Research Methods Dictionary for Business Students

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INTRODUCTION

This *Research Methods Dictionary for Business Students* has been developed to help students navigate the often complex language of academic research. While initially created with MBA and postgraduate business students in mind, learners across various disciplines - particularly those in business, management, marketing, and the social sciences - may also find this resource highly beneficial. It provides clear, concise definitions of key research terms, supported by practical examples that connect abstract concepts to real-world applications.

Designed as a practical learning aid, the dictionary connects theoretical ideas to business-relevant scenarios, making it especially useful for students preparing dissertations, conducting applied research, or critically engaging with academic literature. Covering areas such as statistical tests, philosophical foundations, sampling strategies, and data analysis methods, each entry includes a definition, an illustrative example, and cross-references to related concepts when appropriate. This resource aims to support both students and researchers in developing their research vocabulary, strengthening their methodological understanding, and building confidence in using research terminology effectively.

A

Abbreviations

Abbreviations are shortened forms of words or phrases, often used to save space or time. They typically consist of the initial letters of the words or are a contraction of a single word.

Example: *MBA (Master of Business Administration) is an abbreviation commonly used in business and academic contexts.*

Abduction

Abduction is a reasoning process in which the most plausible explanation is inferred from incomplete or limited observations. Unlike deduction or induction, abduction does not guarantee the truth of the conclusion, but it offers the best available explanation based on the evidence at hand. It is often used in the early stages of research to generate hypotheses.

Example: *A manager notices that employee productivity has significantly declined over the past month. There are several possible reasons for this trend, but the manager infers that a recent change in management style may be the cause. This is an example of abduction because the manager selects the most plausible explanation based on limited information, which can later be tested or investigated further.*

Abductive Reasoning

Abductive reasoning is a form of logical inference that starts with an observation or set of observations and seeks to find the simplest and most likely explanation. It is often used in situations where information is incomplete.

Example: *If a manager notices a sudden drop in employee performance, they might use abductive reasoning to infer that a recent change in management style could be the cause.*

Abstract

An *abstract* is a brief summary of a research article, thesis, review, or any in-depth analysis of a particular subject. It is typically concise and provides the main objectives, methodology, results, and conclusions of the study.

Example: *In an academic paper on consumer behaviour, the abstract might summarise the study's aim to understand the impact of digital marketing on purchasing decisions, outline the research methods, and highlight the key findings.*

Academic Misconduct

Academic misconduct refers to any action that gives a student an unfair academic advantage or misrepresents their knowledge, skills, or work. This includes plagiarism, cheating, fabrication, and collusion.

Example: *Submitting a term paper that has been copied from the internet without proper citation constitutes academic misconduct.*

Acknowledgements

Acknowledgements in academic writing are statements where the author expresses gratitude for the assistance and support received during the research and writing process. This can include supervisors, colleagues, funding bodies, or family members.

Example: *In a dissertation, the acknowledgements might thank a professor for their guidance, peers for their feedback, and family for emotional support.*

Action Research

Action research is a participatory research method that involves a cycle of planning, acting, observing, and reflecting. It is typically used to solve practical problems and improve practices within an organisation or community.

Example: *An MBA student might conduct action research within their company to develop and implement a new customer service strategy, continuously refining the approach based on feedback and results.*

Active Participants

Active participants are individuals in a research study who engage meaningfully in the research process beyond passive data provision. This can include contributing to the design, interpretation, or dissemination of research, particularly in participatory or action research approaches.

Example: *In a study on improving team performance in a sales department, employees are not only surveyed but also invited to workshops to co-design new performance strategies. These employees are considered active participants because they contribute insights and help shape the research outcomes.*

Additivity

Additivity refers to the property of a model or process where the effect of multiple factors or variables can be summed to determine the overall effect. In statistics, it implies that the combined effect of different variables is equal to the sum of their individual effects.

Example: *In a sales forecast model, if the effects of marketing spend and economic conditions on sales are additive, the total impact on sales is the sum of the effects of these two factors independently.*

Age of Enlightenment

The *Age of Enlightenment* was an intellectual and cultural movement in the 17th and 18th centuries that emphasised reason, individualism, and scepticism of traditional authority. It encouraged scientific thinking, political reform, and the pursuit of knowledge.

