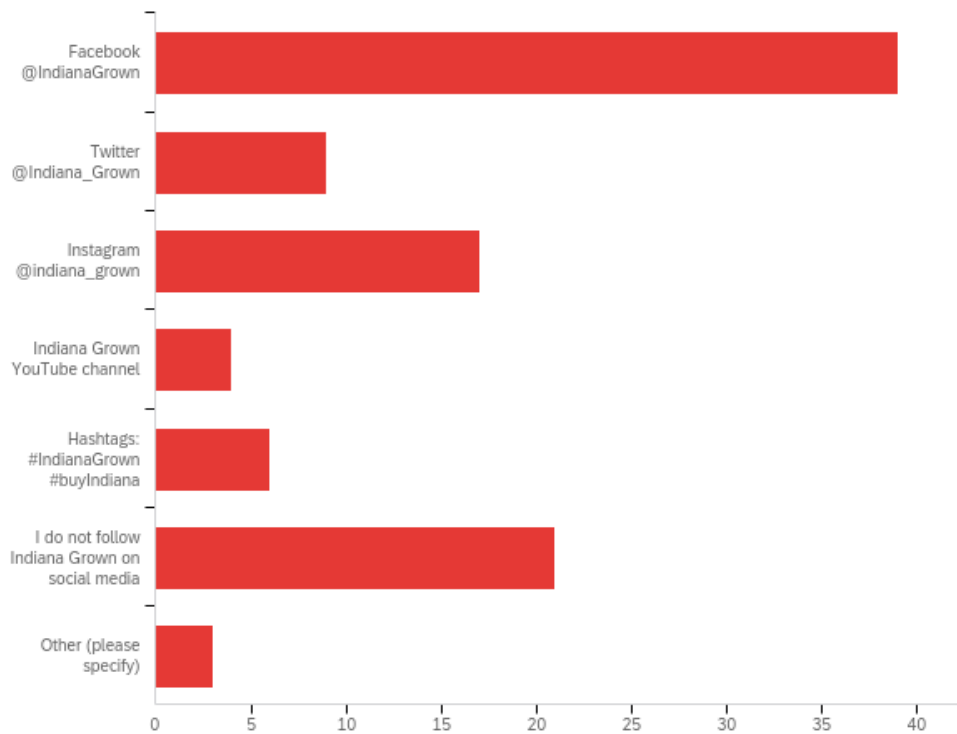
Respondents listed the following agriculture and business-related topics they are interested in:

- Local food movement
- Opportunity to continue to grow.
- Imported honey

- Mushroom stuff
- How to most effectively market using the Indiana Grown brand?
- Seafood/Shrimp and thinking outside the box sales approaches
- Emphasis on marketing for specialized businesses
- Purchasing goods for K-12 food service.
- Pollination, Beekeeping
- Regenerative Organic Agriculture
- Conservative practices
- Soybeans and protein plant products
- How to work with government organizations to survive the pandemic?
- Lamb import /export
- Growth of non-production meat sales directly from farms
- Inheritance taxes on farm properties
- Availability of livestock processing
- Marketing, social media, and bookkeeping
- New ideas to expand the operation and diversify
- The lack of frozen food processors in Indiana - how can we change this? It is the single most limiting factor in fresh vegetable production.
- Agritourism
- Cut flower production and sales in the pandemic.
- Starting a co-op or joining one, forming farmer-to-farmer selling partnerships
- Aquaculture
- Food safety, crop production improvements, crop presale processing systems

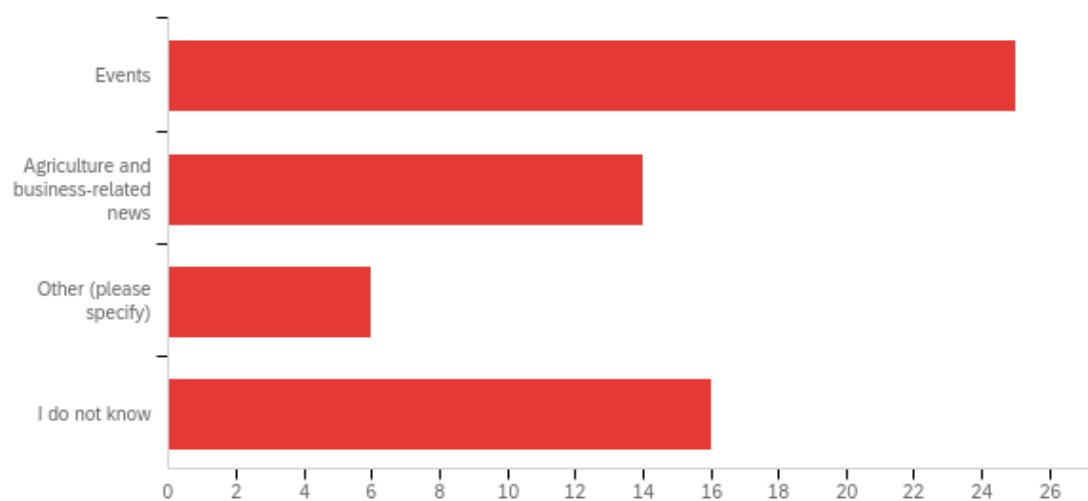
Questions about how often respondents follow Indiana Grown on social media revealed that of those who follow Indiana Grown posts, 40% follow this organization on Facebook, 17% on Instagram, and 9% on Twitter (Figure 14). Some respondents follow Indiana Grown on multiple social media. Twenty-one percent of respondents do not follow Indiana Grown on social media.

Figure 14. Do you currently follow Indiana Grown on social media?



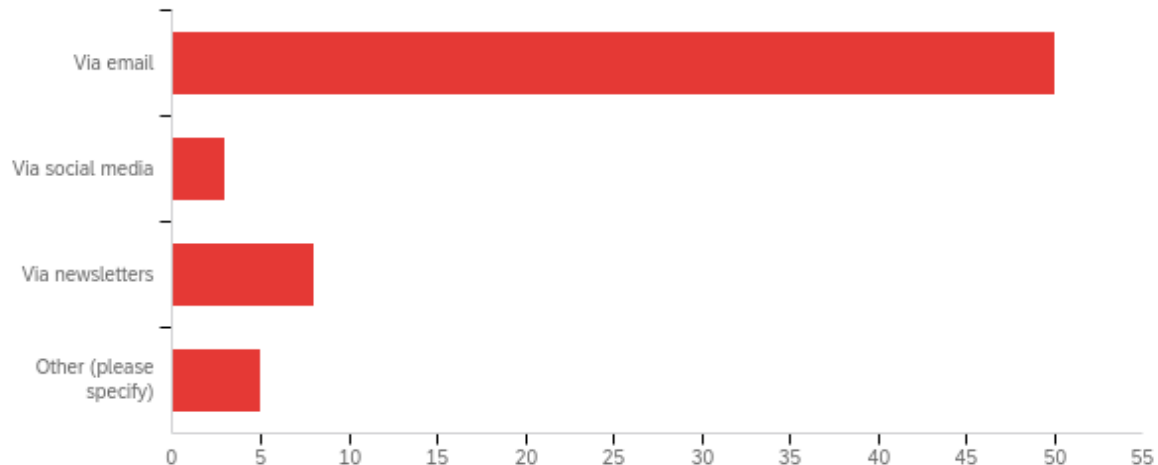
Respondents were asked what they would like to see posted on social media. The most preferred posts are information about events (41% out of 61 respondents) and agriculture and business-related news (23%) (Figure 15). Twenty-six percent of respondents do not know what they would like to see posted.

Figure 15. What would you like to see Indiana Grown post about on social media? (N = 61)



The majority of respondents (76%) prefer to receive news and announcements from Indiana Grown via email (Figure 16). The second most preferred way is via a newsletter (12%). One respondent would like to obtain the information via a hard copy newsletter.

Figure 16. How do you prefer to receive news/announcements from Indiana Grown? (N=66)



What do you currently like most about Indiana Grown?

Respondents provided different answers based on their personal preferences and experience and the focus of their business. The answers include:

- The most valuable benefit Indiana Grown provided to its members is the promotion of buying local products (8 respondents).
- Respondents also enjoy brand recognition in their marketing activities.
- Willingness and availability of the staff to help.
- Connections and contacts gained through Indiana Grown events
- The online store
- Sales and networking opportunities
- Good source of information
- *"It is an active program constantly offering opportunities, wanting feedback, and showcasing members on social media via videos, pictures, commenting on members' social media, etc."*
- Good exposure for smaller entities

What do you currently like least about Indiana Grown?

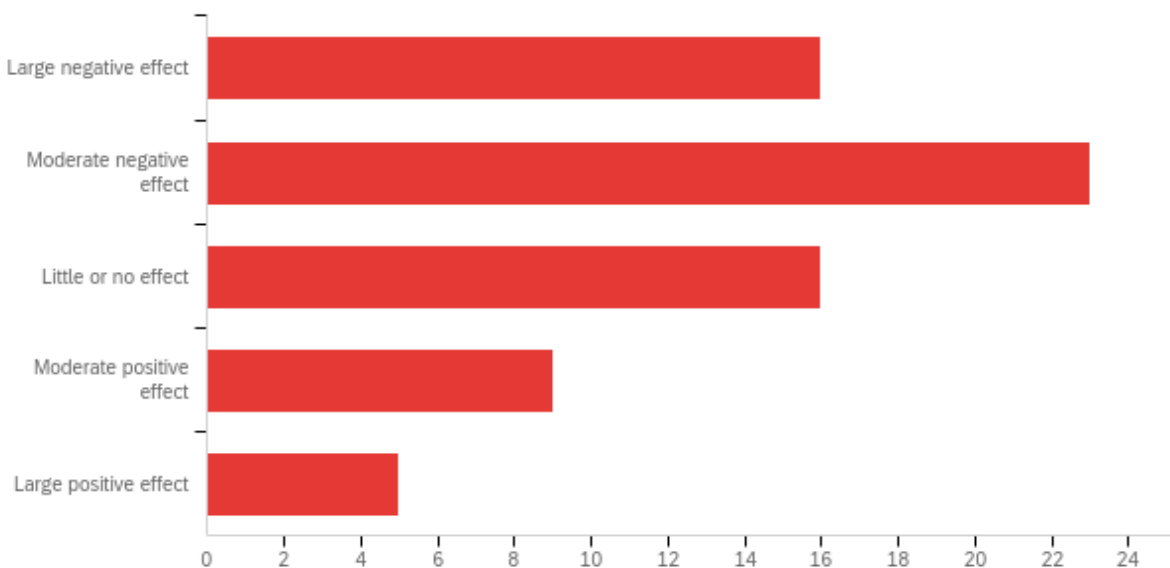
Again, respondents provided different answers based on their personal preferences and experience and their business's focus. The answers include:

- Eight respondents who answered this question complained about the lack of engagement with members.
- Other respondents point out the exposure to small farmers, and the rest of the members is left behind.
- Two respondents do not like surveys and website set-up as they are time-consuming.
- Another two respondents expressed their concerns regarding the Indiana Grown logo on products not growing in Indiana, *"I feel the Indiana Grown logo on products not grown within our state is misleading to the consumer. The consumer assumes products bearing the logo are in fact grown here when some are not."* and *"I would guess the greatest use of the Indiana Grown label is by a Japanese Corporation that is the largest importer of Canadian pigs into Indiana. "*

3.3 Impacts of COVID-19 on the farm or business performance

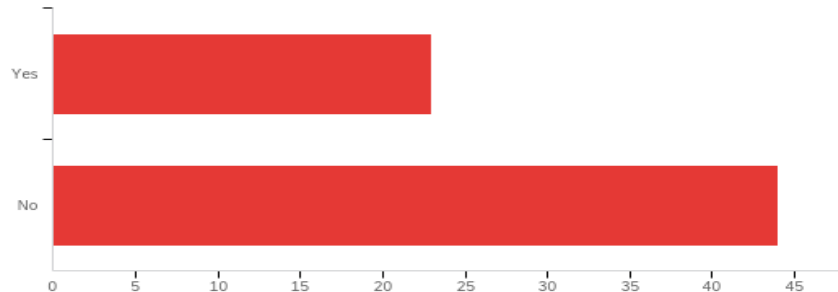
Respondents were asked how their farm or business was affected by COVID-19. Fifty-six percent of 69 respondents reported negative effects, and 20% reported a positive effect (Figure 17). Twenty-three percent of respondents were not or only little affected by COVID-19.

