

Executive Summary

The Economic Value of Navajo Technical University







AVAJO TECHNICAL UNIVERSITY (NTU) creates value in many ways. The university plays a key role in helping students increase their employability and achieve their individual potential. The university draws students to the region, generating new dollars and opportunities for the Navajo Nation.* NTU provides students with the education, training, and skills they need to have fulfilling and prosperous careers. Furthermore, NTU is a place for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

NTU influences both the lives of its students and the regional economy. The university supports a variety of industries in the Navajo Nation, serves regional businesses, and benefits society from an expanded economy and improved quality of life. Additionally, the benefits created by NTU extend to the local, state, and federal government through increased tax revenues and public sector savings.

This study measures the economic impacts created by NTU on the business community and the benefits the university generates in return for the investments made by its key stakeholder groups—students, taxpayers, and society as a whole. The following two analyses are presented:



The Navajo Nation (McKinley County, New Mexico)

NTU influences both the lives of its students and the regional economy.



Economic impact analysis



ਤੀਂਤ Investment analysis

All results reflect employee, student, and financial data, provided by the university, for fiscal year (FY) 2022-23. Impacts on the Navajo Nation economy are reported under the economic impact analysis and are measured in terms of added income. The returns on investment to students, national taxpayers, and society, along with benefits to New Mexico taxpayers, are reported under the investment analysis.

For the purposes of this analysis, the Navajo Nation is defined as McKinley County, New Mexico.

Economic impact analysis



NTU promotes economic growth in the Navajo Nation through its direct expenditures and the resulting expenditures of students and regional businesses. The university serves as an employer and buyer of goods and services for its day-to-day operations. The university's reputation and activities attract students from outside the Navajo Nation, whose expenditures benefit regional vendors. In addition, NTU is one of the primary sources of higher education to the Navajo Nation residents and a supplier of trained workers to regional industries, enhancing overall productivity in the regional workforce.

Operations spending impact

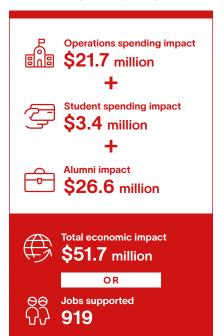
NTU adds economic value to the Navajo Nation as an employer of regional residents and a large-scale buyer of goods and services. In FY 2022-23, the university employed 361 full-time and part-time faculty and staff, 85% of whom lived in the Navajo Nation. Total payroll at NTU was \$17.5 million, much of which was spent in the region on groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the university spent \$22.2 million on expenses related to facilities, supplies, and professional services.

NTU's operations spending added \$21.7 million in income to the region during the analysis year. This figure represents the university's payroll, the multiplier effects generated by the in-region spending of the university and its employees, and a downward adjustment to account for funding that the university received from regional sources. The \$21.7 million in added income is equivalent to supporting 413 jobs in the region.

Student spending impact

Around 18% of credit students attending NTU originated from outside the region in FY 2022-23, and some of these students relocated to the Navajo Nation to attend NTU. These students may not have come to the region if the university did not exist. In addition, some in-region students, referred to as retained students, would have left the Navajo Nation if not for the existence of NTU. While attending the university, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. Also attributable to NTU is the increased spending of in-region students who would have remained in the Navajo Nation even if the university had not existed. Because of the federal scholarships and grants these students received, they spend more money in the region while attending

Impacts created by NTU in FY 2022-23



the university than they would have had they not attended NTU. In total, NTU's student spending generated \$3.4 million in added income for the regional economy in FY 2022-23, which supported 67 jobs in the Navajo Nation.

Alumni impact

The education and training NTU provides for regional residents has the greatest impact. Since the establishment of the university, students have studied at NTU and entered the regional workforce with greater knowledge and new skills. Today, many of former NTU students are employed in the Navajo Nation. As a result of their education from NTU, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2022-23, NTU alumni generated \$26.6 million in added income for the regional economy, which is equivalent to supporting 438 jobs.

Total impact

NTU added \$51.7 million in income to the Navajo Nation economy during the analysis year, equal to the sum of the operations spending impact, the student spending impact, and the alumni impact. For context, the \$51.7 million impact was equal to approximately 2.4% of the total gross regional product (GRP) of the Navajo Nation. This contribution that the university provided on its own is larger than the entire Finance & Insurance and Arts, Entertainment, & Recreation industries in the region combined.

