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**ECONOMIC IMPACT AND CONTRIBUTION OF
NEW MEXICO STATE UNIVERSITY, 2022**

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Economic Impact and Contribution of New Mexico State University, 2022

October 2023

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Executive Summary

The Center for Border Economic Development and Arrowhead Center at New Mexico State University (NMSU) have prepared a study of the economic impact and contribution of NMSU for fiscal year 2022, from July 1st, 2021 to June 30th, 2022. Two approaches were used in this study: (1) Economic Impact Analysis, and (2) Industry Contribution Analysis.

Economic Impact Analysis seeks to measure the net impact on the local economy from new projects or activities. Since NMSU is not “new,” the impacts presented in this study should be interpreted as losses to the state economy if NMSU did not exist. To make this calculation, in-state funding, such as state appropriations and tuition paid by New Mexico residents, is excluded, as those dollars would likely still be spent in New Mexico if not spent on NMSU.

Industry Contribution Analysis is used to estimate the value of a sector or group of sectors in a region at their current levels of production. If a university or college comprises the entirety of the higher education sector in the region, industry contribution analysis is suitable.¹ This is the case in each county where NMSU campuses are located. The Industry Contribution Analysis should be interpreted as the amount contributed to each county based on activities of the NMSU System. These approaches are detailed in the Methodology section of this study.

The primary impacts of NMSU analyzed in this report are: (1) university expenditures, (2) student expenditures, (3) alumni human capital, and (4) innovation and entrepreneurship activities. Additional impacts of NMSU exist, such as economic value created by new Chile varieties developed by NMSU, increased social mobility, and spending from out-of-state visitors to the university; however, these were not included in our calculations due to the challenge of quantifying them accurately. Thus, it is appropriate to consider our estimate of the impact of NMSU to be conservative.

Variations exist regarding methodologies for conducting economic impact studies of colleges and universities, and therefore, a direct comparison of impact studies across colleges and universities is not recommended. Furthermore, the impact of each university can vary significantly based on the range of activities associated with the university, such as athletics, hospitals, and economic development programs, as well as the general approach used for the study, whether Economic Impact or Industry Contribution Analysis.

¹ (Khalaf et al., 2022)

The economic impacts of NMSU were estimated using IMPLAN economic modeling software² and are based on economic activity occurring at the county level throughout the State of New Mexico. Spillover effects between counties in New Mexico were measured using Multi-Regional Input-Output (MRIO). Our economic impact and contribution analysis for NMSU in FY 2022 yielded the following results:

- In FY 2022, NMSU had an economic impact in New Mexico of 3,671 direct jobs, 10,634 total jobs, \$1.7 billion in economic output, \$962 million in value-added production, and \$587 million in labor income.
- In FY 2022, NMSU had an economic contribution in New Mexico of 11,463 direct jobs, 19,634 total jobs, \$2.6 billion in economic output, \$1.6 billion in value-added production, and \$905 million in labor income.
- 4,777 degrees awarded by NMSU in FY 2022, worth a total estimated value of \$1.2 billion in discounted future earnings.

² (IMPLAN, 2023)

Background

This report provides an estimate of the impact and contribution of the NMSU System to the economy of New Mexico for FY 2022. NMSU is a research-intensive land-grant and space-grant institution of higher learning, offering a comprehensive program of education, research, outreach, and service. Established in 1888, NMSU is the oldest public institution of higher education in the state of New Mexico. The mission of the NMSU System is to serve the state's diverse needs through comprehensive programs of education, research, extension and outreach, and public service. NMSU fosters learning, inquiry, diversity and inclusion, social mobility, and service to the broader community.³

NMSU is designated by the U.S. Department of Education as a Hispanic serving and minority serving institution (HSI/MSI) under Title III and Title V programs. NMSU is classified by the Carnegie Foundation for the Advancement of Teaching as an R2: doctoral university with high research activity. The Carnegie Foundation also ranks NMSU as a university with high community engagement. The university is ranked in the top quarter of all institutions in terms of federal research and development expenditures. Additionally, a 2017 Brookings Institution study ranked NMSU #2 in the nation for social mobility.⁴



³ (New Mexico State University - Board of Regents, 2023)

⁴ (Reber et al., 2017)

NMSU student enrollment and employment is distributed among four units: NMSU-Las Cruces (Main), Doña Ana Community College (DACC), NMSU-Alamogordo, and NMSU-Grants (see Table 1). The NMSU-Las Cruces Campus offers a comprehensive program of undergraduate and graduate programs, has the most students enrolled, and employs the most faculty and staff. DACC, NMSU-Alamogordo, and NMSU-Grants are community colleges and primarily offer courses that lead to certifications or to associate degrees. For those enrolled in one of the community colleges who wish to pursue a four-year degree, the Aggie Pathway program offers a seamless course of study toward a baccalaureate.

Table 1: Fall 2022 Student Enrollment, NMSU System⁵

Campus	Students⁶	Faculty⁷	Staff⁸
Alamogordo	1,036	74	66
Doña Ana	6,666	414	252
Grants	829	52	24
Las Cruces	14,268	1,041	2,317
Total	22,799	1,581	2,656

NMSU has operations in every county in the state (see Figure 1). NMSU operates satellite learning centers in Albuquerque, Sunland Park, and Gadsden. Extension offices are located in all 33 New Mexico counties. Other facilities operated around the state include 13 science and research centers, the Apache Point Observatory, the Carlsbad Environmental Monitoring and Research Center, and the Santa Fe Ranch Demonstration Site, among others.