Figure 17. Overall, how has your farm or business been affected by the COVID-19 pandemic? (N=69)



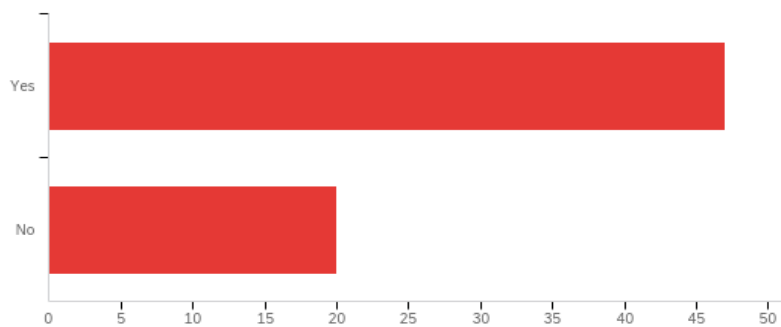
Respondents were asked if their business temporarily closed for at least one day due to COVID-19. Sixty-six percent of 67 respondents did not have to close any of their locations (Figure 18).

Figure 18. Between March - September 2020, did your business temporarily close any of its locations for at least one day due to the COVID-19 pandemic? (N=67)



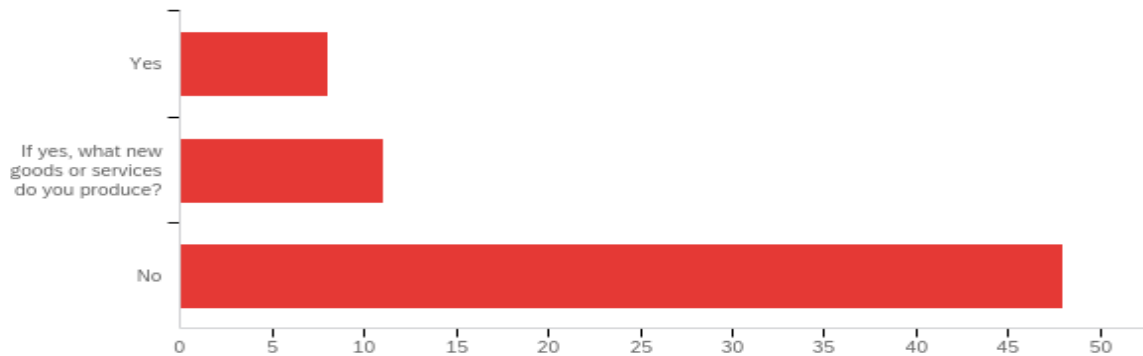
Unfortunately, 70% of respondents had disruptions in their supply chain between March and September 2020 due to the COVID-19 pandemic (Figure 19).

Figure 19. Did your business have disruptions in its supply chain between March - September 2020 due to the COVID-19 pandemic?



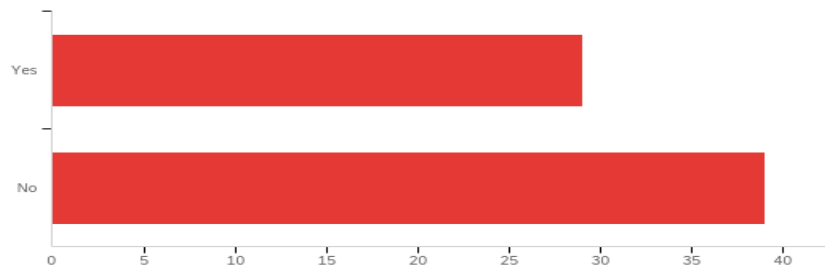
Only 12% of respondents shifted their business to producing other goods or services due to the COVID-19 pandemic (Figure 20). Those respondents listed the following items as new products and services: coffee-related products, hand sanitizers, hard seltzer, skin balm for healthcare workers, shift from wholesale to retail packaging, shift from selling meat to selling breeder piglets, pumpkins, more outdoor spaces, face masks to make up for the lost revenue of dog treats sales, free delivery to high-risk customers.

Figure 20. Did your business shift to the production of other goods or services between March - September 2020 due to the COVID-19 pandemic?



Lastly, respondents were asked if they adopted any pickup/carry-out/delivery as their only means of providing goods and services to their customers due to COVID-19. Forty-three percent of respondents adopted these methods as the only means of providing their goods and services. (Figure 21).

Figure 21. Did any of your business locations adopt pickup/carry-out/delivery as their only means of providing goods and services to their customers between March - September 2020 due to the COVID-19 pandemic?



3.4 Demographic information

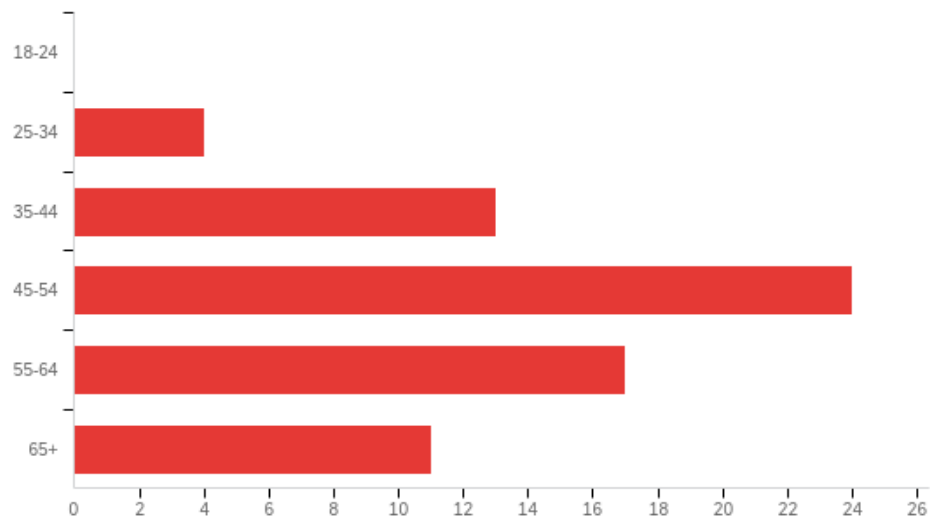
Survey respondents provided demographic information about themselves. More than half of the respondents who answered the questions are male (53%) and 40% female. Seven percent of respondents refused to answer the question.

Most respondents indicated that they are not Hispanic or Latino (91%). The remainder declined the answer. Most of the respondents are white (81%), 5.7% are Black or African American, and 3% are Asian. Seven percent preferred not to say.

Regarding respondents' age, the largest age category comprised of the respondents from 45-54 (35%), followed by the age range 55-64 (25%), and 35-44 (19%) (Figure 22). The youngest

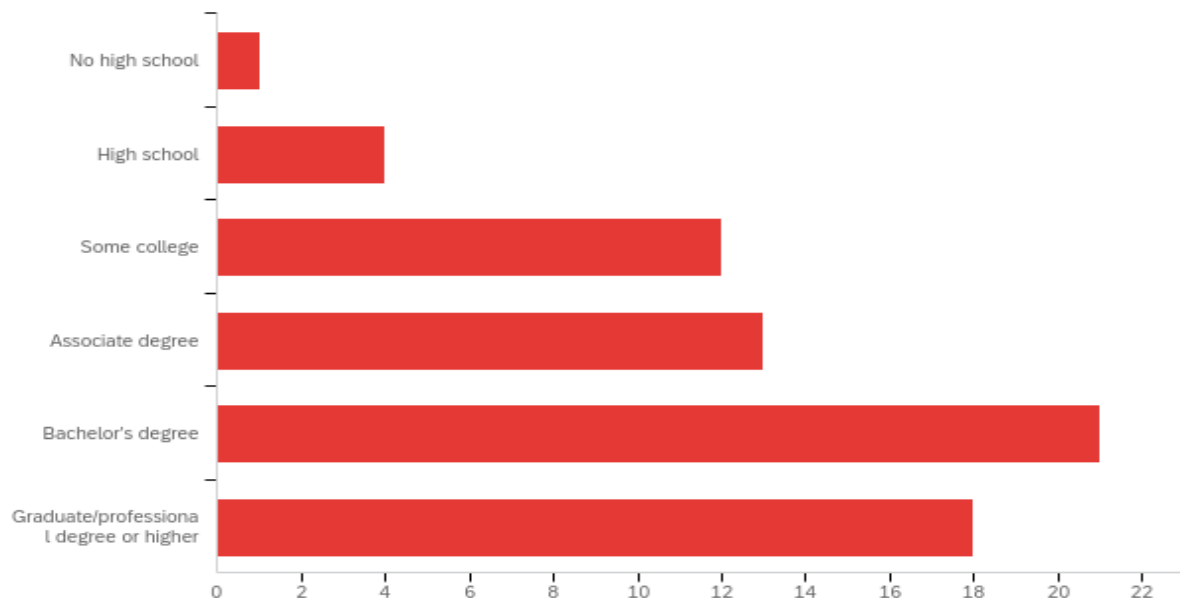
survey respondents are between 25-34 years old (only 4%), and the oldest respondents are represented by the category 65+ (16%).

Figure 22. What is your age range?



The respondents' educational attainment primarily fell into the post-secondary and above categories, with 93% of respondents having at least some post-secondary to graduate/professional training (Figure 23). The most common educational attainment across respondents is a bachelor's degree (30%) and a graduate/professional degree or higher (26%).

Figure 23. What is your highest level of educational attainment?



4 Conclusion

Despite the low response rate, the survey provided important insights of Indiana Grown members regarding their business characteristics, membership satisfaction, impacts of COVID-19 on their businesses, and demographic information. As respondents are spread across Indiana, and the focus of their businesses and farms differ, we received many contradictory results reflecting diverse perspectives on their membership and economic performance.

In general, respondents are satisfied with their membership and would recommend the membership to others. The survey revealed that most of the respondents consider the Indiana Grown benefits and programs as extremely valuable, especially the program 'Educating consumers on the importance of buying Indiana Grown products.' However, several respondents did not find any value in some of the programs and benefits, especially in 'Making connections between producers and buyers' and 'Individualized help.' Nearly one-third of respondents did not develop any professional relationship and thus do not experience any contribution to their business activities. Also, some respondents repeatedly pointed out the excessive exposure to small farmers.

The most popular Indiana Grown events are Indiana State Fair and Annual Market at Monument Circle. Respondents like promotional and marketing events and would like to have more events that promote their business. Several respondents reported they were not aware of Indiana Grown events and communication ways such as the Indiana Grown newsletter. Many respondents like to use the Indiana Grown logo. However, nearly half of the respondents do not use the Indiana Grown logo at all.

COVID-19 had mostly large or moderate negative impacts on the farm or business performance, and the majority of respondents experienced disruptions in their supply chain in 2020.

The demographic profile of respondents shows that most respondents were farmers/food producers selling their products at farmers' markets and festivals. More than half of the respondents have had their farm or business in operation for less than five or ten years, respectively.

