



Introduction

What is research

Problem: You want to buy land.

Solution: **Check for any existing mortgages, liens, or disputes on the land.**

Problem: You want to learn research methodology.

Solution: **You look up on Google to find the best methodology books.**

Problem: Does the use of prior climate information by farmers reduce crop damage?

Solution: **Collect data from different farmers at a single point in time and Use statistical tests to determine the relationship between farmers' use of climate information and crop damage.**

What is research

Research is a process through which new knowledge is discovered.

Research helps us to organize this new information into a coherent body, a set of related ideas that explain events that have occurred, and predict events that may happen.

Research is defined as a systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relationship about various phenomena. Research is a systematic investigation to find answers to a problem.

Research refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the fact or data, analyzing the facts, and reaching certain conclusions either in the form of solutions toward the concerned problem or in certain generals for some theoretical formulation.

Objectives of research

1. To gain familiarity with a phenomenon or to achieve new insights into it.
Example: To gain new insights into why some farmers adopt precision agriculture technologies
2. To portray accurately the characteristics of individuals, situation or groups.
Example: Demographic and Socio-Economic Characteristics of Organic Farmers in Bangladesh
3. To determine the frequency with which something occurs or with which it is associated with something else.
Example: Frequency of Pesticide Use and Its Association with Crop Yield Among Farmers
4. To test a hypothesis of a causal relationship between variables.
Example: The Effect of Fertilizer Type on Crop Yield
5. To understand of an area of concern in a very general term.
Example: Exploring Farmers' Concerns About Climate Change Impacts on Agriculture
6. To understand what is going on.
Example: Understanding the Decline in Pollinator Populations in Agricultural Areas
7. To understand what is likely to happen in the future.
Example: how changes in weather patterns (e.g., temperature, rainfall) will likely affect crop yields over the next decade

Types of research

- Exploratory Research
- Conclusive Research: Descriptive and Experimental
- Business Research
- Research according to the branch of knowledge
- Research according to the nature of data: Qualitative and Quantitative
- Research according to utility or application: Basic and Applied
- Research according to the place where it is carried out: Field, Laboratory and Library/Documentary
- Research according to the use of methods: Survey, Observation, Case, Experimental, Historical, and Comparative
- Research according to the time frame: Single period, Longitudinal
- Research according to purpose: Descriptive, Analytical, Evaluation, Exploratory/Formulative

Types of research: Exploratory Research

Exploratory research is designed to provide a background, to familiarize and, as the word implies, just “explore” the general subject. An exploratory research is the investigation of relationships among variables without knowing the objective of the study. Typical approaches in exploratory research are the literature survey and the experience survey.

The literature survey is an economical and quick way for researchers to develop an excellent understanding of an area of problem in which they have minimum experience. It also familiarizes them with past research results, data sources, and availability of data types. The experience survey concentrates on an individual who has specific knowledge in that area. Representative samples are undesired. A covering of widely divergent views is always good. Researchers are looking for ideas and not for conclusions.

Topic: Exploring the Adoption of Electric Vehicles (EVs) Among Rural Communities

Objective: To understand the general attitudes, barriers, and motivations for adopting electric vehicles in rural areas.

Approach: Conduct qualitative interviews with rural residents, community leaders, and local businesses

Outcome: The research provides a general understanding of the key factors influencing EV adoption, such as concerns about charging infrastructure, vehicle cost, and environmental awareness. Further, more specific studies can follow to address the identified barriers.

Types of research: Descriptive Research

Descriptive research is designed to describe something. A descriptive study must collect data for a definite purpose for a maximum profit. A specific hypothesis is the guide when descriptive studies vary in degree. Depending on the research problem, it allows both implicit and explicit hypotheses to be tested.

Topic: Demographic Profile of Online Shoppers in Urban Areas

Objective: To gather detailed data about the demographics of people who shop online in urban areas.

Approach: Conduct a survey asking participants about their age, gender, income level, frequency of online shopping, preferred products, and preferred platforms.

