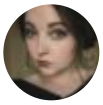
What Is Research? Types and Methods



Written by McKayla Girardin
Edited by Emily Courtney
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Research is the process of examining a hypothesis to make discoveries. Practically every career involves research in one form or another. Accountants research their client's history and financial documents to understand their financial situation, and data scientists perform research to inform data-driven decisions.

In this guide, we'll go over:

Research Definition

Research is an investigation into a topic or idea to discover new information. There's no all-encompassing definition for research because it's an incredibly varied approach to finding discoveries. For example, research can be as simple as seeking to answer a question that already has a known answer, like reading an article to learn why the sky is blue.

Research can also be much broader, seeking to answer questions that have never before been asked. For instance, a lot of research looks for ways to deepen our collective understanding of social, physical, and biological phenomena. Besides broadening humanity's knowledge, research is a great tool for businesses and individuals to learn new things.

Why Does Research Matter?

While some research seeks to uncover ground-breaking information on its own, other research forms building blocks that allow for further development. For example, Tony Gilbert of the Masonic Medical Research Institute (MMRI) says that Dr. Gordon K. Moe, a co-founder and director of research at MMRI, led early studies of heart rhythms and arrhythmia.

Gilbert notes that this research "allowed other scientists and innovators to develop inventions like the pacemaker and defibrillator (AED). So, while Dr. Moe did not invent the

pacemaker or the AED, the basic research produced at the MMRI lab helped make these devices possible, and this potentially benefitted millions of people."

Of course, not every researcher is hunting for medical innovations and cures for diseases. In fact, most companies, regardless of industry or purpose, use research every day.

"Access to the latest information enables you to make informed decisions to help your business succeed," says Andrew Pickett, trial attorney at Andrew Pickett Law, PLLC.

Types of Research

Scientific Research

Scientific research utilizes a systematic approach to test hypotheses. Researchers plan their investigation ahead of time, and peers test findings to ensure the analysis was performed accurately.

Foundational research in sciences, often referred to as "basic science," involves much of the research done at medical research organizations. Research done by the MMRI falls into this category, seeking to uncover "new information and insights for scientists and medical researchers around the world."

Scientific research is a broad term; studies can be lab-based, clinical, quantitative, or qualitative. Studies can also switch between different settings and methods, like translational research.

“Translational research moves research from lab-settings to the settings in which they will provide direct impact (for example, moving bench science to clinical settings),” says Laren Narapareddy, faculty member and researcher at Emory University.

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Historical Research

Historical research involves studying past events to determine how they’ve affected the course of time, using historical data to explain or anticipate current and future events, and filling in gaps in history. Researchers can look at past socio-political events to hypothesize how similar events could pan out in the future.

However, historical research can also focus on figuring out what actually happened at a moment in time, like reading diary entries to better understand life in England in the 14th century.

In many ways, research by data, financial, and marketing analysts can be considered historical because these analysts look at past trends to predict future outcomes and make business decisions.

User Research

User research is often applied in business and marketing to better understand a customer base. Researchers and analysts utilize surveys, interviews, and feedback channels to evaluate their clients’ and customers’ wants, needs, and motivations.

Analysts may also apply user research techniques to see how customers respond to a product's user experience (UX) design and test the efficacy of marketing campaigns.

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Market Research

Market research utilizes methods similar to user research but seeks to look at a customer base more broadly. Studies of markets take place at an intersection between economic trends and customer decision-making.

Market research "allows you to stay up-to-date with industry trends and changes so that you can adjust your business strategies accordingly," says Pickett.

A primary goal in market research is finding competitive advantages over other businesses. Analysts working in market research may conduct surveys, focus groups, or historical analysis to predict how a demographic will act (and spend) in the future.

Other Types of Research

The world of research is constantly expanding. New technologies bring new ways to ask and answer unique questions, creating the need for different types of research. Additionally, certain studies or questions may not be easily answered by one kind of research alone, and researchers can approach hypotheses from a variety of directions. So, more niche types of research seek to solve some of the more complex questions.

For instance, "multidisciplinary research brings experts in different disciplines together to ask and answer questions at the intersection of their fields," says Narapareddy.

Research doesn't happen in a bubble, though. To foster better communication between researchers and the public, types of research exist that bring together both scientists and non-scientists.

“Community-based participatory research is a really important and equitable model of research that involves partnerships among researchers, communities and organizations at all stages of the research process,” says Narapareddy.

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Research Methods

Regardless of the type of research or the study’s primary goal, researchers usually use quantitative or qualitative methods.

Qualitative Methods

Qualitative research focuses on descriptive information, such as people’s beliefs and emotional responses. Researchers often use focus groups, interviews, and surveys to gather qualitative data.

This approach to research is popular in sociology, political science, psychology, anthropology, and software engineering. For instance, determining how a user feels about a website’s look isn’t easily put into numbers (quantitative data). So, when testing UX designs, software engineers rely on qualitative research.

Quantitative Methods

Quantitative research methods focus on numerical data like statistics, units of time, or percentages. Researchers use quantitative methods to determine concrete things, like how many customers purchased a product. Analysts and researchers gather quantitative data using surveys, censuses, A/B tests, and random data sampling.

Practically every industry or field uses quantitative methods. For example, a car manufacturer testing the effectiveness of new airbag technology looks for quantitative data on how often the airbags deploy properly. Additionally, marketing analysts look for increased sales numbers to see if a marketing campaign was successful.

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Mixed-Methods

Answering a question or testing a hypothesis may require a mixture of qualitative and quantitative methods. To see if your customers like your website, for instance, you'll likely apply qualitative methods, like asking them how they feel about the site's look and visual appeal, and quantitative methods, like seeing how many customers use the website daily. Research that involves qualitative and quantitative methods is called mixed-method research.

Careers in Research

Researching ideas and hypotheses is a common task in many different careers. For example, working in sales requires understanding quantitative research methods to

determine if certain actions improve sales numbers. Some research-intensive career paths include:

- Data science
- Investment banking
- Product management
- Marketing
- Civil rights law
- Actuarial science

Working in Research

Once you have the fundamentals of researching down, the subject matter may evolve or change over the course of your career.

"My first research experience was assessing fall risk in firefighters — and I now use multi-omic methods [a type of molecular cell analysis] to understand fertility and reproductive health outcomes in women," notes Narapareddy.

For those considering a career in research, it's important to "take the time to explore different research methods and techniques to gain a better understanding of what works best for them," says Pickett.

Remember that research is exploratory by nature, so don't be afraid to fail.

"The work of scientists who came before us helps guide the path for future research, including both their hits and misses," says Gilbert.

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