To conclude, creating connections between producers and buyers is extremely valuable for many respondents. Respondent's reactions made it clear that Indiana Grown should work more on promoting non-farm businesses, emphasizing networking activities, providing business connections for Indiana Grown members, and improving communication with members.

Appendix 3. Producer Survey 2021 Results



Project Title: Economic Impact and Consumer Awareness Study of Indiana

Internal Report Indiana Grown Producer Survey 2021 Descriptive and Inferential Analysis

March 2022

Submitted by

Dr. Zuzana Bednarikova

zbednari@purdue.edu

Collaboration & Research Support provided by Alejandra Armesto, Dr. Michael Wilcox,
Claire Baney, and Tanya Hall

Introduction

In partnership with Purdue Extension and the Purdue University Department of Agricultural Economics (Purdue Team), Indiana Grown representatives intend to determine the economic impact and potential of the Indiana Grown program through a collaborative, science-driven approach. The Purdue Team defined the Producer Survey 2021 to focus on a few essential items and target the sample to represent the Indiana Grown producers in their production activities. Hence, the survey concentrated on the Indiana Grown member's product mix, economic performance, and participation in Indiana Grown events.

Given what the Purdue Team learned from the Producer Survey 2020 and to successfully address the response rate issue for the Producer Survey 2021, the team proposed and employed an iterative survey strategy using different tools. The producer survey was developed in Qualtrics - an online survey tool to distribute the survey invitation via email. In addition, hard copy surveys in a booklet form along with business-reply mails (prepaid envelopes) were also mailed to all Indiana Grown members.

A more personal approach to data collection was selected to ensure a higher response rate. All 1828 Indiana Grown members were divided into five groups based on their product portfolio and/or membership type: Group A - Horticulture, Grains, Oil (30.3% of members), Group B - Proteins and Livestock (18%), Group C - Natural Sugars, Bakeries, and other food manufacturing, Beverages (28.8%), Group D - Non-edible product manufacturing (7.3%), Group E - Wholesale and Retail Sale – Partner, Other Partners, Food Service and Restaurants (15.6%). Each member received a customized invitation and postcard based on the group they were involved in.

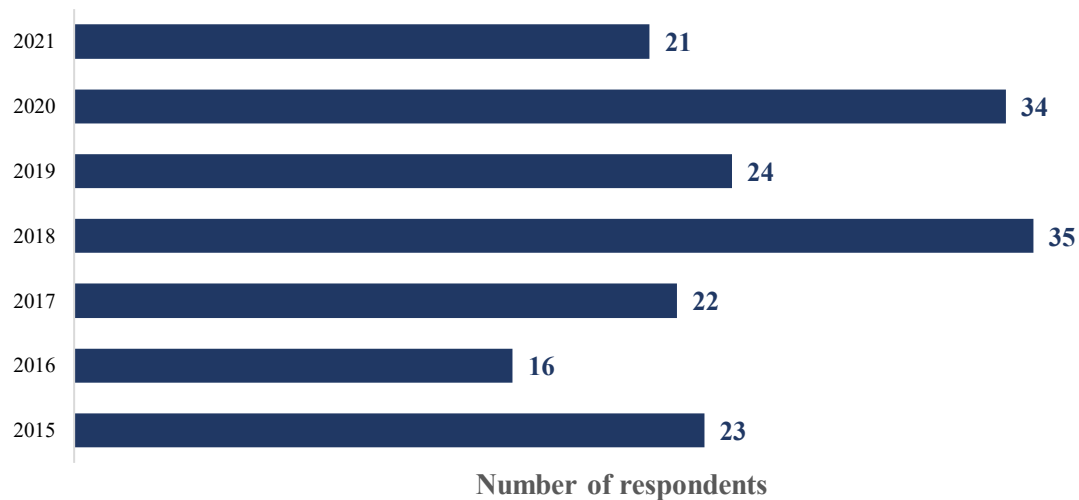
The Purdue Team and Indiana Grown representatives distributed the producer survey to all 1828 Indiana Grown members in November 2021 in 7 days intervals as follows, (a) distribution of emails with a survey link and mails with a hard copy survey including a QR code to a survey, (b) personalized postcard distribution, (c) distribution of emails with a survey link and mails with a hard copy survey including a QR code to a survey. Moreover, Purdue Extension educators were assigned to regions and counties to reach out to Indiana Grown members in their territories.

The Purdue Team obtained 211 valid responses in total - 110 online and 101 mail responses. The response rate was 11.5% which is 1.5% higher than our goal 10% valid response rate to get a statistically significant sample.

1 Indiana Grown member's business characteristics

Figure 1 shows that most of the members of Indiana Grown enrolled in the program in 2108 (18.2%) and the least in 2016 (8.56%). Some survey participants were unsure about the date they joined the program. Hence the number of responses collected is less than the total number of respondents.

Figure 1. What year did you become an Indiana Grown Member? (N=187, 89%)



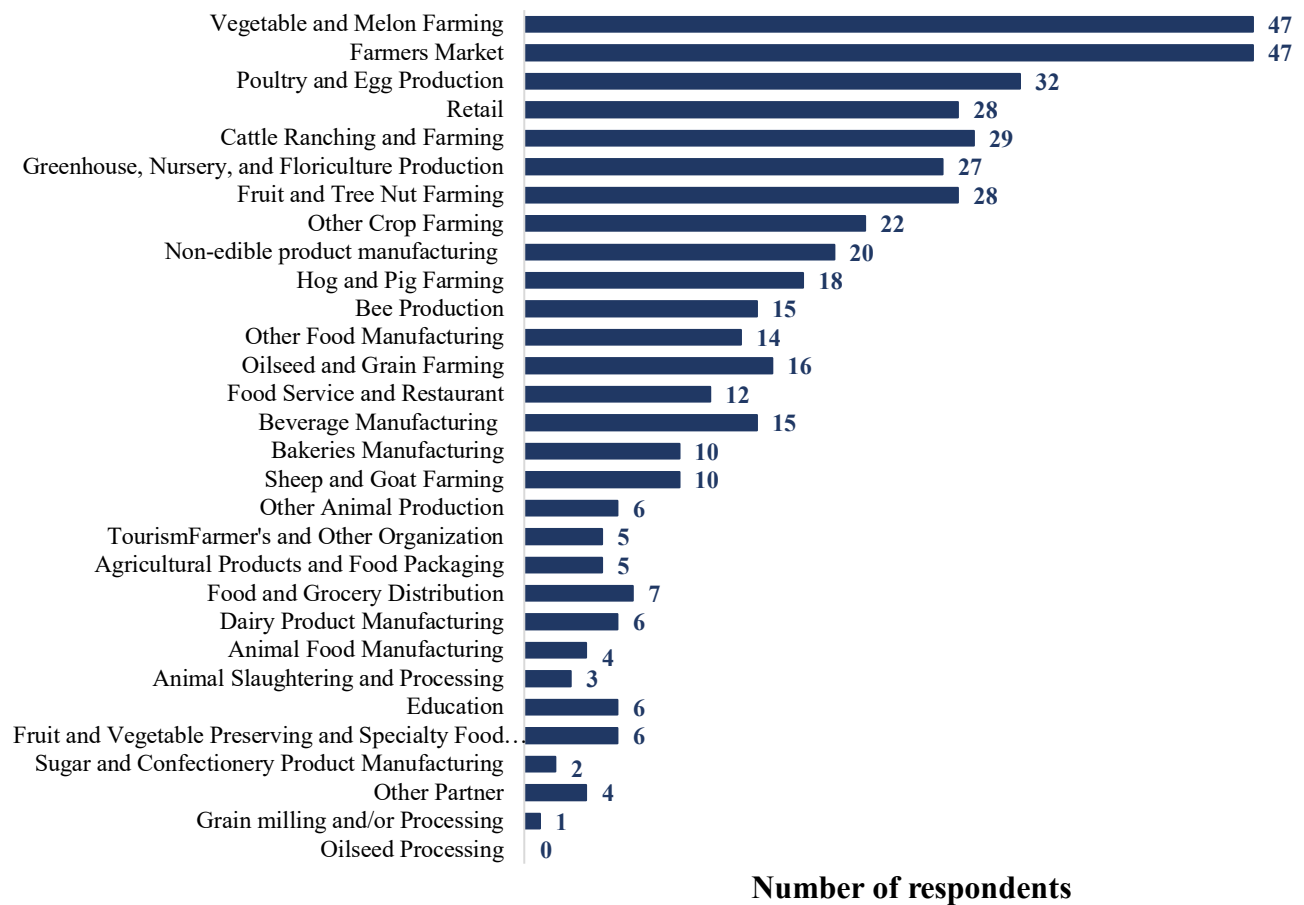
Producers were requested to specify the percentage of their operations related to Indiana Grown (Table 1). Nearly 53% of respondents indicated that more than 90% of their activities are tied up with the Indiana Grown program.

Table 1. What percentage of your operations are related to Indiana Grown? (N=182, 86%)

Share of activities related to Indiana Grown	Number of respondents
0% - 19%	39
20% - 39%	12
40% - 59%	13
60% - 79%	10
80% - 100%	110

Figure 2 presents detailed information about the production of the Indiana Grown members. The results show that most of the respondents are involved in Farmer's Markets (25.6%), Vegetable Farming (25.6%), and Retail (16%). On the other hand, only 0.5% of respondents are active in Grain Processing and none in Oilseed Processing.

Figure 2. Respondent's activities related to Indiana Grown (N=184, 87%)



2 Impacts of the COVID-19 pandemic on the business performance

Respondents were asked how their farm or business was affected by COVID-19. Most respondents reported moderate negative effects (27.8%) or little or no effect (26.3%). Eleven percent of respondents experienced significant positive effects, and nearly 15% indicated large negative effects (Figure 3).

Figure 3. Overall, how has your business been affected by the COVID-19 pandemic? (N=209, 99%)

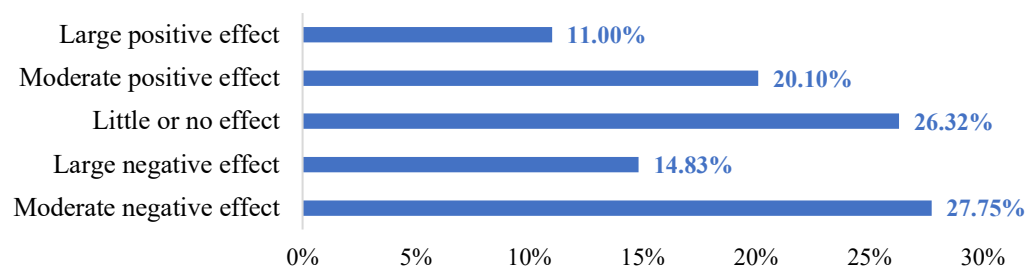
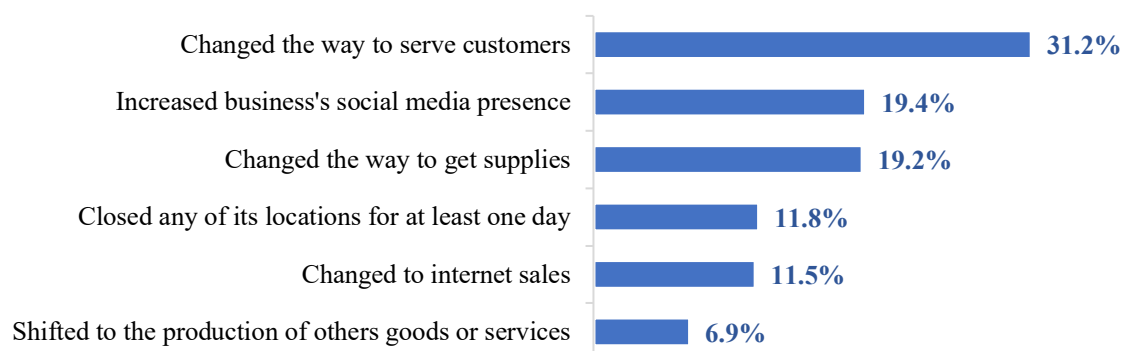


Figure 4 shows the actions that businesses implemented to face the COVID-19 pandemic. Twenty-three percent of respondents did not answer this question, most likely because they did not take any action regarding the COVID-19 situation. Twenty-seven percent of Indiana Grown members responding to this question did only one action. The rest had to apply at least two activities to keep their businesses running. Most respondents (31.2%) changed how they serve customers, and 19.1% increased their business's social media presence. Only 6.9% of respondents affirmed that they shifted their production to other goods and services.