Example: *The philosophies of thinkers like John Locke and Voltaire, which promoted ideas such as democracy, freedom of speech, and separation of church and state, were central to the Age of Enlightenment and influenced the development of modern political systems.*

alpha Level

The *alpha level*, or significance level, is the threshold set by a researcher to determine whether a statistical result is significant. It represents the probability of rejecting the null hypothesis when it is true (Type I error). Common alpha levels are 0.05, 0.01, and 0.10.

Example: *In a study testing the effectiveness of a new marketing strategy, the researcher sets an alpha level of 0.05. If the p-value of the test is less than 0.05, the result is considered statistically significant, leading to the rejection of the null hypothesis.*

Alternate-Form Reliability

Alternate-form reliability is a measure of the consistency of test results when two different but equivalent versions of the same test are administered to the same group. It assesses whether different forms of a test produce similar scores.

Example: *A company develops two versions of an employee aptitude test to prevent cheating. To ensure alternate-form reliability, they administer both versions to a sample group and compare the results to check for consistency.*

Alternative Hypothesis

The alternative hypothesis (H_1) is a statement in statistical testing that proposes a specific effect, relationship, or difference that exists between variables contrary to the null hypothesis. The researcher aims to support this hypothesis through evidence.

Example: *In a study on customer satisfaction, the alternative hypothesis might state that customers who receive personalised service have higher satisfaction levels than those who do not.*

Analysis

Analysis is the process of examining data or information methodically to understand it, identify patterns, relationships, or trends, and draw conclusions. It involves breaking down complex data into simpler components for better understanding and interpretation.

Example: *In business research, a company might analyse sales data to determine which products are performing well and which are underperforming, helping to inform future marketing strategies.*

Analysis of Covariance (ANCOVA)

Analysis of Covariance (ANCOVA) is a statistical technique that combines elements of analysis of variance (ANOVA) and linear regression. It is used to compare group means while statistically controlling for the influence of

one or more continuous variables known as covariates. By adjusting the dependent variable for these covariates, ANCOVA increases the accuracy of group comparisons by accounting for variability that is not due to the experimental treatment.

Example: *In a study evaluating the effectiveness of three different employee training programmes on performance outcomes, ANCOVA could be used to control for each employee's initial skill level. This ensures that differences in post-training performance are more accurately attributed to the training itself, rather than to pre-existing skill differences.*

Analysis of Variance (ANOVA)

Analysis of Variance (ANOVA) is a statistical method used to compare the means of three or more groups to determine if there are any statistically significant differences among them. It tests the hypothesis that the group means are equal.

Example: *A business researcher might use ANOVA to compare the average sales performance of employees across three different sales regions to see if the region has a significant effect on sales outcomes.*

ANOVA Table

An *ANOVA table* is a summary table that displays the results of an ANOVA test. It includes key components such as sums of squares, degrees of freedom, mean squares, the F statistic, and the p-value, which are used to determine whether the group means are significantly different.

Example: *In an ANOVA table for a study comparing the effectiveness of three marketing campaigns, the p-value indicates whether the observed differences in campaign performance are statistically significant.*

Appendices

Appendices are supplementary sections at the end of a research report or thesis that provide additional information, data, or materials that support the main text but are too detailed or bulky to include within the main body. Appendices often include raw data, detailed calculations, or expanded explanations.

Example: *A business research paper might include an appendix with detailed survey results, interview transcripts, or complex statistical tables that were referenced but not fully presented in the main text.*

Applied Research

Applied research is a type of research conducted with the specific aim of solving practical, real-world problems. It focuses on finding solutions to issues faced by businesses, industries, or governments, often leading to the development of new products, processes, or strategies.

Example: *A company conducting applied research might study consumer behaviour to develop a new marketing strategy that targets a specific demographic more effectively, thereby increasing market share.*

Approach to Theory Development

The *approach to theory development* refers to the methods and processes by which theories are created, refined, or tested in a research context. It can be deductive (starting with a theory and testing it through empirical observation) or inductive (developing a theory based on observed data).

Example: *In business strategy research, an inductive approach might involve observing successful companies and developing a new theory on competitive advantage based on patterns in their operations and market behaviour.*

Archives

Archives refer to collections of historical records and documents, often stored and organised in a systematic way. In business research, data from archives can be used to analyse trends, make comparisons over time, or study past business practices and their outcomes.