Economic impact analysis seeks to measure the net impact on a local economy that arises from a new project or activity. In the case of the current study, we sought to measure the impact and contribution of the NMSU system on the New Mexico economy.

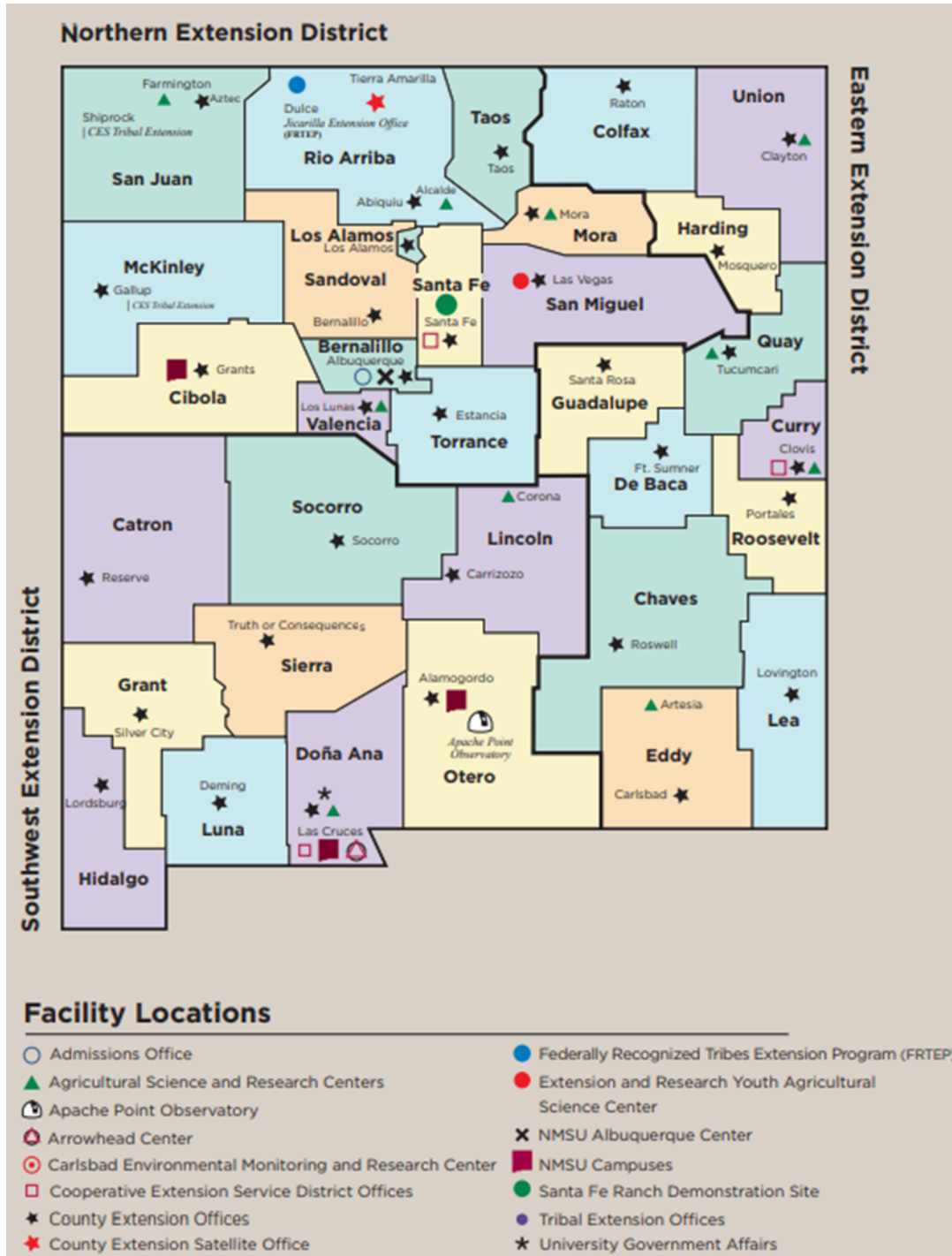
⁵ (Factbooks | New Mexico State University - BE BOLD. Shape the Future., 2023)

⁶ Student enrollment as of Fall 2022 Census, September 2, 2022. Some students may be enrolled on more than one campus.

⁷ Faculty counts as of September 15, 2022.

⁸ Staff counts as of September 15, 2022.

Figure 1: Statewide Map of NMSU Operations



Methodology

The purpose of this study was to estimate the economic impact and contribution of the economic activity associated with NMSU. Two approaches were used in this study: (1) Economic Impact Analysis, and (2) Industry Contribution Analysis.

Economic Impact Analysis seeks to measure the net impact on the local economy from new projects or activities. Since NMSU is not “new,” the impacts presented in this study should be interpreted as losses to the state economy if NMSU did not exist. To make this calculation, in-state funding, such as state appropriations and tuition paid by New Mexico residents, is excluded, as those dollars would likely still be spent in New Mexico if not spent at NMSU.

Industry Contribution Analysis is used to estimate the value of a sector or group of sectors in a region at their current levels of production. This is done by constraining the model via eliminating feedback linkages or buybacks to the industry sector analyzed. If a university or college comprises the entirety of the higher education sector in the region, industry contribution analysis is suitable.⁹ This is the case in each county where NMSU campuses are located. The Industry Contribution Analysis should be interpreted as the amount contributed to each county based on activities of the NMSU System.