Figure 4. Did the business do any of the following actions due to the COVID-19 pandemic? (N=164, 78%)



3 Participation in Indiana Grown activities

The respondents were asked to mark in which events organized by Indiana Grown they participated. Most of the respondents (22.6%) read email Indiana Grown communication, followed by displaying a logo on signage and/or products (19%) and being listed on an Indiana Grown map, trail, or guide (15.4%). The activity with the lowest participation is using the opportunity of major grocery wholesalers (0.4%)

Figure 5. Which Indiana Grown events and activities have you participated in? (N=171, 81%)



Likewise, the survey had an open space to add some other responses besides the provided options. Other events where Indiana Grown members participated include the Lieutenant Governor visit (2 respondents), the use of the logo as stickers (2 respondents), joining the Indiana Grown dinner series (1 respondent), volunteering in the 2015 state fair booth (1 respondent), and Indiana Grown at the Statehouse (1 respondent).

4 Personal characteristics

Survey respondents provided demographic information about themselves. More than half of the respondents who answered the questions were male (52%), and 4% of respondents preferred not to answer the question (Figure 6).

Figure 6. Are you male or female? (N=202, 96%)



The vast majority of respondents indicated that they recognize their ethnicity as Hispanic or Latino (87.6%). One respondent indicated Hispanic or Latino ethnicity. The remaining 10.3% declined the answer.

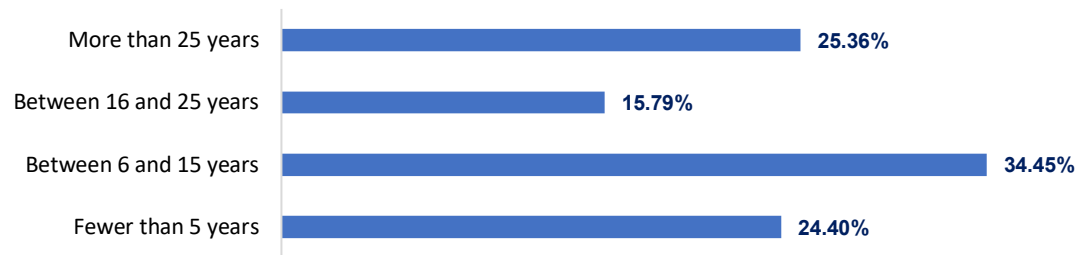
The respondents were also asked to identify their race. Eighty-six percent of 204 responding Indiana Grown members indicated White race. Three respondents identified themselves as bi-racial – American Indian or Alaska Native and White. Five respondents indicated to be Black or African American (Table 2).

Table 2. What do you usually identify as your race? (N=204, 97%)

Race	Count	Share
White	176	86.3%
Black or African American	5	2.5%
American Indian or Alaska Native	3	1.5%
Asian	0	0.0%
Two or more races	3	1.5%
Prefer not to answer	18	8.8%

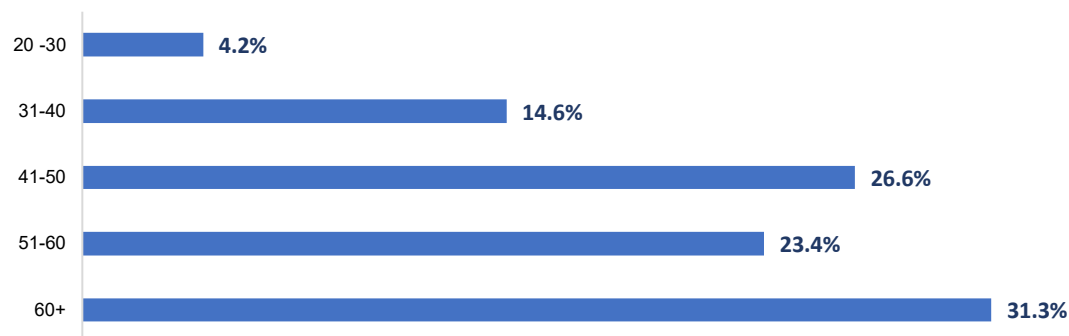
The question concerning the years of respondents' experience in their current industry revealed that the most populated category was between 6 and 15 years. In general, the results show that the respondents have been running their businesses for decades, as 41.2% indicated having an experience for more than 16 years (Figure 7).

Figure 7. How many years of experience do you have in your current industry? (N=209, 99%)



The average age of respondents that indicated their age was 50 years old. The results also showed that 81% of those respondents were 41 years old and older. The largest age category comprised the respondents that were 60 years and older (31.2%), followed by the age range 41-50 years old (26.6%) and 61-60 years old (23.4%) (Figure 8).

Figure 8. What is your age range? (N=192, 91%)



The respondent's educational attainment primarily fell into the post-secondary and above categories, with 100% of respondents having at least some post-secondary to graduate/professional training (Figure 9). The most common educational attainment across respondents is some college or technical school (34.1%) and 4-year college graduate (33.2%).

Figure 9. What is the highest degree or level of school you have completed? (N=205, 97%)

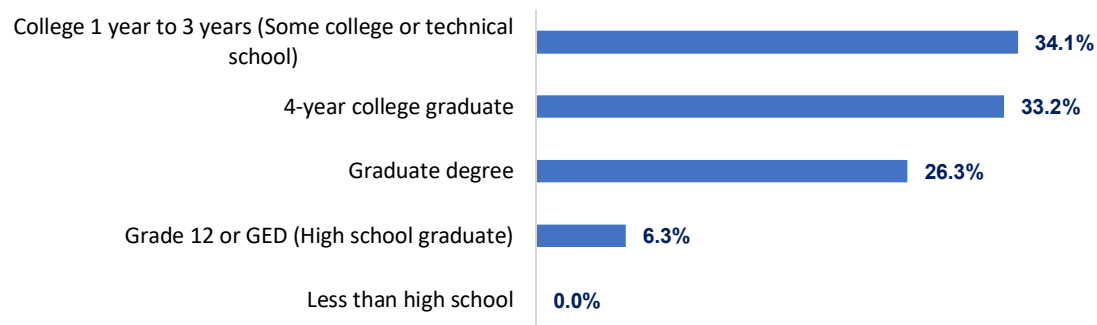


Figure 10 displays a distribution of Indiana Grown members by county. Counties with the highest number of members include Marion (263 members), Hamilton (107 members), Allen (68), and Monroe (62). There is no county with no members. However, several counties have only one member, such as Ohio and Pike.

Figure 10. Distribution of Indiana Grown members by county

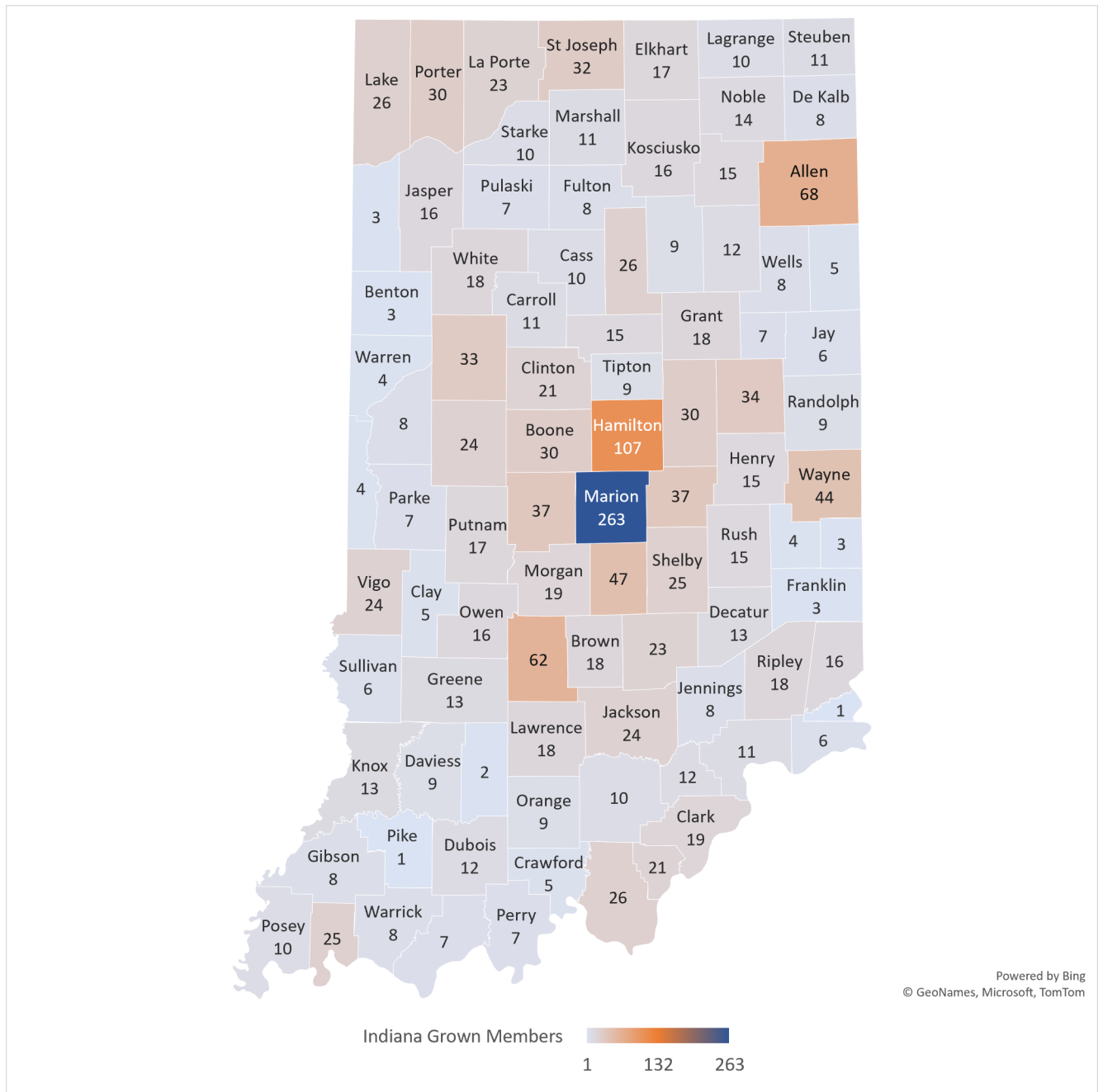


Figure 11 shows the respondent's share of the total members enrolled in Indiana Grown by county. Wabash and Martin counties had the highest response rate. In Wabash County, 3 out of 7 Indiana Grown Members completed the survey. In Martin County, one out of two filled out the survey. The highest number of responses arrived from Marion County. However, the response rate in this county was only 5% due to the total number of members residing in Marion County being 266 in 2021.