Example: *An MBA student researching the evolution of corporate social responsibility (CSR) practices might use archived annual reports from major corporations to analyse how CSR reporting has changed over the last few decades.*

Area Sampling

Area sampling is a sampling technique used in research where geographical areas are divided into smaller regions (e.g., neighbourhoods, cities), and samples are drawn from these areas. This method is often used when a population is spread across a large area.

Example: *A market research firm conducting a survey on consumer preferences for a new product might use area sampling to ensure that they*

gather data from diverse regions, such as urban, suburban, and rural areas, to get a representative sample.

Artificial Intelligence

Artificial Intelligence (AI) refers to the simulation of human intelligence processes by machines, especially computer systems. In research, AI can be used to analyse large datasets, generate predictions, automate tasks, or provide decision support. Common applications include machine learning, natural language processing, and expert systems.

Example: *A retail company uses AI algorithms to predict customer purchasing behaviour based on historical data. The AI analyses patterns and recommends inventory changes. In a business research context, this use of AI helps inform supply chain decisions and customer engagement strategies.*

Assumptions

Assumptions are conditions that must be met for the results of a statistical test to be valid. Common assumptions include normality (data are normally distributed), homogeneity of variance (equal variances across groups), and independence of observations.

Example: *When performing a regression analysis to predict sales based on advertising spend, an MBA student must check assumptions like linearity and homoscedasticity to ensure that the model's results are valid and reliable.*

Attrition

Attrition refers to the loss of participants or data over the course of a study or business process. In a business context, it can also refer to employee turnover or customer churn.

Example: *In a longitudinal study of employee engagement, attrition might occur if a significant number of employees leave the company before the study concludes, potentially impacting the study's results.*

Attrition Bias

Attrition bias occurs when the loss of participants in a study leads to a non-representative sample, potentially skewing the results. This type of bias is a concern in longitudinal studies where participants drop out over time.

Example: *If a company conducts a long-term study on the effectiveness of a new training program, and only the most engaged employees remain in the study, the results might overestimate the program's effectiveness due to attrition bias.*

Audiovisual Data

Audiovisual data refers to information collected in the form of audio and video recordings. In research, this type of data is often used to capture interviews, focus groups, or other interactions that can provide rich, detailed insights.

Example: *A company conducting customer satisfaction research might use audiovisual data by recording focus group discussions. Analysing this data helps to understand customer emotions and attitudes toward the company's products.*

Auditing

Auditing is the systematic examination and verification of a company's financial records, operations, or processes to ensure accuracy, compliance with standards, and effectiveness. It can be internal (conducted by the company) or external (conducted by an independent party).

Example: *A company might conduct an internal audit to ensure that all financial transactions are accurately recorded and that it complies with tax laws and accounting standards.*

Autoethnography

Autoethnography is a qualitative research method that blends autobiography and ethnography. The researcher uses self-reflection and personal experience to connect individual experiences to broader cultural, social, or business issues.

Example: *An MBA student with entrepreneurial experience might use autoethnography to explore the challenges faced by startup founders, using their own journey as a lens to understand broader trends in entrepreneurship.*

Axiology

Axiology is the branch of philosophy that studies values, including ethics and aesthetics. In research, it refers to the study of the role that values play

in shaping the research process, including what is considered worthwhile to study and how findings are interpreted.

Example: *In business ethics research, axiology might guide a study on corporate governance by focusing on how values like transparency and integrity influence decision-making processes within organisations.*

B

Background Section

The *background section* of a business report or research paper provides essential context and information about the topic, including industry background, relevant trends, and key concepts, helping to frame the study or proposal. This usually sits within an introduction section of a research paper.

Example: *In a business report or study focused on entering a new market, the background section might include an overview of the industry, the competitive landscape, and recent consumer behaviour trends that justify the need for expansion.*

Backward Snowballing

Backward snowballing is a method where researchers identify key references from an initial paper and then review the cited references to find earlier relevant studies. This is a common strategy when writing a literature review.

Example: *If an MBA student is researching the impact of digital transformation on supply chain management, they might start with a key article and use backward snowballing to discover foundational studies on how digital tools have historically influenced supply chains.*

Bar Charts

Bar charts are graphical representations of data using rectangular bars to show the frequency or value of different categories. The length of each bar is proportional to the corresponding value.