The primary economic benefits of NMSU analyzed in this report are: (1) university expenditures, (2) student expenditures, (3) alumni human capital, and (4) innovation and entrepreneurship programs. Additional impacts of NMSU exist, such as economic value created by new chile varieties developed by NMSU, increased social mobility, and spending from out-of-state visitors to the university; however, these were not included in our calculations due to the challenge of quantifying them accurately. Thus, it is appropriate to consider our estimate of the impact of NMSU to be conservative.

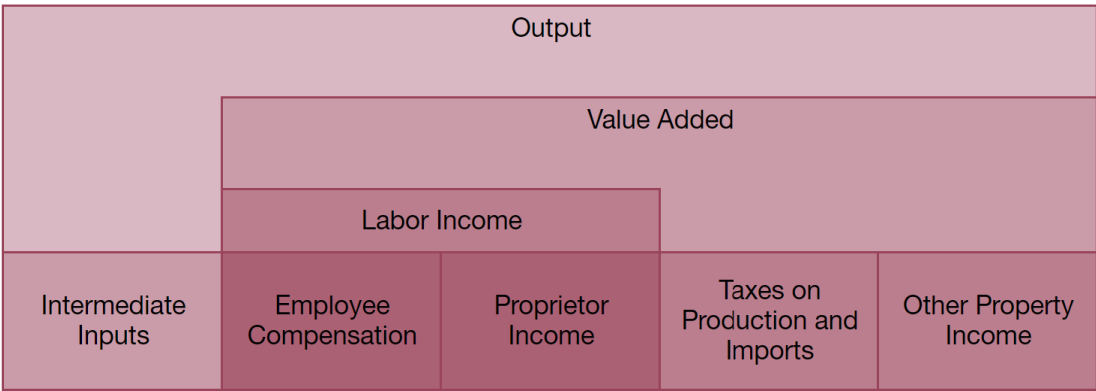
Variations exist regarding methodologies for conducting economic impact studies of colleges and universities, and therefore, a direct comparison of impact studies across colleges and universities is not recommended. Furthermore, the impact of each university can vary significantly based on the range of activities associated with the university, such as athletics, hospitals, and economic development programs, as well as the general approach used for the study, whether Economic Impact or Industry Contribution Analysis. For public universities, Industry Contribution Analysis generally will produce a larger result as it includes state and local funding, along with tuition payments and spending from resident students.

⁹ (Khalaf et al., 2022)

Economic impacts and contributions are composed of three parts: direct effects, indirect effects, and induced effects. Direct effects stem from the initial change in economic activity associated with new spending. For purposes of this study, direct effects included university spending, student spending, alumni human capital, and innovation and entrepreneurship programs, but could include any activities or events that result in a change in employment, labor income, or business revenues. As a result of the direct effects, additional spending occurs in other industries, such as educational software, construction, or utilities. The total of this secondary spending is categorized as the indirect effect. The economic activity from the direct and indirect effects supports employees who then spend their wages in the economy. This spending is referred to as the induced effects. Together, the direct, indirect, and induced effects comprise the total economic impact of the analysis. The main idea behind economic impact analysis is that a new dollar spent in a local area results in more than one dollar in economic activity in the area.

The project’s economic benefits were estimated using IMPLAN economic modeling software.¹⁰ Economic impacts and contributions were measured in terms of changes in output, value-added production, labor income, and employment. Figure 2 shows the subcomponents of output and value-added production, also referred to as the Leontief Production Function. Output is the dollar value of total production generated by an industry and can be thought of as total revenue for a particular industry or industries. Intermediate inputs are goods and services used in production and purchased from other industries. Value-added production is the contribution from economic activity to gross domestic product. The value of intermediate inputs plus gross domestic product add up to total output. Business profits are included under proprietor income and other property income.

Figure 2: Components of Economic Output¹¹



¹⁰ (IMPLAN, 2023)

¹¹ (Lucas, 2023)

The economic impacts and contributions presented in this analysis include the direct, indirect, and induced impacts. All terms are defined in the Glossary at the end of this document. The impacts and contributions are based on project activity occurring in New Mexico counties. Spillover effects between counties in New Mexico are estimated using Multi-Regional Input-Output (MRIO) analysis. Impact figures are presented for New Mexico as a whole. Employment refers to full- and part-time jobs. Dollar impacts are presented in 2023 dollars. Components may not sum to totals due to rounding.

University Expenditures

Table 2 shows the values used to estimate the economic contribution of NMSU expenditures. Table 3 shows the values used to estimate the economic impact of university expenditures, which requires the removal of expenditures funded by in-state sources. These calculations were made for each campus in the NMSU System and statewide activities, such as Agricultural Experiment Stations, Cooperative Extension Services, and the Sunspot Solar Observatory Consortium.¹² These adjustments are consistent with best practices for economic impact and contribution analyses of colleges outlined in Khalaf et al. (2022). NMSU Carlsbad was excluded from this analysis as the school became independent from the NMSU System during the study period. University expenditure figures were gathered from NMSU’s 2022/2021 Financial Statements and Schedules and 2022 Reports of Actuals.¹³

Table 2: Adjustments to University Expenditures for Contribution Calculation, NMSU System, FY 2022

Budget Item	Amount
Total operating expenses	\$594,130,655
Less: Depreciation	\$33,324,157
Total	\$560,806,498

Capital expenditures were calculated separately and shown in Table 4. University expenditures were assigned to IMPLAN Industry *481-Junior colleges, colleges, universities, and professional schools*, and capital expenditures were assigned to *53-Construction of new educational and vocational structures*. Furthermore, university

¹² Statewide activities of NMSU were allocated to counties using a process detailed in “State of New Mexico County-Level Revenue & Expenditure Analysis, 2015-2021”. (Winingham, 2023)