Figure 11. Indiana Grown survey respondent's locations

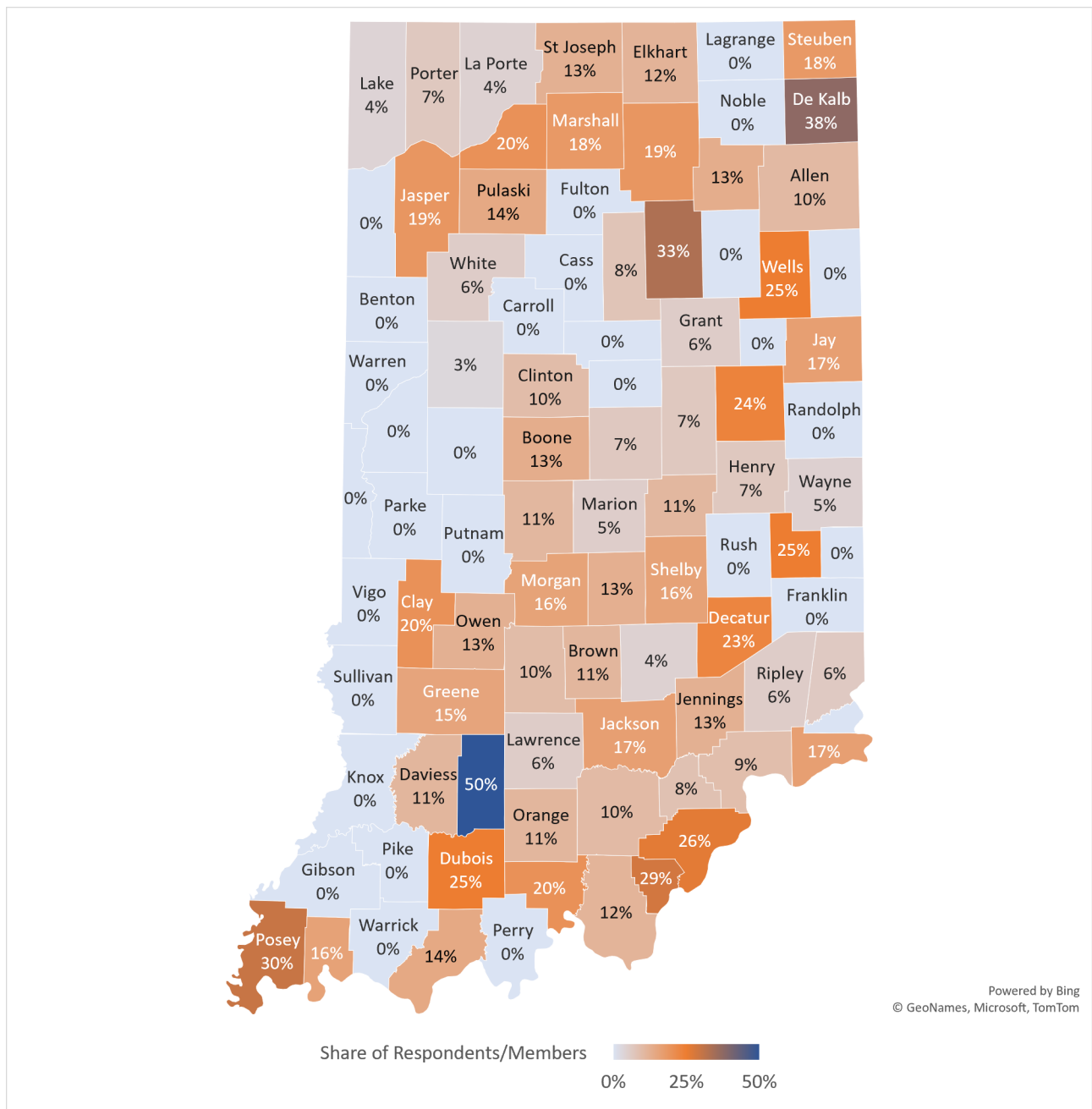
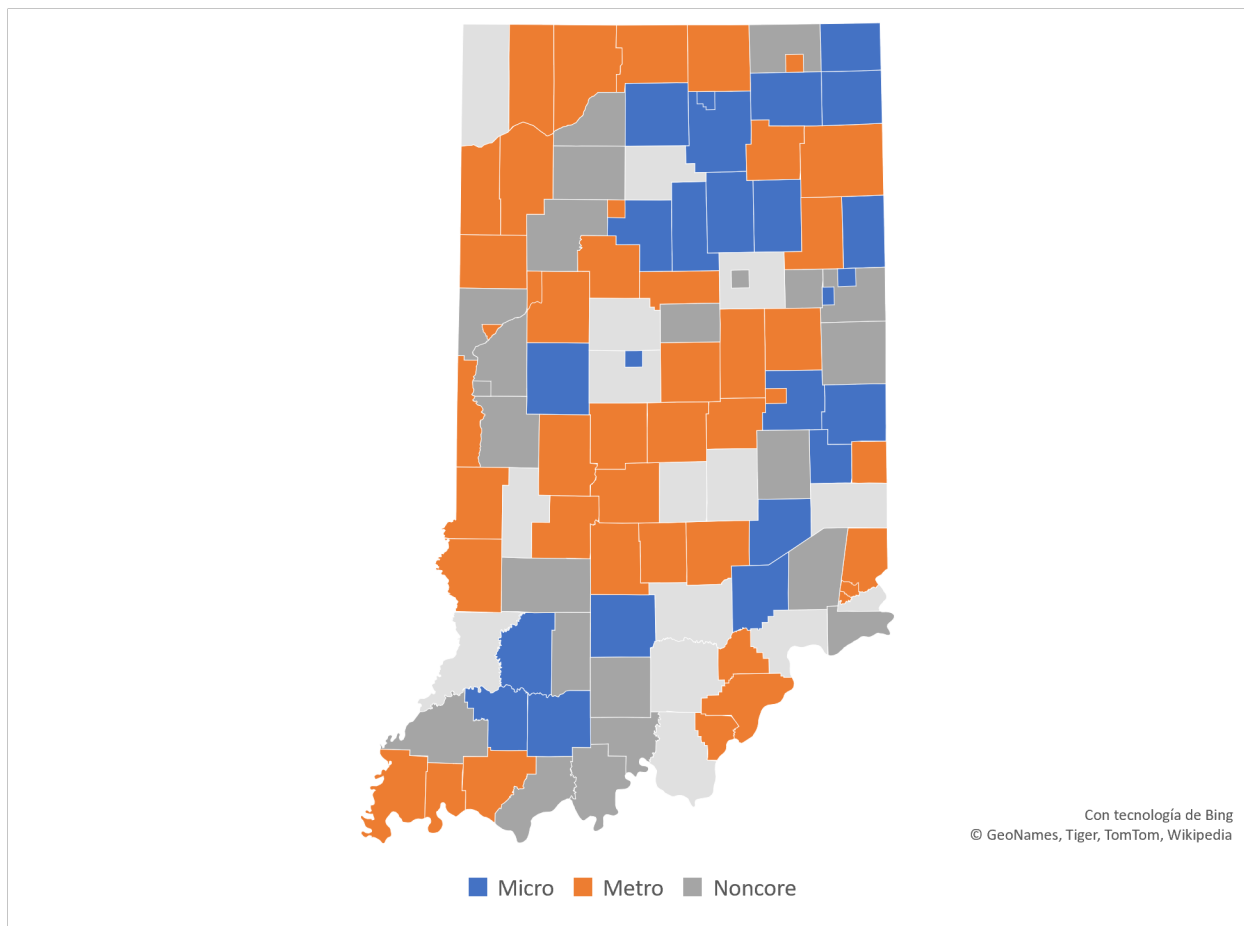


Figure 12 shows the classification of the counties depending on the location and demographic information. The metro area is assigned to central counties with urbanized areas of more than 50,000 people. Likewise, an outlying county is considered a metropolitan area if a quarter of its labor force travels to the central county or if the same percentage is employed in the major city. Nonmetropolitan counties could be classified into two: noncore and micropolitan counties. The first of them does not have a central city or a town and does not have a cluster of 10,000 residents. On the other hand, the micropolitan counties have one or more clusters with populations of 10,000 to 49,999 people.

Figure 12. Indiana Grown survey respondent's locations



5 Additional information about the survey participants

This chapter includes a deeper look into the respondent's characteristics regarding their activities related to Indiana Grown, membership lengths, and impacts of COVID-19 on their business activities.

Figure 13 illustrates the percentage of the member's operations related to Indiana Grown by sector. To handle a diverse portfolio of activities, our analysis focused on respondents whose businesses have more than the 80% of their operations associated with the program.

Figure 13. Member's activities related to Indiana Grown (N = 184, 87%)

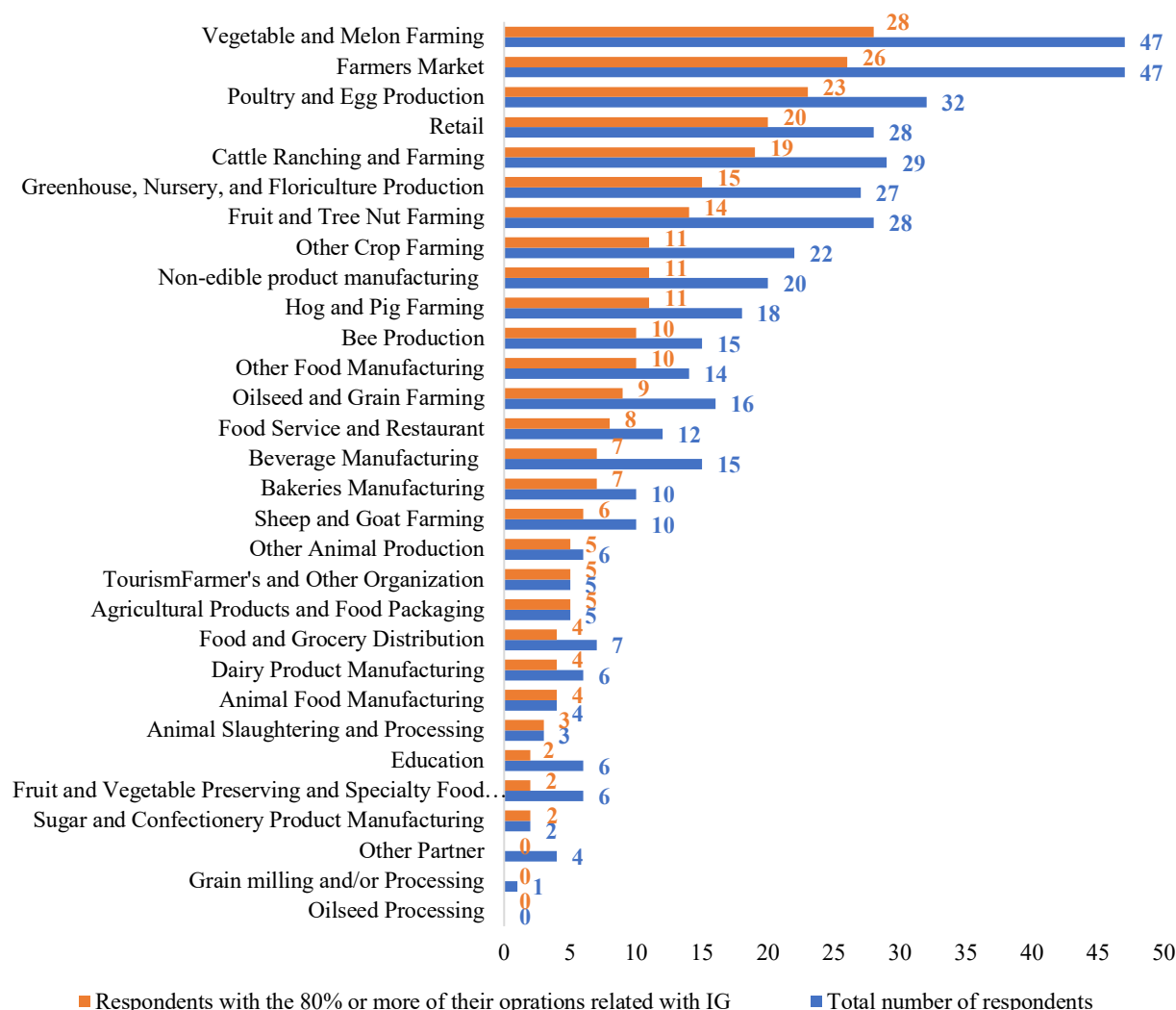


Figure 13 shows that out of the 184 respondents with businesses related to Indiana Grown, about 60% have more than the 80% of their operations related to the program. Vegetable and Melon Farming and Farmers Market are the ones that have the largest number of members associated with Indiana Grown, and 55% of the businesses that have their operations related to the program are between 80% and 100%.