Example: *An MBA student might use a bar chart to compare the annual revenue of different product lines within a company, helping to identify which products are the most profitable.*

Bayesian Analysis

Bayesian analysis is a statistical method that applies Bayes' theorem to update the probability of a hypothesis as more data becomes available. It is particularly useful in decision-making under uncertainty.

Example: *A business analyst might use Bayesian analysis to update the likelihood of a successful product launch based on pre-launch market testing results and ongoing sales data, allowing for more informed decisions on scaling production.*

Bell-Shaped Curve

A bell curve, or normal distribution, is a graph depicting a data distribution in which most values cluster around the mean, forming a symmetrical, bell-shaped curve.

Example: *In performance appraisals, HR might analyse employee scores on a bell curve to identify top performers, average performers, and underperformers, guiding decisions on promotions, raises, and training programs.*

Best Practice

Best practice refers to a method or technique that has been shown through experience and research to consistently produce superior results compared to other approaches. Businesses adopt best practices to improve efficiency, quality, and performance.

Example: *In supply chain management, best practices might include just-in-time inventory management, which minimises storage costs and reduces waste, improving overall efficiency.*

Between Groups

Between-groups comparisons are an experimental design in which different groups are compared and exposed to different treatments or conditions. The goal is to determine whether the treatment affects the outcome.

Example: *An MBA student conducting market research might use a between-groups design to compare customer reactions to two different marketing campaigns and analyse which campaign leads to higher purchase intentions.*

Bias

Bias in research or data analysis refers to systematic errors that lead to inaccurate conclusions. Bias can occur due to flawed sampling methods, measurement errors, or personal prejudices.

Example: *If a company surveys only its most loyal customers for feedback on a new product, the resulting data may be biased, overestimating the product's appeal to the broader market.*

Bibliography

A *bibliography* is a list of all the sources cited or consulted in the preparation of a research paper or report. It provides detailed references that allow readers to locate the original sources.

Example: *In a business research paper on the effects of globalisation, the bibliography would include references to academic articles, books, and industry reports that were used to support the analysis and conclusions.*

Binary Logistic Regression

Binary logistic regression is a type of statistical analysis used when the outcome variable is binary (e.g., success/failure, yes/no). It models the relationship between the outcome and one or more predictor variables.

Example: *A company might use binary logistic regression to predict whether a customer will renew a subscription based on factors like usage patterns, customer service interactions, and previous renewal behaviour.*

Bivariate Correlation

Bivariate correlation is a statistical measure that describes the strength and direction of the relationship between two variables. It is often represented by a correlation coefficient ranging from -1 to 1.

Example: *A business analyst might calculate the bivariate correlation between customer satisfaction scores and repeat purchase rates to determine if happier customers are more likely to make additional purchases.*

Black Swan Theory

The *Black Swan Theory* describes unpredictable and rare events that have significant impacts, often challenging the assumptions and expectations of markets or businesses. These events are typically characterised by their extreme rarity and severe consequences. The term "black swan" originates from the Western belief that all swans were white, a belief that was proven incorrect when black swans were discovered in Australia in the 17th century. This metaphor illustrates how certain events are viewed as impossible or highly unlikely until they actually occur, thereby challenging prevailing assumptions.

Example: *The 2008 financial crisis is often cited as a "Black Swan" event, as it was largely unforeseen by the financial industry and had a massive impact on global markets, leading to widespread bankruptcies and economic downturns.*

Block Sampling

Block sampling is a method in which the population is divided into blocks or groups, and a random sample of these blocks is selected for analysis. Each block is treated as a separate sampling unit.

Example: *A company wants to evaluate employee engagement across its offices. Instead of surveying employees at every office, they divide the offices into blocks based on geographic regions (e.g., East Coast, West Coast). They then randomly select offices from each region (block) and survey employees in those selected offices.*

Bloom's Taxonomy

Bloom's Taxonomy is a hierarchical classification of cognitive skills used in education, ranging from basic knowledge recall to higher-order thinking skills like analysis, synthesis, and evaluation. It is often used to design curriculum and assessments.