¹³ (New Mexico State University, *Financial Reports*, 2023), (New Mexico State University, *Budget Reports*, 2023)

expenditures were adjusted in IMPLAN using Industry Impact Analysis (Detailed) event type recommended by IMPLAN for analysis of public colleges.¹⁴

Table 3: Adjustments to University Expenditures for Impact Calculation, NMSU System, FY 2022

Budget Item	Amount
Total operating expenses	\$594,130,655
Less: Depreciation	\$33,324,157
Less: State Appropriations	\$227,618,257
Less: State Lottery Scholarship	\$20,051,582
Less: State Grants and Contracts	\$19,890,076
Less: Tuition and Fees paid New Mexico Residents	\$59,504,366
Total	\$233,742,217

Table 4: Capital Expenditures, by Campus, FY 2022

Location	Capital Outlay
NMSU Main Campus	\$35,619,448
NMSU Alamogordo	\$909,815
DACC	\$1,770,734
NMSU Grants	\$597,344
Total	\$38,897,341

Student Expenditures

Table 5 shows the values used as inputs for the economic impact and contribution estimates of student expenditures. For the Economic Impact Analysis, only student expenditures from non-resident students were counted. Non-resident student figures were gathered from available data sources and, when necessary, estimated from tuition revenues.¹⁵ Tuition revenue was counted under university operations, so it is not counted again to avoid double counting. Housing spending was reduced in our analysis to account for students living on campus since revenues from on-campus housing were included in our analysis of university expenditures. Specifically, the estimated student spending

¹⁴ (Clouse, 2021)

¹⁵ (Factbooks | New Mexico State University - BE BOLD. Shape the Future., 2023)

amount for housing was reduced by 22% in our analysis.¹⁶ Spending for meals and personal expenses were spread over several IMPLAN industry categories.

Table 5: Average Annual Student Expenditures¹⁷

Activity	Spending per student	IMPLAN Code	IMPLAN Description
Housing	\$6,506	448	Tenant-occupied housing
Transportation	\$873	408	Retail - Gasoline stores
Meals	\$1,840	509	Full-service restaurants
Meals/Personal Expenses	\$2,824	406	Retail - Food and beverage stores
Meals	\$1,840	510	Limited-service restaurants
Personal Expenses	\$984	411	Retail - General merchandise stores
Personal Expenses	\$984	412	Retail - Miscellaneous store retailers
Total	\$15,851		

Alumni Human Capital

The value of alumni human capital includes two components: (1) the value of new degrees awarded during FY 2022, and (2) the economic activity of alumni currently working in New Mexico, regardless of year of graduation. The economic value of degrees awarded is calculated by taking the net present value (NPV) of earnings over a 30-year career, assuming median earnings for the given degree. From this value, the NPV of the earnings of a degree one education level lower is subtracted. Thus, an associate degree is compared to a high school degree, a bachelor’s degree to an associate degree, a master’s degree to a bachelor’s degree, and a professional or Ph.D. degree to a master’s degree. For example, the economic value of a bachelor’s degree is calculated as:

$$\text{Economic Value of Baccalaureate Degree} = \text{NPV of earnings by baccalaureate degree assuming a 30-year career} - \text{NPV of earnings of an associate degree assuming a 30-year career}$$

The second component, which is the economic activity of alumni working in New Mexico, is calculated by taking the income differential provided by the degree and then multiplying this figure by the number of degree holders. We then used the resulting value to estimate

¹⁶ 78% of students at NMSU live off-campus. (New Mexico State University Student Life - US News Best Colleges, 2023)

¹⁷ (New Mexico State University, Cost of Attendance, 2023)

the induced impacts of this income. Income was assigned to one of four household types in IMPLAN, as shown in Table 6.

Table 6: IMPLAN Household Categories by Degree

Degree	IMPLAN Code	Household Income Category
Associate	10004	Households \$40-50K
Bachelor's	10005	Households \$50-70K
Master's	10006	Households \$70-100K
Doctorate	10007	Households \$100-150K

Innovation and Entrepreneurship

NMSU's innovation and entrepreneurship outreach programs are offered by Arrowhead Center (Arrowhead). Arrowhead is a leader in the region for economic development and offers programs to support innovation and entrepreneurship.

Impacts and contributions were measured from Arrowhead's innovation and entrepreneurship programs, Arrowhead Park and investment activities. Arrowhead's innovation and entrepreneurship programs work directly with entrepreneurs and businesses to accelerate their development. The innovation and entrepreneurship programs included in this analysis are: American Indian Business Enterprise program (AIBE), New Mexico Clean Energy Resilience and Growth cluster (CERG), NM FAST, Foster Innovation Exchange (FIX), New Mexico Small Business Assistance (NMSBA), Sprints, Studio G, and Arrowhead Ventures.

Additionally, Arrowhead oversees the management of Arrowhead Park, a 175-acre research park located in the southern part of NMSU's main campus, with availability for mixed-use development. Arrowhead Innovation Fund is a venture capital fund focused on seed and early-stage investments to commercialize promising technologies developed and/or licensed by New Mexico start-up companies. Arrowhead's economic impacts can be delineated by its innovation and entrepreneurship programs and the additional activities involving Arrowhead Park and Arrowhead Innovation Fund.

Table 7 shows the jobs created or supported by businesses in each program category. These figures were used as inputs to calculate the economic impacts and contributions of NMSU's Innovation and Entrepreneurship programs. Arrowhead also produces quantifiable economic impacts through funding raised from sources outside of New Mexico. This

funding, however, is included in University Expenditures and is not detailed specifically for Arrowhead in this analysis.