Also, it is pertinent to highlight that despite the low number of respondents in Sugar and Confectionery Product Manufacturing, Animal Slaughtering and Processing, Animal Food

Manufacturing, Agricultural Products and Food Packaging, and Tourism and Farmers Organizations, all of their reported operations are 1000% related to Indiana Grown.

To learn more about the sectors strongly related to Indiana Grown, we looked deeper into the activities included in the aggregate sectors shown in Figure 12. We assigned the leading 30 businesses identified in the survey into nine categories as follows:

1. Horticulture, Grains, Oil
2. Natural Sugars
3. Proteins and Livestock
4. Bakeries and other food manufacturing
5. Beverages
6. Non-edible product manufacturing
7. Wholesale and Retail Sale-Partner
8. Other Partner
9. Foodservice and Restaurants

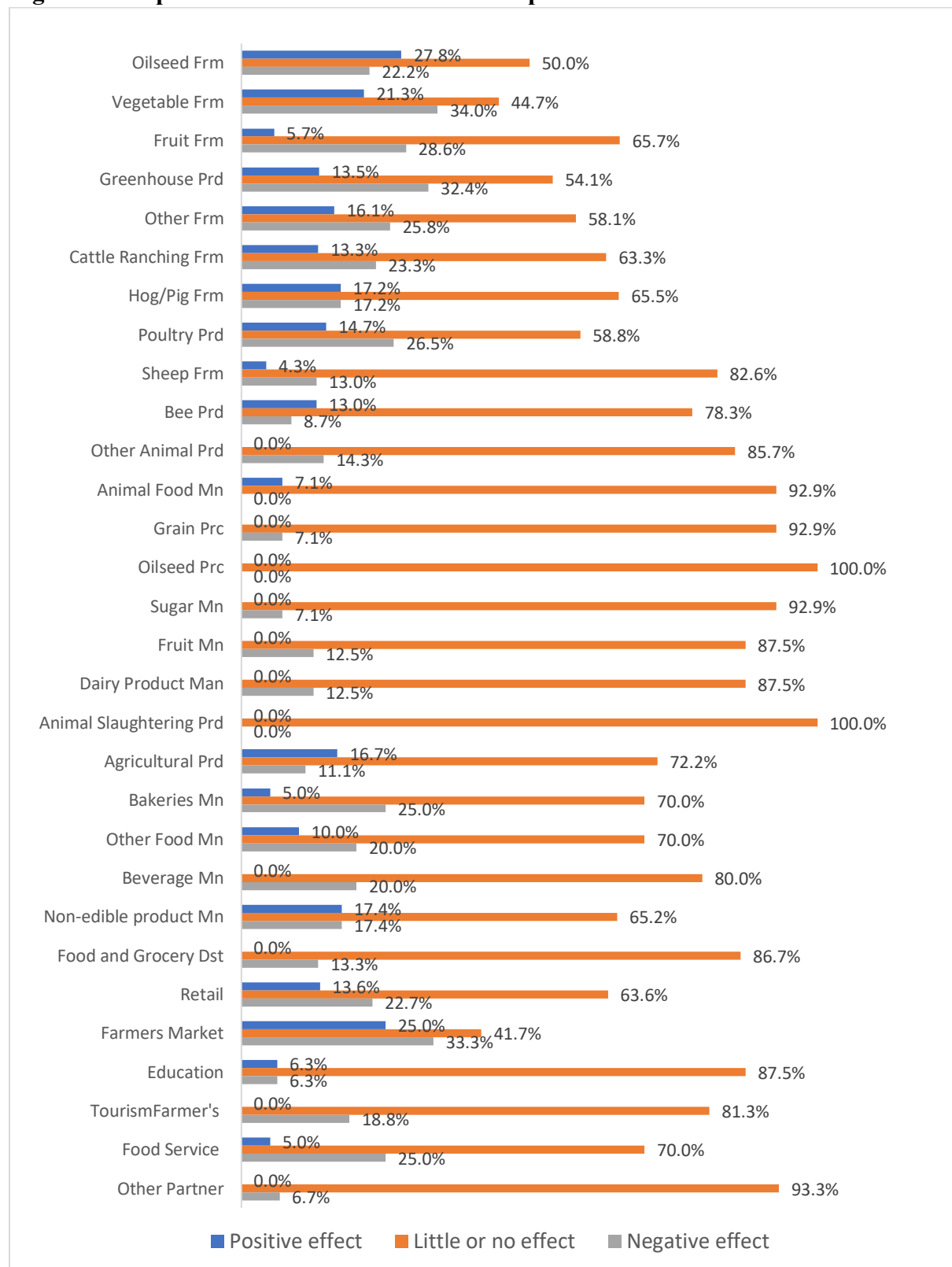
An Appendix shows a detailed cross-tabulation of business activities and their relation to Indiana Grown. We also were interested in the interlinkages between the number of members in every category of operations and the years they joined the Indiana Grown program. The results show that the categories with the most members enrolled in 2018 were Proteins and Livestock-oriented businesses. Horticulture, Grain and Oils; Proteins and Livestock; and Whole and Retail Sale businesses mostly joined Indiana Grown in 2020 (Table 3).

Table 3. Category of member's operations by the year of becoming an Indiana Grown member

	Horticulture, Grains, Oil	Natural Sugars	Proteins and Livestock	Bakeries and other food manufacturing	Beverages	Non-edible product manufacturing	Wholesale and Retail Sale - Partner	Other Partner	Food Service and Restaurants	Total
2015	18	0	10	2	3	1	7	1	1	43
2016	13	0	9	2	1	2	4	2	0	33
2017	14	0	14	1	0	1	14	1	2	47
2018	18	1	24	5	3	2	7	1	3	64
2019	18	0	16	2	3	4	10	5	3	61
2020	30	0	23	3	1	4	15	5	1	82
2021	14	1	6	2	1	3	13	0	0	40
Total	125	2	102	17	12	17	70	15	10	370

In the classification Horticulture, Grains and Oil, the category with more members joining the program in 2020 was Vegetable Farming, with ten new members. Wholesale and Retail Sale-Partner also had the highest number of enrollments in 2020. With nine new members, Farmers Markets was a category that included the most members. Finally, Proteins and Livestock had most of its registrations in 2018. Most of them operate in Cattle Ranching and Farming, and Poultry and Egg Production, with seven new businesses in each category.

Figure 14. Impact of COVID-19 on the business performance of Indiana Grown members



Note: Frm = Farming, Mn = Manufacturing, Prd = Production, Prc = Processing, Dst = Distribution

Finally, we analyzed the effects of COVID-19 on business performance by their activities (Figure 14). In general, businesses mainly did experience little or no impact from the COVID-19 pandemic. However, many businesses were negatively rather than positively impacted by the pandemic. The most negatively impacted activities include Fruit and Vegetable Farming, Animal Production, Bakeries Manufacturing, Farmer's Markets, and Food Services.

Conclusion

The Purdue Team used multiple tools to collect survey responses, resulting in a participation rate of 1.5% over the goal of getting a statically significant sample. The survey provides important insights into the Indiana Grown member's business characteristics, the impact of the COVID-19 pandemic on business performance, their participation in Indiana Grown activities, and a brief description of their demographic characteristics.

Half of the respondents indicated that more than 90% of their activities are tied up with Indiana Grown. The activities with high involvement include Farmer's Markets, Vegetable Farming, and Retail.

The COVID-19 pandemic had a mixed impact on business operations. Nearly 28% of respondents reported that their businesses faced moderate negative effects caused by the pandemic. On the other hand, some respondents experienced little or no impact on business operations. In general, more businesses experienced a negative effect rather than a positive effect of the pandemic.

Finally, the survey revealed that most members who took action to keep their businesses running during the pandemic changed how they served customers and/or increased their social media presence.

The most represented Indiana Grown activities and events pursued by respondents involve reading Indiana Grown email communications, displaying the logo on signage and/or products, and being listed on an Indiana Grown map, trail, or guide.

The demographic profile of the respondents shows that most of the respondents are more than 60 years old. In addition, males predominate among respondents answering a gender question, and most of the respondents recognize themselves as white. Also, most respondents have between 6 and 15 years of business experience and at least some post-secondary or graduate/professional training. Lastly, according to the zip codes provided by the respondents, Marion County, Indiana, represented the county with the highest number of respondents.

The respondents with most activities related to Indiana Grown include Vegetable and Melon Farming and Farmers Markets, with 47 members each. Nevertheless, there are other businesses like Sugar and Confectionery Product Manufacturing, Animal Slaughtering and Processing, Animal Food Manufacturing, Agricultural Products and Food Packaging, or Tourism and Farmers Organizations, with fewer respondents but all activities related to Indiana Grown.

Most Indiana Grown members joined the program in 2018, particularly in the Proteins and Livestock and Horticulture, Grains, and Oil operations. Likewise, 2020 was the year with the second-highest number of people enrolled in Indiana Grown. In this case, the categories with more new members were Horticulture, Grains and Oil, Proteins and Livestock, and Wholesale and Retail Sale.

Appendix – Indiana Grown member's activities related to Indiana Grown

	Horticulture, Grains, Oil	Natural Sugars	Proteins and Livestock	Bakeries and other food manufacturing	Beverages	Non-edible product manufacturing	Wholesale and Retail Sale - Partner	Other Partner	Food Service and Restaurant
Oilseed Frm	X								
Vegetable Frm	X								
Fruit Frm	X								
Greenhouse Prd	X								
Other Frm	X								
Cattle Ranching Frm			X						
Hog/Pig Frm			X						
Poultry Prd			X						
Sheep Frm			X						
Bee Prd			X						
Other Animal Prd			X						
Animal Food Mn			X						
Grain Prc	X								
Oilseed Prc	X								
Sugar Mn		X							
Fruit Mn	X								
Dairy Product Man			X						
Animal Slaughtering Prd			X						
Agricultural Prd			X						
Bakeries Mn				X					
Other Food Mn				X					
Beverage Mn					X				
Non-edible product Mn						X			
Food and Grocery Dst							X		
Retail							X		
Farmers Market							X		
Education								X	
Tourism								X	
Food Service									X
Other Partner								X	

Note: Frm = Farming, Mn = Manufacturing, Prd = Production, Prc = Processing, Dst = Distribution

Appendix 4. Economic Impact Analysis – Key Terms & IMPLAN Software

Key Terms

Economic Impact: The net changes in new economic activity associated with an industry, event, or policy in an existing regional economy. Key term is “new”.¹

Economic Contribution: The gross change in economic activity associated with an industry, event, or policy in an existing regional economy.²

Economic Activity: Dollars spent within region that are attributable to a given industry, event or policy.³

Direct Effects: Refers to the increase in final demand or employment in the local economy (county) specifically attributed to the Indiana Grown-related activities.