Example: *In business education, a researcher might use Bloom's Taxonomy to develop their research objectives. For example, the objectives might start with basic knowledge recall (e.g., identify common factors affecting employee productivity), progress to application (e.g., analyse employee feedback) and culminate in evaluation (e.g., measure productivity changes post-implementation and compare them to pre-implementation levels).*

Boolean

Boolean logic refers to a system of algebraic operations used in computer science and information retrieval. The basic Boolean operators are AND, OR, and NOT, which combine or exclude keywords in search queries.

Example: *When conducting market research using online databases, a student might use Boolean operators to refine search results. For example, a search query like "marketing AND (digital OR online) AND NOT social media" would return articles related to digital and online marketing but exclude those focused on social media.*

Bootstrap Methods

Bootstrap methods are resampling techniques used to estimate the sampling distribution of a statistic by repeatedly sampling from the data with replacement. This approach helps assess a statistic's variability without relying on traditional parametric assumptions.

Example: *A business analyst might use bootstrap methods to estimate the confidence intervals for the average customer lifetime value (CLV) in a new subscription model. By resampling the existing customer data, the analyst can better understand the variability and reliability of the average CLV estimate, which informs pricing strategies and financial projections.*

Box Plots

Box plots, also referred to as box-and-whisker plots, are graphical representations that display the distribution of data based on five summary statistics: minimum, first quartile, median, third quartile, and maximum. They are valuable for identifying outliers and understanding the spread of data.

Example: *An MBA student analysing salary distributions across different departments might use box plots to visualise the range and median salaries in each department. The box plots can reveal variations between departments and highlight any outliers, such as exceptionally high or low salaries.*

Box-Cox Transformation

The *Box-Cox transformation* is a statistical technique used to stabilise variance and make data more normally distributed. It is particularly useful

in regression analysis when the assumptions of normality and homoscedasticity (constant variance) are not met.

Example: *In a financial analysis of company earnings, a student might apply a Box-Cox transformation to the data if it shows skewness or heteroscedasticity. By transforming the data, the student can perform more accurate regression analysis, leading to better predictions of future earnings based on various economic factors.*

Business Research

Business research involves the systematic investigation of business-related issues, including market trends, consumer behaviour, organisational processes, and financial performance. The goal is to gather evidence to inform business decisions, strategy development, and policy formulation.

Example: *A company considering entering a new international market might conduct business research to assess the market potential, competitive landscape, regulatory environment, and cultural preferences. The findings from this research would guide the company's entry strategy, including product localisation and marketing approaches.*

C

CAPI

CAPI stands for Computer-Assisted Personal Interviewing, a data collection method in which an interviewer uses a computer or tablet to administer a structured interview face-to-face with a respondent. The computer helps guide the questions, record responses, and manage the data in real-time.

Example: *A market research firm uses CAPI to conduct in-person interviews in shopping centres to gather consumer opinions on a new product. The interviewer uses a tablet to follow the survey script and record responses directly.*

CAQDAS

CAQDAS stands for Computer-Assisted Qualitative Data Analysis Software. It refers to software programs designed to facilitate qualitative data analysis, such as text, audio, or video, by providing tools for coding, organising, and interpreting the data.

Example: *A researcher can use CAQDAS software such as NVivo to analyse hundreds of customer feedback comments from an online survey. The software helps code qualitative comments through coding strips, highlighting, and selecting nodes. By coding these comments, the researcher could identify recurring themes, such as "customer service satisfaction" and "product quality issues," which are then used to develop strategies for improving customer experience.*

Case Study

A *case study* is an in-depth investigation of a single individual, group, event, or situation over a period of time. It often involves multiple data collection methods, such as interviews, observations, and document analysis, to provide a detailed understanding of the subject.

Example: *A researcher conducts a case study on a company that successfully implemented a sustainable supply chain to understand the*

challenges and benefits of this approach. Students who want to conduct research within their organisation often take this approach.

Case-Control Study

A *case-control* study is a type of observational study often used in epidemiology. It compares two groups, one with the condition or outcome of interest (cases) and one without (controls), to identify factors that may have contributed to the presence of the condition.

Example: *Researchers conduct a case-control study to examine the relationship between smoking and lung cancer by comparing patients with lung cancer (cases) to those without (controls).*

CASI

CASI stands for Computer-Assisted Self-Interviewing. It is a method where respondents complete a survey on a computer or tablet without an interviewer's assistance, allowing for more privacy and reducing potential interviewer bias.