Table 7 - Jobs by Program Category, Arrowhead, FY 2022

Program Category	Jobs Created or Supported
Arrowhead Innovation and Entrepreneurship Programs	1,110
Arrowhead Park and investment activities	493
Total	1,603

Analysis of Impacts and Contributions

NMSU economic impacts and contributions were estimated for university expenditures, student expenditures, alumni human capital benefits, and innovation and entrepreneurship activities.

University Expenditures

University expenditure figures were gathered from NMSU's 2022/2021 Financial Statements and Schedules and 2022 Reports of Actuals.¹⁸ University Expenditures were disaggregated to place spending in the appropriate county based on the campus or statewide activity, such as, Agricultural Experiment Stations, Cooperative Extension Services, and the Sunspot Solar Observatory Consortium.¹⁹

The economic impact of university expenditures is shown in Table 8. The economic impact figures for university expenditures are based on operational expenditures of \$233,742,217 (Table 3) and capital expenditures of \$38,897,341 (Table 4), both of which exclude expenditures funded from state and local sources.

Table 8: Economic Impact, University Expenditures, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	2,230	\$180,993,111	\$184,326,713	\$272,639,560
Indirect	308	\$12,845,058	\$24,658,940	\$57,261,505
Induced	559	\$25,171,020	\$48,196,829	\$82,259,679
Total	3,097	\$219,009,189	\$257,182,483	\$412,160,744

Table 9 shows the economic contribution of university expenditures. The economic contribution figures for university expenditures are based on operational expenditures of \$560,806,498 and capital expenditures of \$38,897,341 (Tables 2 and 4), both of which include expenditures funded from state and local sources.

¹⁸ (New Mexico State University, Financial Reports, 2023), (New Mexico State University, Budget Reports, 2023)

¹⁹ Statewide activities of NMSU were allocated to counties using a process detailed in "State of New Mexico County-Level Revenue & Expenditure Analysis, 2015-2021". (Winingham, 2023)

Table 9: Economic Contribution, University Expenditures, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	7,101	\$333,996,887	\$450,144,507	\$599,716,839
Indirect	499	\$20,499,109	\$40,214,225	\$95,144,110
Induced	782	\$37,338,798	\$71,528,506	\$122,743,413
Total	8,383	\$391,834,794	\$561,887,238	\$817,604,362

Student Expenditures

Estimates of student expenditures are based on university figures for cost of attendance.²⁰ For the Economic Impact Analysis, only student expenditures from non-resident students were counted. Non-resident student figures were gathered from available data sources and, when necessary, estimated from tuition revenues. Tuition revenue was counted under university operations and is not counted in this section to avoid double counting. Housing spending was reduced in our analysis to account for students living on campus, since revenues from on-campus housing were included in our analysis of university expenditures. Specifically, the student spending amount for housing was reduced by 22%. Spending for meals and personal expenses were spread over several IMPLAN industry categories.

The economic impact of student expenditures is shown in Table 10. The economic impact figures are based on student expenditures of \$61,251,221, which does not include spending by students who are New Mexico residents.

Table 10: Economic Impact, Student Expenditures, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	331	\$10,768,101	\$32,492,926	\$45,845,422
Indirect	41	\$1,762,750	\$2,993,940	\$6,836,877
Induced	38	\$1,717,201	\$3,278,257	\$5,575,381
Total	410	\$14,248,051	\$38,765,123	\$58,257,679

Table 11 shows the economic contribution of student expenditures. The economic contribution figures are based on student expenditures of \$328,581,248, which includes total spending of all students: resident and non-resident.

²⁰ (New Mexico State University, *Cost of Attendance*, 2023)

Table 11: Economic Contribution, Student Expenditures, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	2,759	\$89,005,943	\$222,592,719	\$328,581,248
Indirect	333	\$14,581,143	\$24,294,015	\$54,989,273
Induced	226	\$10,976,821	\$20,971,043	\$35,803,038
Total	3,318	\$114,563,907	\$267,857,777	\$419,373,559

Alumni Human Capital

A college degree has value for a number of reasons. People with more education have better socio-economic outcomes on average: lower unemployment, lower poverty rates, healthier children, and general well-being tends to increase.²¹ Those with more education are generally more productive, which benefits their employers, who are then willing to pay higher incomes. Because of these benefits, parents are more willing to locate in states with better education systems, making it easier for employers to find workers and attract businesses to locate in those states.

Of these benefits of education, the one that is most quantifiable is the benefit of increased earning potential associated with college degrees. NMSU awarded 4,777 degrees and certificates in FY 2022 (see Table 12).²² The values of these degrees are determined by first calculating the NPV of a 30-year career, assuming that the median wage is earned per year. The value of the degree was then determined by netting out the NPV of the earnings of the degree one education level lower. These values are presented in Table 12.

Table 12: 2021-2022 Degrees Awarded, NMSU System²³

Educational Attainment	Number of Degrees Awarded ²⁴	Median Income ²⁵	Net Present Value of 30-Year Career	Value of Degree
High School	NA	\$37,290	\$573,239	
Certificates and Associate ²⁶	1,472	\$44,080	\$677,618	\$104,379
Bachelor	2,443	\$64,911	\$997,841	\$320,224
Graduate or Professional ²⁷	862	\$84,118	\$1,293,100	\$295,259

²¹ (Ma & Pender, 2023), (Krueger et al., 2015), (Schaeffer, 2022) (Lindeboom et al., 2009)

²² (Factbooks | New Mexico State University - BE BOLD. Shape the Future., 2023)

²³ Some students may have received multiple degrees.