Outcome: The study provides a detailed profile of urban online shoppers, such as their shopping habits, income brackets, and product preferences, which can inform e-commerce companies' marketing strategies.

Types of research: Experimental Research

Experimentation refers to that process of research, in which one or more variables are manipulated under the conditions, in which the data that show the effects will be collected.

Experiments will create artificial situations so that the researcher can obtain specific required data and the data can be measured accurately. Experiments are artificial because the situations are usually created for testing purposes. This artificiality is the essence of the experimental method since it gives researchers more control over the factors under study.

If they can control the factors present in a given situation, they can obtain more conclusive evidence of cause- and- effect relationships between them.

Topic: The Effect of Study Environment on Student Performance

Objective: To test whether studying in a quiet environment improves student performance compared to studying in a noisy environment.

Approach: Randomly assign students to either a quiet study environment or a noisy study environment (e.g., with background music). After a set study period, have all students take the same test. Compare the test scores of the two groups using statistical analysis to determine if there is a significant difference.

Outcome: The research will provide evidence of whether the study environment has a causal impact on student performance, helping educators make decisions about optimal learning environments.

Types of research: Business Research

Business Research is defined as the systematic and objective process of generating information for aid in business decisions. This research information should be Scientific—not intuitive or haphazardly gathered—Objective, and Impersonal.

Business research can be used for any aspect of the enterprise. By providing appropriate information, research should be an aid to managerial judgment although it should not be a substitute for it. Applying the research is a managerial art in itself. All types of organizations that engage in some kind of business activity can use business research.

Objective: To investigate how customer satisfaction influences brand loyalty among online retail customers.

Approach: Conduct an online survey with structured questions targeting online retail customers.
Outcome: higher customer satisfaction leads to greater brand loyalty, which helps online retailers focus on improving key factors such as service quality, product variety, and delivery reliability to retain customers.

Types of research: Qualitative and Quantitative Research

Qualitative research is based on the subjective assessment of attributes, motives, opinions, desires, preferences, behavior, etc. Research in such a situation is a function of researcher's insights and impressions.

Topic: Understanding Consumer Behavior Towards Sustainable Products

Approach: Conduct in-depth interviews with consumers to explore their perceptions, motivations, and barriers to purchasing sustainable products.

Outcome: Insights into the values and concerns that drive or hinder consumers' sustainable purchasing decisions.

Quantitative research is variables based whereas qualitative research is attributes based. Quantitative research is based on measurement or quantification of the phenomenon under study. That is, it is data based and hence more objective and popular.

Topic: The Effect of Price Discounts on Sales Volume

Approach: Collect sales data from 100 retail stores before, during, and after applying price discounts.

Analysis: Use statistical techniques (e.g., regression analysis) to determine if discounts significantly increase sales volume.

Outcome: A quantifiable relationship between price discounts and sales, enabling decision-making on promotional strategies.

Types of research: Single period and Longitudinal Research

Single period research is conducted for 1 year or at a point of time.

Topic: Employee Job Satisfaction Across Departments

Approach: Conduct a survey among employees of a company in a single time period (e.g., one month) to measure job satisfaction.

Outcome: A snapshot of job satisfaction levels across departments, helping managers understand current morale and areas for improvement.

Longitudinal studies are conducted for several years or several time periods, e.g., a time-series analysis.

Topic: The Impact of Training Programs on Employee Performance Over 5 Years

Approach: Track the performance of employees who participate in training programs over five years by collecting annual performance data.

Outcome: Identification of long-term improvements in employee performance and insights into which training programs are most effective.

Research method and methodology

Research methodology in economics is the study of the general approach to research in economics. It focuses on the processes of developing information and knowledge, providing application and understanding of that knowledge, understanding the relationship between theories and methods of reaching conclusions.

Research method refers to the specific techniques, tools, procedures to applied to achieve a given objective, e.g., regression analysis, mathematical analysis, surveys, data collection, theoretical constructions. Methods are a portion of the concern of methodology.