Example: *In a survey about sensitive topics like drug use, respondents use CASI to answer questions directly on a tablet, ensuring their responses are private and anonymous.*

CASIC

CASIC stands for Computer-Assisted Survey Information Collection. It is an umbrella term that includes various computer-assisted methods for survey data collection, such as CAPI, CATI (Computer-Assisted Telephone Interviewing), and CASI.

Example: *A research organisation uses CASIC to manage a large-scale survey, employing different methods like CATI for phone interviews and CASI for online surveys.*

Categorical Data

Categorical data is data that can be classified into distinct groups or categories based on specific attributes or qualities rather than being expressed as numerical values. Each category is typically labelled by a name or description, and the categories are often mutually exclusive, meaning that each data point can belong to only one category.

Example: *In a business student's research project, a Likert scale survey is used to gather employee opinions on workplace satisfaction. The responses, such as "Very Satisfied," "Satisfied," "Neutral," "Dissatisfied," and "Very Dissatisfied," represent categorical data. Each response is categorised based on the level of satisfaction rather than being treated as a numerical value.*

Categorical Variables

Categorical variables represent different categories or groups within a dataset. These variables can be nominal, where the categories have no inherent order, or ordinal, where the categories do have a specific order but the intervals between them are not numerically meaningful. Students often confuse interval data with ordinal data, which is problematic when selecting an appropriate inferential test.

Example: *In a market research study, a company categorises customers by their preferred method of shopping: "Online," "In-Store," or "Both." This is an example of a nominal categorical variable since the categories are distinct with no inherent ranking. Another example is customer satisfaction ratings captured on a Likert scale as "Very Unsatisfied," "Unsatisfied," "Neutral," "Satisfied," and "Very Satisfied," which represent an ordinal categorical variable since the categories have a specific order but the differences between them are not numerically precise.*

CATI

CATI stands for Computer-Assisted Telephone Interviewing. It is a telephone survey technique where the interviewer follows a script provided by a computer program, which also records the responses.

Example: *A company uses CATI to conduct customer satisfaction surveys, where interviewers call customers and input their responses directly into the computer system.*

Causal Marketing Research

Causal marketing research aims to identify cause-and-effect relationships between variables, often by conducting experiments or studies in which one variable is manipulated to observe its effect on another.

Example: *A company conducts causal marketing research to determine if changing the colour of its product packaging will lead to an increase in sales.*

Causal Models

Causal models are statistical models used to describe and analyse the causal relationships between variables. They help us understand how changes in one variable may cause changes in another.

Example: *A researcher uses a causal model to study how advertising expenditure influences sales, accounting for other factors like market conditions.*

Causation

Causation refers to a relationship between two variables where a change in one variable directly results in a change in another variable. Establishing causation requires rigorous research design, often through controlled experiments or longitudinal studies, to ensure that the observed effect is due to the variable of interest and not confounded by other factors. It's important not to confuse causation with correlation; correlation indicates that two variables are related, but it does not prove that one causes the other.

Example: *A company conducts an A/B test to determine the impact of a new email marketing strategy on sales. Group A receives the new email campaign, while Group B does not. The study finds that Group A shows a significant increase in sales compared to Group B, suggesting that the new email marketing strategy causes an increase in sales. This demonstrates a causal relationship between the marketing strategy and sales performance.*

Census

A *census* is a data collection method that involves gathering information from every individual within a defined population rather than relying on a sample. This approach ensures that the data collected is comprehensive and representative of the entire population, providing detailed insights into various characteristics such as demographics, behaviours, or opinions.

Example: *A large retail chain conducts an internal census of all its employees across multiple locations to gather detailed information on job satisfaction, training needs, and career aspirations. By surveying every employee, the company ensures that it has a complete and accurate*

understanding of its workforce, allowing for more informed decision-making regarding HR policies and training programs.

Central Tendencies

Central tendencies are statistical measures used to identify the central point or typical value within a dataset. The three primary measures of central tendency are the mean (average), median (middle value), and mode (most frequent value). Depending on the nature of the data and its distribution, some datasets are more appropriately summarised by the mean, while others are better represented by the median. For example, the mean is useful for data with a normal distribution, while the median is more appropriate for skewed data, as it is less affected by outliers.