NTU's total impact can also be expressed in terms of jobs supported. The \$51.7 million impact supported 919 regional jobs, using the jobs-to-sales ratios specific to each

industry in the region. This means that one out of every 32 jobs in the Navajo Nation is supported by the activities of NTU and its students. In addition, the \$51.7 million, or 919 supported jobs, stemmed from different industry sectors. For instance, among non-education industry sectors, the spending of NTU and its students and the activities of its alumni in the Health Care & Social Assistance industry sector supported 60 jobs in FY 2022-23. If the university did not exist, these impacts would not have been generated in the Navajo Nation.

NTU impacts by industry (jobs supported)







Construction



One out of every 32 jobs in the Navajo Nation is supported by the activities of NTU and its students.

Investment analysis



An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. The analysis presented here evaluates NTU as an investment from the perspectives of students, taxpayers, and society in New Mexico. As with the economic impact analysis, this analysis considers only FY 2022-23 activities.

Student perspective

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In FY 2022-23, NTU served 1,203 credit and 641 non-credit students. In order to attend the university, the students paid for tuition, fees, books, and supplies.

They also gave up money they would have otherwise earned had they been working instead of attending the university. The total investment made by NTU's students in FY 2022-23 amounted to a present value of \$7.3 million, equal to \$6.1 million in out-of-pocket expenses and \$1.2 million in forgone time and money.

In return for their investment, NTU's students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average NTU bachelor's degree graduate from FY 2022-23 will see annual earnings that are \$18,400 higher than a person with a high school diploma or equivalent working in New Mexico. Over a working lifetime, the benefits of a bachelor's degree over a high school diploma will amount to an undiscounted value of \$644,000 in higher earnings per graduate. The present value of the cumulative higher future earnings that NTU's FY 2022-23 students will receive over their working careers is \$45.0 million.

The students' benefit-cost ratio is 6.2. In other words, for every dollar students invest in NTU in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$6.20 in higher future earnings. Annually, the students' investment in NTU has an average annual internal rate of return of 28.3%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.1%.

Students see a high rate of return for their investment in NTU



Average annual return for NTU students

28.3%



Stock market 30-year average annual return

10.1%



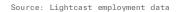
Interest earned on savings account (national deposit rate)

0.5%

Source: Forbes' S&P 500, 1994-2023; FDIC.gov, March 2023

Average earnings by education level at career midpoint

The average bachelor's degree graduate from NTU will see an increase in earnings of \$18,400 each year compared to a person with a high school diploma or equivalent working in New Mexico.







Taxpayer perspective

NTU generates more in national tax revenue than it receives. These benefits to taxpayers consist primarily of taxes that the government will collect from the added revenue created in the nation and state. As NTU students will earn more, they will make higher tax payments throughout their working lives. Students' employers will also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY 2022-23 students' working lives, the government will have collected a present value of \$59.4 million in added taxes. At the state level, New Mexico will have collected a present value of \$12.6 million in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of NTU students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The education that NTU students receive will generate savings in three main categories: 1) health care, 2) justice system, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, costs related to the justice system will decrease. NTU students will be more employable, so their reduced demand for income assistance such as welfare and unemployment benefits will benefit taxpayers. For a list of study references, contact the university for a copy of the main report. Altogether, the present value of the benefits associated with an education from NTU will generate \$8.6 million in savings to national taxpayers. Taxpayers in New Mexico will experience \$5.6 million in savings.

Total taxpayer benefits amount to \$68.0 million, the present value sum of the added tax revenue and public sector savings. Taxpayer costs are \$44.1 million, equal to the amount of government funding NTU received in FY 2022-23. These benefits and costs yield a benefit-cost ratio of 1.5. This means that for every dollar of public money invested in NTU in FY 2022-23, taxpayers in the U.S. will receive a cumulative present value of \$1.50 over the course of the students' working lives. In other words, NTU generates more benefits for national taxpayers than it costs to support.

Although it is not recommended to directly compare benefit-cost ratios between institutions since many factors influence them, any benefit-cost ratio above 1.0 is significant and indicates that the institution generates a surplus of benefits. Additionally, the average annual internal rate of return for taxpayers is 3.4% which compares favorably to other long-term investments in the public sector.