²⁴ (Factbooks | New Mexico State University - BE BOLD. Shape the Future., 2023)

²⁵ (Census Bureau, 2023)

²⁶ Median salary is for the category "Some College and Associate".

²⁷ Median salary is for the category "Graduate or Professional".

We can calculate the total value of degrees awarded by multiplying the number of degrees awarded in each educational category by the value of the respective degree and then summing the results of all three categories. The total value of degrees awarded in FY 2022 is estimated to be \$1.2 billion in discounted future earnings. This figure was not included in economic impact or contribution calculations for FY 2022, as this earning potential is currently unrealized. Actual spending of NMSU alumni living in the state was included in our economic impact or contribution calculations because it did occur in FY 2022.

The calculation of the economic impact and contribution of alumni currently living in New Mexico followed the following steps: (1) establish a baseline income assumption of New Mexico residents by educational attainment level, (2) group NMSU alumni living in New Mexico by age and degree type, (3) calculate the earnings differential provided by degree adjusting for labor force participation and unemployment, and (4) use IMPLAN to estimate the economic effects of this additional income provided by the NMSU degree.

Table 13 presents the average earnings of New Mexico residents by age and degree. This is used to estimate average earnings for NMSU Alumni by degree.

Table 13: Earnings (mean) by Educational Attainment and Age Cohort Living in New Mexico²⁸

Age	High school and equivalent	Associate	Bachelor	Master	Doctoral
25 to 29	\$26,536	\$34,872	\$43,535	\$52,097	\$70,887
30 to 34	\$29,681	\$39,687	\$47,125	\$73,556	\$88,694
35 to 39	\$35,900	\$43,854	\$60,140	\$77,711	\$100,433
40 to 44	\$39,112	\$53,810	\$64,801	\$79,938	\$113,807
45 to 49	\$45,140	\$58,028	\$68,436	\$88,472	\$120,658
50 to 54	\$41,280	\$56,987	\$76,543	\$86,279	\$150,137
55 to 59	\$39,735	\$56,435	\$84,090	\$89,062	\$138,389
60 to 64	\$50,192	\$49,404	\$82,851	\$94,782	\$157,804

Table 14 shows the number of alumni currently living in New Mexico by age and degree. There are 66,083 alumni currently living in New Mexico who are between the ages of 25 and 64. Of these, 18,271 have associate degrees, 37,607 have bachelor’s degrees, 9,327 have master’s degrees, and 878 have doctoral degrees.

²⁸ (NMSU Foundation, 2023)

Table 14: Number of Alumni by Degree Received and Age Cohort in New Mexico²⁹

Age	Associate	Bachelor	Master	Doctoral
25 to 29	2,280	5,287	728	16
30 to 34	2,660	6,244	1,215	71
35 to 39	2,663	5,670	1,451	145
40 to 44	2,377	4,958	1,431	177
45 to 49	2,108	3,892	1,063	120
50 to 54	2,044	4,048	1,145	105
55 to 59	1,871	3,607	1,110	112
60 to 64	2,268	3,901	1,184	132
Total	18,271	37,607	9,327	878
Total Degrees				66,083

Combining the data in Tables 13 and 14, it is possible to calculate total earnings by age and degree held, which is shown in Table 15. Total earnings are adjusted to account for labor market participation and unemployment; the adjustment factor is shown in the table.

Table 15: Total Earnings Differential by Age Cohort and Educational Attainment in New Mexico Adjusted for Labor Force Participation and Unemployment³⁰

Age	Associate	Bachelor	Master	Doctoral
Adjustment Factor	0.691	0.819	0.819	0.819
25 to 29	\$16,159,838	\$60,979,619	\$5,103,475	\$246,131
30 to 34	\$22,342,727	\$69,584,570	\$26,291,710	\$879,942
35 to 39	\$19,415,424	\$107,270,140	\$20,873,999	\$2,697,389
40 to 44	\$28,794,114	\$78,592,797	\$17,734,511	\$4,908,066
45 to 49	\$23,531,889	\$61,927,345	\$17,437,554	\$3,162,193
50 to 54	\$26,407,170	\$94,192,152	\$9,127,447	\$5,489,592
55 to 59	\$25,311,747	\$107,595,542	\$4,518,838	\$4,523,064
60 to 64	\$4,446,858	\$131,370,181	\$11,565,478	\$6,810,816
Total	\$166,409,767	\$711,512,345	\$112,653,012	\$28,717,193
Total Earnings				\$1,019,292,318

²⁹ (Census Bureau, 2023)

³⁰ (Census Bureau, 2023)

The earnings differential amounts were assigned in IMPLAN to Household Income to estimate the economic impact of NMSU alumni in New Mexico, shown in Table 16. Since the impact is on consumer spending, only induced impacts are generated.

