



## Master's in Data Science vs Master's in Business Analytics

June 2, 2021



Whether they prefer to be data-driven or data-informed, companies want to make data-derived insights part of their business decisions. The only problem is that they're falling short.

A Harvard Business Review survey of C-level technology and business executives found that **72% of participants** "have yet to forge a data culture" and that 52% say "they are not competing on data and analytics."

Most organizations know data is powerful. They just don't know what to do with it. This opens up an opportunity for employees who have the one-two punch of

data analysis skills and business acumen. With both technical data savvy and the persuasive skills to spur action within their organizations, they can lead transformations that not only increase revenue and innovation for their businesses, but make them indispensable to their current and future employers.

For those interested in transforming their business or organization to become data driven, a master's program can boost critical technical and professional skills. With more than a quarter of data scientist and analyst positions requiring an advanced degree, according to the job analytics platform Burning Glass, graduate education is also becoming a necessity.

The choice often comes down to a master's in data science and a [master's in business analytics](#).



## Key Differences Between Master's Programs in Data Science and Business Analytics

Many people use "data science" and "business analytics" interchangeably, but there is a real difference between the two fields and their related master's programs.

Data science and business analytics professionals both draw insights from data using statistics and software tools. The key difference is captured through the name. Business analytics is specifically interested in solving business problems and guiding business decisions. This desire to affect and drive business decision-making through data is a unique and dominant emphasis of business analytics as opposed to data science.

"If students are interested in the application of data to support business decision-making, then students are better served with a degree in business analytics. If students are more interested in the science underlying the models and data or in broad applications of data science, then I would encourage them to consider a master's in data science," explained Alan Montgomery, [head of the Master of Science in Business Analytics Program](#) at Carnegie Mellon University's Tepper School of Business.

"What really separates a business analytics person from a data scientist is the drive to make business decisions."

Key differences include:

- **Decisions:** While experts in both fields look to data for insights, business analytics professionals go a step further and turn those insights into actionable decisions.
- **Communication:** Business analytics professionals must be able to communicate their findings and recommendations to a company's stakeholders. These may include management, board members or clients.

One misconception is that a business analytics master's program is just data science courses with some management classes mixed in. This is not the case, especially with programs [built from the ground up to focus on business analytics](#). A business analytics curriculum puts an emphasis on prescriptive analytics, while a data science curriculum will focus more on predictive modeling. Operations research is a key component in prescriptive analytics and programs in business analytics are better suited than data science programs to leverage this component.

Request Brochure

Start Application

## Latest Articles

[How a Master's in Business Analytics Can Boost Your Salary](#)

[What Can You Do With a Master's In Business Analytics?](#)

[Choosing Between an MBA in Business Analytics vs Master's in Business Analytics](#)

[Choosing Between an MS in Business Intelligence vs Business Analytics](#)

[Master's in Data Science vs Master's in Business Analytics](#)

## Related Categories:

[Careers in Business Analytics](#)

[Data Science](#)

## Request Information

To learn more about the Tepper School's [online Master of Science in Business Analytics](#), fill out the fields below to [download a free brochure](#). If you have additional questions, please call **888-876-8959** or **412-238-1101** to speak with an admissions counselor.

First Name \*

Last Name \*

Email \*

Phone Number \*

Request Brochure

## What Can You Do With a Master's in Data Science?

Data science is the intersection of statistics, computer science and domain knowledge. Data scientists analyze large datasets in order to find patterns and tease out conclusions. Their findings are then used to solve problems or make recommendations in a wide range of areas, such as astronomy, medicine, retail or sports.

"Data science students need to be generalists who are able to look at problems that go anywhere from biomedical research to social media text analysis to predicting political trends," said Montgomery.

In a data science master's program, students learn how to mine, manage, interpret and visualize data. They become adept at creating algorithms that can process this data. The graduate courses may also encompass professional skills, since data scientists must be able to communicate their results and work effectively in teams.