Employee Compensation: The total cost of labor to an employer. It includes wages and salaries as well as benefits and employer contributions to government social insurance. In this study, compensation includes both employee compensation and proprietor’s income. However, these are typically reported separately.

Indirect Effects: A measure of the change in dollars or employment caused when the Indiana Grown-related activities increase their purchases of goods and services from suppliers and, in turn, those suppliers purchase more inputs and so on throughout the economy.

Induced Effects: The result from the household spending of the members, Indiana Grown employers, and supply chain employees —whether in dollars or employment. Induced spending will react to changes in output along the economic supply chain. Those output changes also result in changes in household income and spending of suppliers’ employees. Induced effects represent the change in overall economic output and employment resulting from such household spending changes.

Multiplier: The multiplier is the extent of the economic response in a particular geographic area associated with a change in the direct effects. For example, multiply every dollar of the member’s expenditures by 1.97 to find an estimate of the total contribution of this activity to the state economy. Another way to look at it is that every dollar of output supports \$0.97 in additional economic activity in the state.

Tax Effects: The IMPLAN model tracks the federal, state and local government tax collection that would be associated with the direct and ripple effects’ economic activity. For example, household spending at retailers generates state sales tax. In addition, those retailers also pay property taxes to local governments.

Total Effects: The sum of the direct, indirect and induced effects, otherwise known as the size of the economic contribution to the economy. Term used interchangeably with ripple effects or economic footprint.

¹ Watson, P., Wilson, J., Thilmany, D. and Winter, S. 2007. “Determining Economic Contributions and Impacts: What is the difference and why do we care?” *Pedagogy in Regional Studies*, JRAP 37(2): 140-146.

² *ibid*

³ *ibid*

About the IMPLAN Software

IMPLAN is built on a mathematical input-output (I-O) model that expresses relationships between sectors of the economy in a chosen geographic location. Using a traditional input-output analysis, IMPLAN can measure the economic effects of an event, such as construction of a new plant or expanded sales at a business, or the economic contribution of an existing entity such as an industry, university or business. The input-output model defines the flow of dollars through the economy contingent on the assumption of fixed relationships between members and their suppliers. Dollars spent outside of the defined economy are omitted, which would include imported items, purchased goods originating from the defined economy or commuting employees who conduct household spending elsewhere.

The concept of input-output modeling is the inter-industry relationships within the defined geographic area will estimate an economy's response to economic changes. Thus, a demand increase for a certain product or service causes a chain reaction of results, captured via the multiplier effect. Impacted parties would include the member of the product, its employees, suppliers, the supplier's employees and beyond – showcasing the total effect of change is greater than the original demand. The multiplier, the ratio of total effect to direct effect, helps quantify in simple terms the estimated effect resulting from the change in original demand. Each industry has a unique output multiplier due to different inter-industry relationships with firms within and outside the defined economy.

The multiplier is a great tool, but often does not answer all the desired questions. Most want answers in regards to quantity of jobs impacted, effects on the economy due to the change (increase or decrease) as well as the anticipated compensation per job resulting from the impact on jobs. The IMPLAN software allows the user to construct models measuring the flow of dollars from purchasers to members within the defined economy. Data within the models will set up the precise equations which answers questions about the impact of a new company, a plant closing or greater product demand.

Local, regional and national production, employment and trade data sources are used by IMPLAN to construct its input-output model. Examples of such data sources include U.S. Census Bureau's annual *County Business Patterns* report and the U.S. Bureau of Labor Statistics' annual *Covered Employment and Wages* report. Despite gathering large quantities of data from government sources, the company behind IMPLAN also estimates unavailable data, such as county-level production data or suppressed data due to confidentiality of easily identifiable individual companies.

Appendix 5. An Additional Perspective on The Growth Potential of Indiana Grown

Our impact analysis offers an opportunity to consider the growth potential of Indiana Grown using multipliers and estimates derived from primary and secondary data. Here we examine the footprint of sixty-six sectors that are closely aligned with Indiana Grown membership. This provides a means of thinking about the growth potential of Indiana Grown from a different perspective – demand, sales, jobs, and membership.

For the purposes of the overall study, Indiana Grown member businesses were divided into categories based on their NAICS codes (see Table 1). For this perspective of examining the growth potential of Indiana Grown, the Indiana Grown member NAICS categories were divided into those that were deemed key sources of members (Indiana Grown is highly relevant to members and non-members; in Green) and categories where the vast majority of businesses, institutions and organizations were unlikely to join Indiana Grown (ie. national corporations and chains, education sector, organizations that are not directly related to agriculture or food; in Yellow (some sub-sectors included) or Red (no sub-sectors included)). For the latter category, these are sectors that are disproportionately large and membership in Indiana Grown represents an extremely small niche within a much larger whole. While the opportunities for membership growth and sector support should be pursued by Indiana Grown, including the sectors in the data significantly skews the analysis. On the other hand, the sectors used in the following analysis represent opportunities for Indiana Grown to grow (demand, sales, jobs, membership) within each of the sectors and Economic Growth Regions (see Figure 1). Here, growth across the sixty-six “Indiana Grown” sectors can be considered in terms of: 1. the number of Indiana Growth members (or share) within an Economic Growth Region, the demand for “Indiana Grown” sector goods and services (regionally, statewide and outside of the region/state), the amount of sales revenue and the total number of jobs in this aggregate “Indiana Grown” sector.

Figure 1: Indiana Economic Growth Regions



Table 1: Indiana Grown Member Categories by NAICS Code

Categories	Category Description	NAICS
1 = Horticulture, Grains, Oil	Oilseed and Grain Farming	1111
	Vegetable and Melon Farming	1112
	Fruit and Tree Nut Farming	1113
	Greenhouse, Nursery, and Floriculture Production	1114
	Other Crop Farming	1119
	Grain milling and/or Processing	3112
	Oilseed Processing	3112
	Fruit and Vegetable Preserving and Specialty Food Manufacturing	3114
2 = Natural Sugars	Sugar and Confectionery Product Manufacturing	3113
3 = Proteins and Livestock	Cattle Ranching and Farming	1121
	Hog and Pig Farming	1122
	Poultry and Egg Production	1123
	Sheep and Goat Farming	1124
	Bee Production	1129
	Other Animal Production	1129
	Animal Food Manufacturing	3111
	Dairy Product Manufacturing	3115
	Animal Slaughtering and Processing	3116
	Seafood Product Preparation and Packaging	3117
4 = Bakeries and other food manufacturing	Bakeries Manufacturing	3118
	Other Food Manufacturing	3119
5 =<Beverages>	Beverage Manufacturing (Water and Soft Drinks, Wineries, Breweries, Distilleries)	3121
6 = Non-edible product manufacturing	Non-edible product manufacturing (e.g., soap body care, CBD oils, fibers, candles, brooms, etc.)	3254, 3256
7 = Wholesale and Retail Sale - Partner	Food and Grocery Distribution	4244
	Retail	4451
	Food Markets	4452
8 = Other Partner	Travel Agencies and Tour Operators, Convention and Visitor Bureaus	5615
	Education	6111
	Tourism	5615
	Business and Professional Organizations	8139
9 = Food Service and Restaurants	Food Service Contractors, Caterers, and Mobile Food Services	7223
	Drinking Places	7224
	Restaurants, Buffets, Cafeterias, Snack Bars, etc.	7225

Table 2: Indiana Grown Member NAICS Codes Included (Green) and Excluded from the Analysis

NAICS	Description
111000	Crop Production
112000	Animal Production
311111	Dog and Cat Food Manufacturing
311119	Other Animal Food Manufacturing
311211	Flour Milling
311212	Rice Milling
311213	Malt Manufacturing
311221	Wet Corn Milling
311224	Soybean and Other Oilseed Processing
311225	Fats and Oils Refining and Blending
311313	Beet Sugar Manufacturing
311314	Cane Sugar Manufacturing
311340	Nonchocolate Confectionery Manufacturing
311351	Chocolate and Confectionery Manufacturing from Cacao Beans
311352	Confectionery Manufacturing from Purchased Chocolate
311411	Frozen Fruit, Juice, and Vegetable Manufacturing
311412	Frozen Specialty Food Manufacturing
311421	Fruit and Vegetable Canning
311422	Specialty Canning
311423	Dried and Dehydrated Food Manufacturing
311511	Fluid Milk Manufacturing
311512	Creamery Butter Manufacturing
311513	Cheese Manufacturing
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing
311520	Ice Cream and Frozen Dessert Manufacturing
311611	Animal (except Poultry) Slaughtering
311612	Meat Processed from Carcasses
311613	Rendering and Meat Byproduct Processing
311615	Poultry Processing
311710	Seafood Product Preparation and Packaging
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing
311830	Tortilla Manufacturing
311911	Roasted Nuts and Peanut Butter Manufacturing
311919	Other Snack Food Manufacturing
311920	Coffee and Tea Manufacturing
311930	Flavoring Syrup and Concentrate Manufacturing
311942	Spice and Extract Manufacturing
311991	Perishable Prepared Food Manufacturing
311999	All Other Miscellaneous Food Manufacturing
312111	Soft Drink Manufacturing
312112	Bottled Water Manufacturing
312113	Ice Manufacturing
312120	Breweries
312130	Wineries
312140	Distilleries

325411	Medicinal and Botanical Manufacturing
325620	Toilet Preparation Manufacturing
424410	General Line Grocery Merchant Wholesalers
424420	Packaged Frozen Food Merchant Wholesalers
424430	Dairy Product (except Dried or Canned) Merchant Wholesalers
424440	Poultry and Poultry Product Merchant Wholesalers
424450	Confectionery Merchant Wholesalers
424460	Fish and Seafood Merchant Wholesalers
424470	Meat and Meat Product Merchant Wholesalers
424480	Fresh Fruit and Vegetable Merchant Wholesalers
424490	Other Grocery and Related Products Merchant Wholesalers
445110	Supermarkets and Other Grocery (except Convenience) Stores
445120	Convenience Stores
445210	Meat Markets
445220	Fish and Seafood Markets
445230	Fruit and Vegetable Markets
445291	Baked Goods Stores
445292	Confectionery and Nut Stores
445299	All Other Specialty Food Stores
445310	Beer, Wine, and Liquor Stores
561510	Travel Agencies
561520	Tour Operators
561591	Convention and Visitors Bureaus
611110	Elementary and Secondary Schools
722310	Food Service Contractors
722320	Caterers
722330	Mobile Food Services
722410	Drinking Places (Alcoholic Beverages)
722511	Full-Service Restaurants
722513	Limited-Service Restaurants
722514	Cafeterias, Grill Buffets, and Buffets
722515	Snack and Nonalcoholic Beverage Bars
813910	Business Associations
813920	Professional Organizations

This report section begins with an aggregate view of all of the Indiana Grown sectors (based on NAICS) by Indiana Economic Growth Region (see Table 3).

Table 3: Comparison of Indiana Grown Membership and ‘Indiana Grown’ Sectors by Indiana Economic Growth Regions

Economic Growth Region	Number of Indiana Grown Members (2021)	Payrolled Business Locations in Indiana Grown Sectors (2021)	IG Member Share	Arbitrary Target of 34.4%	Additional Members
Indiana EGR 1	120	546	22.0%	188	68
Indiana EGR 2	55	443	12.4%	152	97
Indiana EGR 3	180	598	30.1%	206	26
Indiana EGR 4	181	521	34.7%		
Indiana EGR 5	340	1,086	31.3%	373	33
Indiana EGR 6	136	265	51.3%		
Indiana EGR 7	62	160	38.8%		
Indiana EGR 8	145	234	62.0%		
Indiana EGR 9	128	229	55.9%		
Indiana EGR 10	92	158	58.2%		
Indiana EGR11	78	433	18.0%	149	71
Indiana EGR 12	266	513	51.9%		
TOTAL	1783	5186	34.4%		295

An assumption is being made that the business establishments (“Payrolled Business Locations in Indiana Grown Sectors”) represent the universe of businesses for recruitment by Indiana Grown. Five Economic Growth Regions (EGRs, in yellow in Table 3) have a lower percentage of business establishments than the state average (34.4%). Indiana Grown could choose to target these EGRs for additional recruitment efforts. If they met a goal of meeting the current state average, that would result in nearly 300 additional members. Data has been provided separately that provide data by each of the sixty-six sectors by six-digit NAICS code.