Table 16: Economic Impact and Contribution, Alumni Human Capital, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	0	\$0	\$0	\$0
Indirect	0	\$0	\$0	\$0
Induced	5,354	\$262,051,594	\$505,026,741	\$901,633,501
Total	5,354	\$262,051,594	\$505,026,741	\$901,633,501

A Note on Social Mobility

An important implication of NMSU’s economic impact and economic contribution as quantified and presented above, is the social mobility behind an NMSU education. Research in 2017 by the Brookings Institution comparing 342 four-year public universities, showed NMSU ranking at the top – at No. 2 only after The University of Texas at El Paso – in mobility rates which consider “access” (the share of students from the bottom income quintile) and “success” (the likelihood that a student from the bottom income quintile reaches the top income quintile).³¹ In essence, such a favorable mobility rate informs of NMSU’s successful record of its graduates moving up the socio-economic ladder. Indeed, when considering the state’s higher-learning institutions as a whole, New Mexico placed No. 13 on the list of 50 states in CollegeNET’s Social Mobility Index (SMI) in 2022.³² The SMI “measures the extent to which a university educates more economically disadvantaged students (with family incomes below the national median) at lower tuition and graduates them into good paying jobs.”³³

Finally, a key characteristic of NMSU in launching students on the path of social mobility is in the proportion of first-generation students it attracts. First-generation students are those whose parents do not have a four-year college degree.³⁴ First-generation students account for approximately one in three of NMSU’s student population.³⁵ At the state level, the

³¹ (Reber et al., 2017)

³² (CollegeNET, 2023)

³³ (CollegeNET, 2023)

³⁴ Most colleges and universities use this definition for first-generation students, and includes students whose parents completed associate programs or attended college but did not graduate. (Hamilton, 2023)

³⁵ (Bachman, 2023)

proportion of students in New Mexico who are the first in their family to go to college is 42.75%, ranking No. 8 on the list of 50 states in the proportion of first-gen students.³⁶

In all, on social mobility, the performance of the state of New Mexico’s higher-learning institutions, and of NMSU specifically, is noteworthy.

Innovation and Entrepreneurship

Impacts and contributions were measured from Arrowhead’s innovation and entrepreneurship programs, Arrowhead Park, and investment activities. Jobs created or supported by businesses located in Arrowhead Park and/or receiving investment are excluded from impact calculations because businesses may have other options for financing and business location. Jobs created or supported by Arrowhead’s entrepreneurship program clients were included in the impact calculations, as these businesses are generally more hands-on and engaged with Arrowhead at an earlier stage, when employment is more attributable to Arrowhead’s support. Arrowhead Park and investment activities are included in the contribution analysis.

The economic impact of Arrowhead’s innovation and entrepreneurship activities is shown in Table 17. The economic impact figures are based on 1,110 jobs created or supported by businesses participating in Arrowhead’s innovation and entrepreneurship programs.

Table 17: Economic Impact, Innovation and Entrepreneurship, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	1,110	\$57,403,901	\$97,051,850	\$225,297,647
Indirect	363	\$19,397,384	\$35,697,768	\$75,950,716
Induced	300	\$14,404,087	\$28,059,000	\$49,785,301
Total	1,773	\$91,205,372	\$160,808,618	\$351,033,665

Table 18 shows the economic contribution of NMSU’s innovation and entrepreneurship activities. The economic contribution figures are based on 1,603 jobs created or supported by businesses participating in Arrowhead’s innovation and entrepreneurship programs, located in Arrowhead Park, and/or receiving investment from a fund associated with Arrowhead.

³⁶ (Hamilton, 2023)

Table 18: Economic Contribution, Innovation and Entrepreneurship, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	1,603	\$87,707,305	\$145,856,558	\$313,537,305
Indirect	529	\$27,083,404	\$47,958,886	\$101,162,826
Induced	448	\$21,523,246	\$41,926,873	\$74,391,600
Total	2,580	\$136,313,955	\$235,742,316	\$489,091,731

Total Economic Impact

NMSU's total impact is shown in Table 19. This is the total impact of: (1) university expenditures, (2) student expenditures, (3) alumni human capital, and (4) innovation and entrepreneurship programs. The economic impact estimates exclude expenditures supported by state and local funding, tuition payments and student spending by New Mexico residents, and employment of businesses located in Arrowhead Park, and/or receiving investment from a fund associated with Arrowhead.

Table 19: Economic Impact, NMSU, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	3,671	\$249,165,112	\$313,871,489	\$543,782,628
Indirect	712	\$34,005,192	\$63,350,648	\$140,049,098
Induced	6,251	\$303,343,902	\$584,560,828	\$1,039,253,862
Total	10,634	\$586,514,205	\$961,782,966	\$1,723,085,589

NMSU's total economic contribution is shown in Table 20. This includes the same elements as the economic impact estimates, but also includes expenditures funded by state and local funding sources, spending by resident students, and employment of businesses located in Arrowhead Park, and/or receiving investment from a fund associated with Arrowhead. Additionally, the contribution analysis includes a slightly more conservative approach to estimate industry linkages that differs from impact analysis (see Methodology section for more details).

Table 20: Economic Contribution, NMSU, FY 2022

Impact	Employment	Labor Income	Value Added	Output
Direct	11,463	\$510,710,135	\$818,593,784	\$1,241,835,392
Indirect	1,361	\$62,163,657	\$112,467,127	\$251,296,209
Induced	6,810	\$331,890,459	\$639,453,163	\$1,134,571,552
Total	19,634	\$904,764,250	\$1,570,514,074	\$2,627,703,153

Table 21 shows the economic contribution of NMSU by county. Innovation and entrepreneurship programs delivered by Arrowhead and spending from Alumni Human Capital are not included in these amounts, as data were not available for these activities by county at the time of publication. Arrowhead does offer programs statewide and NMSU alumni also live throughout the state, so the figures in this table are conservative estimates.