Example: *A business analyst examines the salaries of employees in a company to understand the typical compensation level. In this dataset, the median salary might be more appropriate to report if a few very high salaries skew the mean, leading to a misleading average. By using the median, the analyst provides a clearer picture of what most employees earn, avoiding the distortion caused by extreme values.*

Chi-Square Goodness of Fit Test

The *Chi-Square Goodness of Fit Test* is used to determine if the observed frequency distribution of a categorical variable matches an expected distribution.

Example: *A company wants to test if customer preferences for four different product colours are evenly distributed. The observed customer preferences (e.g., 30 for red, 25 for blue, 20 for green, 25 for yellow) are compared to the expected frequencies if customers were equally likely to choose any colour.*

Chi-Square Test

A *chi-square test* is a statistical method used to examine the relationships or differences between categorical variables. There are two main types of chi-square tests: 1) Chi-Square Goodness of Fit Test: This test determines whether the observed frequencies of a single categorical variable match the expected frequencies based on a specified distribution. 2) Chi-Square Test of Independence: This test assesses whether two categorical variables are independent of each other or if there is a significant association between them.

Example: *A retail company wants to understand customer preferences for four different product colours: red, blue, green, and yellow. They hypothesise that customer preferences are evenly distributed across these colours. To test this, they conduct a Chi-Square Goodness of Fit Test by comparing the observed number of purchases for each colour against the expected number if preferences were evenly distributed. In another scenario, the same company might want to know if customer satisfaction (satisfied, neutral, dissatisfied) is related to the shopping method (in-store or online). They use the Chi-Square Test of Independence to see if the satisfaction level depends on the method of shopping or if the two variables are independent of each other.*

Chi-Square Test of Independence

The *Chi-Square Test of Independence* assesses the relationship between two categorical variables to see if they are independent of each other.

Example: *A business wants to know if there is a relationship between customer satisfaction (satisfied, neutral, dissatisfied) and the method of service received (in-store, online), which are both categorical variables. The test examines whether satisfaction levels are independent of the service method.*

Chronological

Chronological refers to the arrangement of events, data, or information in the order of their occurrence over time. This method is often used in business research to track the development of industries, market trends, or the history of business practices, providing a clear narrative of changes and progress.

Example: *In a study on the evolution of marketing strategies, the researcher organises the strategies chronologically, starting with traditional methods like print advertising, moving through the rise of digital marketing, and ending with current trends in social media marketing. This chronological approach helps students understand how marketing has adapted to technological changes over time.*

Classical Period

The *Classical period* refers to a historical era, particularly in Western history, encompassing ancient Greece and Rome (roughly from the 5th century BCE to the 5th century CE). During this time, foundational ideas in

various fields, including philosophy, science, and business, were developed. These ideas continue to influence modern research paradigms and philosophical approaches in business studies.

Example: *In the study of research paradigms, the Classical period is significant because it introduced foundational philosophical concepts that underpin modern scientific inquiry. For instance, Aristotle's emphasis on empirical observation and logic laid the groundwork for the positivist paradigm, which values observable, measurable phenomena in business research. Similarly, Plato's exploration of ideal forms and the nature of reality has influenced interpretivist approaches, which seek to understand the subjective meanings that individuals ascribe to their experiences in the business context. These classical philosophical ideas continue to shape the way researchers approach the study of business phenomena.*

Closed Questions

Closed questions are survey or interview questions that limit respondents to a set of predefined answers, such as "yes" or "no," or specific multiple-choice options. These questions are useful in business research for collecting quantitative data that can be easily analysed, such as customer preferences or employee satisfaction levels.

Example: *A company conducting an employee satisfaction survey asks, "Do you feel valued at work?" with response options "Yes," "No," or "Sometimes." This is a closed question because it restricts the respondent to a set of predefined answers, making it easier to quantify and analyse the data.*

Cluster Analysis

Cluster analysis is a statistical technique that groups similar cases—such as customers, products, or companies—into clusters based on shared characteristics. This method is commonly used in business research for market segmentation, enabling businesses to target specific customer groups more effectively.

Example: *A marketing team uses cluster analysis to segment a company's customer base into different groups based on purchasing behaviour and demographic factors. This analysis helps the team develop targeted marketing campaigns for each cluster, such as offering discounts to price-sensitive customers or promoting luxury products to high-income customers.*