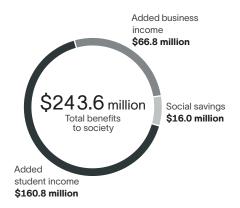
From the state perspective, New Mexico taxpayer benefits amount to \$18.2 million, which will accrue in the future as long as the FY 2022-23 student population of NTU remains in the state workforce. Taxpayers in New Mexico provided NTU \$12.5 million of funding in FY 2022-23. For every dollar of public money invested in the university, New Mexico taxpayers will receive \$1.50 in return over the course of FY 2022-23 students' working lives. The average annual rate of return for state taxpayers is 3.7%.

Social perspective

Society as a whole in the U.S. benefits from the presence of NTU in two major ways. Primarily, society benefits from an increased economic base in the nation. This is attributed to the added income from students' increased lifetime earnings

For every dollar of public money invested in NTU, taxpayers in the U.S. will receive a cumulative value of \$1.50 over the course of the students' working lives. At the state level, New Mexico taxpayers will receive \$18.2 million in benefits.

Social benefits from NTU nationwide



Source: Lightcast impact model



(added student income) and increased business output (added business income), which raise economic prosperity in the U.S.

Benefits to society also consist of the savings generated by the improved lifestyles of NTU students. As discussed in the previous section, education is statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers but are distinct from the costs avoided by the taxpayers outlined above. Health care savings include avoided medical costs associated with smoking, obesity, substance abuse, and depression. Justice system savings include avoided costs to the government and society due to less judicial activity. Income assistance savings include reduced welfare and unemployment claims. For a list of study references, contact the university for a copy of the main report.

Altogether, the social benefits of NTU equal a present value of \$243.6 million. These benefits include \$160.8 million in added student income, \$66.8 million in added business income, as well as \$16.0 million in social savings related to health, the justice system, and income assistance. People in the U.S. invested a present value total of \$54.6 million in NTU in FY 2022-23. The cost includes all government funding and student costs.

The benefit-cost ratio for society is 4.5, equal to the \$243.6 million in benefits divided by the \$54.6 million in costs. In other words, for every dollar invested in NTU, people in the U.S. will receive a cumulative value of \$4.50 in benefits. The benefits of this investment will occur for as long as NTU's FY 2022-23 students remain employed in the workforce.



Summary of investment analysis results

The results of the analysis demonstrate that NTU is a strong investment for all three major stakeholder groups-students, national taxpayers, and society. As shown, students receive a great return on their investments in an education from NTU. At the same time, taxpayers' investment in NTU returns more to government budgets than it costs and creates a wide range of social benefits throughout New Mexico and beyond.

Summary of investment analysis results



Student perspective

Present value benefits

\$45.0 million

Present value costs

\$7.3 million

Net present value

\$37.7 million Benefit-cost ratio

Rate of return

6.2

28.3%



Taxpayer perspective

National taxpayers

Present value benefits

\$68.0 million

Present value costs

\$44.1 million

Net present value

\$23.9 million

Benefit-cost ratio Rate of return

1.5

3.4%

State taxpayers

Present value benefits

\$18.2 million

Present value costs

\$12.5 million

Net present value

\$5.7 million

Benefit-cost ratio

Rate of return

1.5

3.7%



Social perspective

Present value benefits

S243.6 million

Present value costs

\$54.6 million

Net present value

\$189.0 million

Benefit-cost ratio Rate of return

4.5

n/a

^{*} The rate of return is not reported for the social perspective because the beneficiaries are not necessarily the same as the original investors.

Conclusion

The results of this study demonstrate that NTU creates value from multiple perspectives.

The university benefits regional businesses by increasing consumer spending in the region and supplying a steady flow of qualified, trained workers to the workforce. NTU enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The university benefits taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, NTU benefits society as a whole in the U.S. by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students.

About the study

Data and assumptions used in the study are based on several sources, including the FY 2022-23 academic and financial reports from NTU, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Lightcast's Multi-Regional Social Accounting Matrix model, and a variety of studies and surveys relating education to social behavior. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of economic impact and investment effectiveness. For a full description of the data and approach used in the study, please contact the university for a copy of the main report.



Lightcast

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