Table 21: Economic Contribution by County, NMSU, FY 2022

County	Jobs	Labor Income	Value Added	Economic Output
Bernalillo	56	\$2,615,155	\$4,224,960	\$7,042,197
Catron	6	\$202,200	\$293,367	\$454,453
Chaves	25	\$615,222	\$929,525	\$1,675,317
Cibola	237	\$8,044,810	\$15,499,996	\$24,076,316
Colfax	15	\$531,113	\$812,917	\$1,302,884
Curry	73	\$2,612,161	\$3,847,944	\$5,784,492
De Baca	6	\$205,707	\$295,067	\$446,598
Doña Ana	10,019	\$452,797,207	\$740,013,884	\$1,091,473,591
Eddy	65	\$2,430,449	\$3,641,795	\$5,448,029
Grant	14	\$460,615	\$730,119	\$1,256,387
Guadalupe	6	\$214,142	\$316,213	\$486,906
Harding	6	\$194,384	\$276,171	\$409,580
Hidalgo	17	\$228,382	\$343,887	\$719,078
Lea	35	\$255,252	\$458,374	\$1,331,254
Lincoln	73	\$2,570,172	\$4,006,886	\$6,456,303
Los Alamos	4	\$145,015	\$209,334	\$305,263
Luna	14	\$514,701	\$954,828	\$1,636,088
McKinley	6	\$214,235	\$352,402	\$592,091
Mora	53	\$1,852,790	\$2,753,220	\$4,120,690
Otero	396	\$13,476,632	\$25,092,983	\$39,931,621
Quay	61	\$2,175,193	\$3,208,944	\$5,007,987
Rio Arriba	92	\$2,136,053	\$3,124,087	\$5,613,578
Roosevelt	41	\$118,402	\$292,200	\$1,308,640
San Juan	85	\$2,788,496	\$4,192,659	\$6,825,701
San Miguel	2	\$80,660	\$127,886	\$203,705
Sandoval	25	\$632,695	\$976,587	\$1,692,997
Santa Fe	25	\$1,074,984	\$1,662,266	\$2,574,160
Sierra	16	\$584,265	\$886,817	\$1,469,103
Socorro	28	\$395,874	\$631,820	\$1,378,852
Taos	16	\$545,761	\$836,590	\$1,359,456
Torrance	20	\$580,662	\$831,624	\$1,286,672
Union	59	\$2,136,625	\$3,132,245	\$4,776,655
Valencia	86	\$2,238,964	\$3,361,380	\$5,736,938
Total	11,681	\$505,668,978	\$828,318,977	\$1,234,183,585

Conclusion

NMSU is the oldest public institution of higher education in the state of New Mexico. The designation as New Mexico’s land-grant university under the Morrill Act has shaped NMSU since the late 1880s. NMSU has been dedicated to New Mexico’s diverse population for more than a century, transforming lives through three main pursuits: teaching, research, and public service. NMSU provides learning opportunities to a diverse population of students and community members at four campuses, Cooperative Extension offices located in each of New Mexico’s 33 counties, 12 research and science centers, and through distance education.

The primary impacts of NMSU analyzed in this report are: (1) university expenditures, (2) student expenditures, (3) alumni human capital, and (4) innovation and entrepreneurship activities. Additional impacts of NMSU exist, such as economic value created by new chile varieties developed by NMSU, increased social mobility, and spending from out-of-state visitors to the university; however, these were not included in our calculations due to the challenge of quantifying them accurately. Thus, it is appropriate to consider our estimate of the impact of NMSU to be conservative.

Table 22 shows the estimated economic impact and economic contribution of NMSU in FY 2022. This includes university expenditures, student expenditures, alumni human capital, and innovation and entrepreneurship programs. The economic impact estimates exclude expenditures supported by state and local funding, tuition payments and student spending by New Mexico residents, and employment of businesses located in Arrowhead Park, and/or receiving investment from a fund associated with Arrowhead. The total economic contribution includes the same elements as the economic impact estimates, but also includes expenditures funded by state and local funding sources, spending by resident students, and employment of businesses located in Arrowhead Park, and/or receiving investment from a fund associated with Arrowhead.

Table 22: Estimated Economic Impact and Contribution of NMSU, FY 2022

Category	Economic Impact	Economic Contribution
Direct Jobs	3,671	11,463
Total Jobs	10,634	19,634
Economic Output	\$1,723,085,589	\$2,627,703,153
Value-Added Production	\$961,782,966	\$1,570,514,074
Labor Income	\$586,514,205	\$904,764,250

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Glossary

Direct effects are the immediate (or first-round) consequences of a change in economic activity or policy. For example, if a firm spends \$1 million on construction of a new building, the direct effect on output (sales) in the construction sector is \$1 million. If eight workers are employed on the construction of the building, then those eight workers are also a direct effect.

Employment refers to jobs. Jobs may be full- or part-time and a single worker may be employed at multiple jobs.

Indirect effects occur as industries purchase inputs from other industries. If a construction project requires steel beams, there will be indirect effects on iron mining and coke producing industries.

Induced effects result from households spending the wage and salary income received by those employed directly or indirectly on a new activity.

Input-output model refers to a type of economic model designed to capture relationships among industries and ultimate consumers.

Intermediate spending refers to the demand of industry for the goods and services produced by other industries that will be used in the production process.

Labor income consists of employee compensation (including benefits), supplements to wages and salaries (such as employer contributions to pension funds), and proprietor's income.

Merchandise trade refers to international trade in goods: goods exports and goods imports.

Multi-Regional Input-Output (MRIO) expands the region of study to include more than one region of study, allowing for spillover effects to be calculated between regions.

Output refers to gross industry sales or expenditures, depending on the consequences.

Total effects refer to the sum of direct, indirect, and induced effects.

Value added refers to the change in value of a good or service during each stage of production. Gross Domestic Product is a value-added concept.³⁷

³⁷ (NIPA Handbook: Concepts and Methods of the U.S. National Income and Product Accounts | U.S., 2021)

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