This graduate degree is ideal for someone who wants an education that incorporates math, statistics, and computer science. An interest in machine learning is also essential, as stand-out data scientists are ones who can find innovative ways to apply [machine learning methodologies](#).

## What Can You Do With a Master's in Business Analytics?

To put it simply, you must have an interest in business activities to thrive in a business analytics program. "If you're not interested in business decision making, then Business Analytics is not for you," said Montgomery.

In a master's in business analytics program, students learn a mix of technical, analytical and professional skills. Ultimately, MSBA graduates [become as comfortable with the language of business as they are with programming languages](#). They are adept at bridging the gap between technical and non-technical stakeholders, able to communicate effectively at all levels of an organization and transform raw data into a meaningful resource.

Those who do well in these programs are problem-solvers who are fascinated by the ways data can boost the performance of business processes, inspire innovation or increase profitability.

Business analytics programs may be housed in a [university's business school](#), while most data science programs are found in statistics and computer science departments or schools of engineering. Similar to [an MBA program](#), some business analytics master's [follow a cohort model](#) so that students can learn within a team environment similar to what they'll encounter in the global marketplace.

## Why Would a Data Scientist Choose a Master's in Business Analytics?

A business analytics master's program equips students with the technical knowledge they need to turn raw data into usable ideas—and then takes that knowledge one step further, giving them the capability to turn those ideas into actions. For data professionals who want to take an active role in the way an organization operates, a business analytics path can lead to this level of influence.

Remember those CEOs and executives who have [yet to forge a data culture](#)? In that same study, 88% reported "a greater urgency" to invest in big data and AI, and the number of companies spending more than \$50 million on these areas jumped by 15%. More and more organizations are taking steps to make data-led decision-making a priority. And companies that are leaning into a data culture are more likely to hire business analytics graduates, according to Montgomery.

"If I am a new business and just adopting an analytics approach, I need business analytics people, because they would come in with a mindset that can help the organization figure out how to use analytics, or use it better," said Montgomery. "The companies that have already figured this out are likely to hire both data scientists and business analytics professionals, since they figured out the basic business application in the first and second generation of their analytics solutions"

Another bright spot for capable business analytics professionals? An [MIT Sloan analysis](#) found that in times of recession those who can communicate their value to the organization and have a direct impact on the management team are most likely to retain their roles or even grow their resources.

That means employees who are equipped with the skills to make actionable, quantifiable differences at their companies—and clearly communicate those advantages—will be in a strong position to rise up in their organization and in their career.

## About Tepper's Online MS in Business Analytics

For those who want to position themselves over the competition, the [online Master of Science in Business Analytics \(MSBA\)](#) from the Tepper School of Business at Carnegie Mellon University provides this potent combination of front-line technological expertise and in-depth business domain knowledge. It draws upon the rich tradition of operations research, analytical thinking, and scientific approaches to management that the school is known for.

MSBA graduates finish the program with robust, practical experience that they can immediately put to work. They are also lifetime members of a global alumni network, which includes exclusive access to Tepper's recruiting portal and opportunities for personalized career coaching.

The Tepper School of Business is ranked #2 for business analytics and Carnegie Mellon University is ranked #26 nationally by U.S. News & World Report, meaning that employers take notice when they see a CMU degree.

Explore a [comprehensive MSBA curriculum](#) that encompasses data visualization, machine learning and optimization, large-scale data management and more. Or talk one-on-one with an admissions counselor by using the chat box on this page or calling toll-free 888-876-8959.

[Home](#)  
[Curriculum](#)  
[Faculty](#)

[Admissions](#)  
[Careers](#)  
[About](#)

Carnegie Mellon University  
Tepper School of Business

[REQUEST INFORMATION ▶](#)  
[APPLY NOW ▶](#)  
[MSBA COURSE PREVIEW ▶](#)

Tepper School of Business  
Carnegie Mellon University  
5000 Forbes Avenue  
Pittsburgh, PA 15213  
412-238-1101



[Privacy Policy](#) | [analytics.tepper.cmu.edu](#)  
© 2023 Tepper School of Business. All rights reserved

[Contact Us!](#)