Table 4: Jobs in “Indiana Grown” Sectors by Economic Growth Region between 2015-2021

NAICS	2021 Payrolled Business Locations	2015 Jobs	2021 Jobs	2015 - 2021 Change	2015 - 2021 % Change
EGR1	546	14,057	14,351	295	2%
EGR2	443	12,450	11,333	(1,117)	(9%)
EGR3	598	15,774	14,559	(1,215)	(8%)
EGR4	521	16,424	15,938	(486)	(3%)
EGR5	1,086	35,416	34,969	(447)	(1%)
EGR6	265	5,376	6,028	652	12%
EGR7	160	3,286	3,562	277	8%
EGR8	234	5,673	5,981	308	5%
EGR9	229	5,602	5,419	(183)	(3%)
EGR10	158	4,893	4,668	(226)	(5%)
EGR11	433	10,697	10,676	(21)	(0%)
EGR12	513	19,330	19,411	81	0%
Indiana	4,994	131,644	129,599	(2,045)	(2%)

In terms of jobs, the Indiana Grown sectors – like many other sectors during the COVID-19 pandemic – lost jobs, resulting a 2% decline (2,045 jobs) in Indiana (see Table 4). Five EGRs (EGR1, EGR6, EGR7, EGR8 and EGR12) gained employment in aggregate across the sixty-six sectors between 2015-2021. Overall, since 2001, the sector has been in moderate decline in EGR1, EGR2, EGR3, EGR6, EGR9 and EGR10 resulting in an overall decline statewide (see Appendix). The remainder of the EGRs are expected to grow slightly through 2032, except for EGR12.

Job growth can be examined using shift-share analysis where national, industry and regional (“competitive effect”) factors are used to derive an expected change in the number of jobs added or subtracted from the economy during a specific time period. Here, the sector was expected to lose jobs due to industry-level effects in EGR5, EGR7 and EGR12. However, the national growth effect was expected to outpace (or keep pace with) most industry-level effects resulting job expansion across all of the EGRs in Indiana. This was not the case. As outlined in Table 4, job losses were experienced in all but five EGRs. In the case of EGR6 and EGR7, there were unique regional/state factors that led to overall job gains. In the case of EGR1 and EGR12, the negative regional effects were not large enough to offset the industry and national effects, resulting in an increase jobs. In the over seven cases, and in the state overall, it was regional/state level effects that dominated. This suggests that Indiana Grown can benefit members through support that promotes business retention and through partnerships with local, regional and state-level agencies and organizations that effectively contribute to stronger regional economies. In addition, it should not be forgotten that the impact analysis suggests that investment in Indiana Grown results in job growth.

Table 5: Shift Share Analysis for “Indiana Grown” Sectors between 2015-2021

Region	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
EGR1	56	481	538	(243)
EGR2	54	426	481	(1,598)
EGR3	127	540	667	(1,882)
EGR4	566	562	1,128	(1,614)
EGR5	(361)	1,212	851	(1,298)
EGR6	50	184	235	418
EGR7	(31)	113	81	195
EGR8	190	194	384	(76)
EGR9	216	192	408	(591)
EGR10	84	168	252	(477)
EGR11	114	366	480	(501)
EGR12	(92)	662	569	(488)
Indiana	1,002	4,504	5,507	(7,551)

Beyond membership and jobs, another area of potential growth for Indiana Grown is in terms of demand for Indiana Grown goods and services and how that demand is met. Presumably, given consumer interest in purchasing goods that are made ‘locally’ (however defined) and Indiana Grown’s role in marketing these products, “Demand met in region” is a good indicator of the current baseline of demand for Indiana Grown products (see Table 6). Total demand varies across EGR, ranging from \$999.4M in EGR7 to \$9.75B in EGR5. This demand is not additive across EGRs because it is measuring the demand for goods and services met within the EGR and outside of the EGR. In the case of the EGRs, this demand might still be met within the state of Indiana, just not in the region. At the state level, demand is being met within the state or outside of the state. Both cases, Indiana Grown can play a key role in helping communities meet

their needs through import substitution (or purchasing within the region/state). With two-thirds of demand for “Indiana Grown” sector goods and services being met outside of the state, there is ample opportunity for import substitution that could result in millions of dollars of impact given the current levels of spending and the proportion that is spent outside of the state. This is true at the EGR level as well. It makes sense that multicounty regions can’t supply everything their population demands, but more should be done to connect Indiana Grown members with their local/regional consumers.

Table 6: Demand for “Indiana Grown” Sector Goods and Services in 2021 by Source

Region	Demand met In-Region	% Demand met In-Region	Demand met by Imports	% Demand met by Imports	Total Demand
EGR1	\$1,007,104,509	25%	\$2,947,716,514	75%	\$3,954,821,023
EGR2	\$819,356,164	28%	\$2,112,096,086	72%	\$2,931,452,250
EGR3	\$1,054,013,669	25%	\$3,206,793,861	75%	\$4,260,807,530
EGR4	\$1,326,743,784	28%	\$3,429,609,427	72%	\$4,756,353,212
EGR5	\$2,708,716,881	28%	\$7,043,655,581	72%	\$9,752,372,461
EGR6	\$318,887,537	21%	\$1,212,888,518	79%	\$1,531,776,055
EGR7	\$181,511,312	18%	\$817,894,592	82%	\$999,405,904
EGR8	\$303,893,272	22%	\$1,106,305,460	78%	\$1,410,198,733
EGR9	\$256,130,693	16%	\$1,352,955,429	84%	\$1,609,086,123
EGR10	\$197,446,045	15%	\$1,135,554,775	85%	\$1,333,000,820
EGR11	\$667,054,576	23%	\$2,190,296,724	77%	\$2,857,351,300
EGR12	\$1,487,064,586	31%	\$3,270,895,268	69%	\$4,757,959,855
Indiana	\$11,577,989,257	33%	\$23,818,636,153	67%	\$35,396,625,410

Lastly, we can consider the growth potential of sales amongst Indiana Grown sector businesses (see Table 7). Like demand, sales within the region are a natural market for Indiana Grown labeled goods and services and there is ample room for growth with all EGRs achieving less than a 40% regional share for their output. There is a caveat. While import substitution is an economic development strategy for demand, an export-led strategy is a well-known option for sales, resulting in “new” dollars circulating in the local economy.

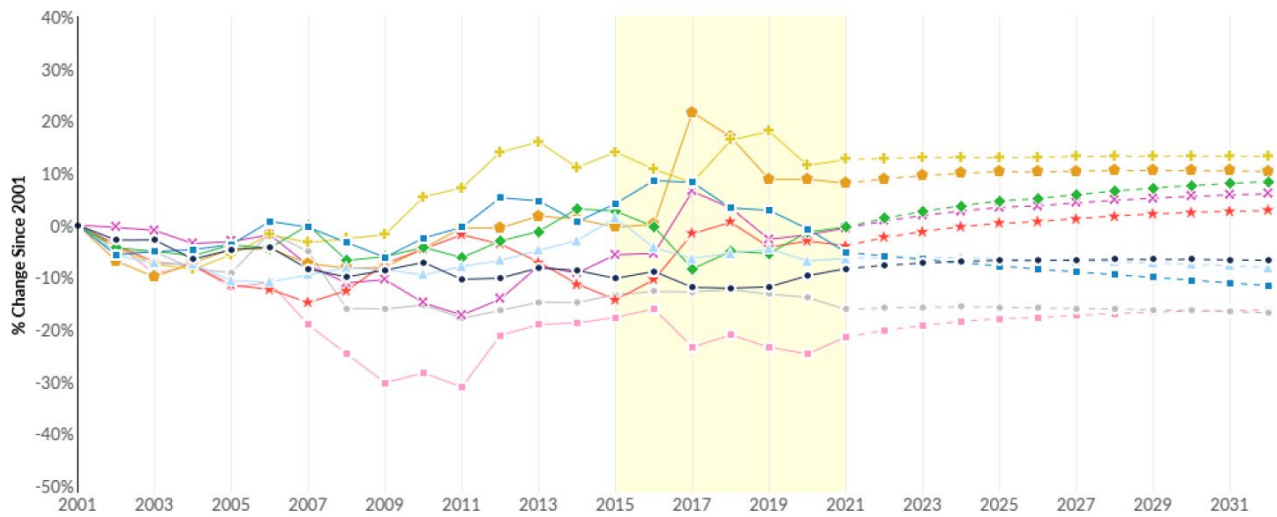
An export-led strategy will require Indiana Grown to effectively market across EGRs and outside of the state. Indiana Grown should also address constraints to exporting by effectively working with the public and private sectors in addition to providing Indiana Grown businesses with high-quality and timely market information that will assist members with decision-making and increase their potential for expansion into new markets.

Table 7: Sales of “Indiana Grown” Sector Goods and Services in 2021 by Destination

Region	In-Region Sales	% In-Region Sales	Exported Sales	% Exported Sales	Total Sales
EGR1	\$1,063,958,608	26%	\$2,996,949,833	74%	\$4,060,908,442
EGR2	\$860,118,056	26%	\$2,492,030,006	74%	\$3,352,148,062
EGR3	\$1,124,213,530	19%	\$4,920,999,321	81%	\$6,045,212,851
EGR4	\$1,386,767,040	17%	\$6,612,341,210	83%	\$7,999,108,250
EGR5	\$2,869,600,224	35%	\$5,372,114,741	65%	\$8,241,714,965
EGR6	\$352,328,800	15%	\$1,932,388,493	85%	\$2,284,717,293
EGR7	\$197,331,829	16%	\$1,068,788,677	84%	\$1,266,120,506
EGR8	\$335,083,900	18%	\$1,553,164,984	82%	\$1,888,248,884
EGR9	\$286,620,236	13%	\$1,853,910,274	87%	\$2,140,530,510
EGR10	\$216,749,428	13%	\$1,504,404,761	87%	\$1,721,154,189
EGR11	\$710,762,449	17%	\$3,565,496,714	83%	\$4,276,259,163
EGR12	\$1,562,959,826	39%	\$2,395,561,572	61%	\$3,958,521,398
Indiana	\$12,184,116,397	28%	\$31,092,006,718	72%	\$43,276,123,115

APPENDIX

Industry Change Summary



Region	2015 Jobs	2021 Jobs	Change	% Change	2021 Average Earnings	2021 Payrolled Business Locations
● IN EGR 1	14,057	14,351	294	2%	\$48,184	546
■ IN EGR 2	12,450	11,333	-1,117	-9%	\$45,207	443
▲ IN EGR 3	15,774	14,559	-1,215	-8%	\$49,155	598
◆ IN EGR 4	16,424	15,938	-486	-3%	\$54,114	521
+ IN EGR 5	35,416	34,969	-447	-1%	\$51,745	1,086
★ IN EGR 6	5,376	6,028	652	12%	\$49,382	265
⬢ IN EGR 7	3,286	3,562	276	8%	\$44,203	160
✕ IN EGR 8	5,673	5,981	308	5%	\$43,340	234
● IN EGR 9	5,602	5,419	-183	-3%	\$49,481	229
■ IN EGR 10	4,893	4,668	-225	-5%	\$47,898	158