

BT406 – RESEARCH METHODOLOGY & SKILL ENHANCEMENT

MID TERM MOST IMPORTANT QUESTIONS

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GROUP LINK: <https://chat.whatsapp.com/BjC6W0jZx8o9yaC2ISh1Gu>

1. What are characteristics of good hypothesis?

A good hypothesis has following key characteristics that make it useful for scientific investigation:

1. Testable

- A hypothesis must be capable of being tested through observation or experimentation.
- It should make predictions that can be measured or observed.

2. Falsifiable

- There should be a possibility to prove the hypothesis wrong.
- If no scenario could disprove it, it's not scientific.

3. Clear and Precise

- The wording should be unambiguous and specific.
- Avoid vague terms; define variables clearly.

4. Based on Prior Knowledge

- A good hypothesis is often informed by existing theories, observations, or data.
- It's not a random guess but has some foundation in logic or prior evidence.

5. Simple and Concise

- It should follow the principle of parsimony—the simplest explanation that fits the data is preferred.
- Avoid unnecessary complexity.

6. Logical Consistency

- The hypothesis should be internally consistent and not contradict known facts or well-established theories.

7. Predictive Power

- A strong hypothesis can predict the outcome of future experiments or observations.
- It often takes the form of an “if...then...” statement (e.g., *If X happens, then Y will result*).

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2. What are three types of literature method?

The three main types of literature methods (or approaches to literature review) in research are:

1. Systematic Literature Review (SLR)

Purpose: To provide a comprehensive, unbiased summary of all available evidence on a specific research question using a structured and transparent process.

Key Features:

- Follows a clearly defined and replicable method.
- Involves a detailed search strategy across multiple databases.
- Includes criteria for inclusion/exclusion of studies.
- Often used in healthcare, psychology, and social sciences.

2. Narrative Literature Review (Traditional Review)

Purpose: To summarize and interpret a body of literature on a topic in a more general, descriptive, and subjective way.

Key Features:

- Less structured than a systematic review.
- Allows for broader coverage and interpretation.
- Often used to provide background or theoretical context.

3. Scoping Review

Purpose: To map the existing literature on a broad topic and identify key concepts, gaps, and types of evidence available.

Key Features:

- Broader in scope than a systematic review.
- Does not usually assess the quality of included studies.
- Useful for emerging areas of research or to refine research questions.

3. What are cross sectional studies and longitudinal studies?

Cross-Sectional Study:

A cross-sectional study is a type of observational research that analyzes data from a population or a representative subset at a single point in time. This design is commonly used to assess the prevalence of certain characteristics, conditions, or behaviors within a group, such as health status, attitudes, or educational outcomes. Because the data is collected at one specific moment, cross-sectional studies are efficient in terms of time and cost. However, they are limited in their ability to determine cause-and-effect relationships, as they do not track changes over time. These studies are particularly useful for identifying correlations and generating hypotheses for further research.

Longitudinal Study:

A longitudinal study is a research design that involves repeated observations of the same variables over an extended period. This approach allows researchers to track changes, developments, and long-term effects within individuals or groups. Longitudinal studies are particularly valuable for examining causal relationships and understanding how certain factors influence outcomes over time. For example, they can be used to study how early childhood experiences affect adult behavior or how a medical condition progresses. Although they provide rich and detailed data, longitudinal studies are more time-consuming and expensive than cross-sectional studies, and they face challenges such as participant dropout.

4. What is report writing?

Report writing is the process of organizing and presenting information in a structured, formal manner for a specific audience and purpose. Reports are used to inform, analyze, and sometimes recommend actions based on facts, research, or observations.

Key Features of Report Writing:

1. Objective and Factual

- Focuses on clear, unbiased presentation of information.
- Based on evidence, data, or observations.

2. Structured Format

- Typically includes sections like title, table of contents, introduction, methodology, findings, conclusion, and recommendations.

3. Purpose-Driven

- Written to meet a specific goal—such as evaluating a situation, tracking progress, or providing research results.

4. Formal Tone

- Uses clear, concise, and formal language.
- Avoids personal opinions unless requested.

5. What role theory plays in science?

Role of Theory in Science:

Theory plays a central role in science by providing a systematic explanation of observed phenomena. It helps scientists:

- Organize knowledge into coherent frameworks.
- Predict outcomes under certain conditions.
- Guide research by suggesting hypotheses and methods.
- Interpret data and connect facts meaningfully.
- Refine understanding as new evidence emerges.

6. What is theory?

A theory is a well-substantiated, logical explanation of aspects of the natural or social world, based on a body of evidence gathered through observation and experimentation. It:

- Explains how and why something happens.
- Is testable and refinable with new evidence.
- Connects facts and concepts into a coherent framework.

7. What is construct validity?

Construct validity refers to how well a test or measurement actually measures the concept or construct it's supposed to measure—like intelligence, motivation, or anxiety. It goes beyond just the surface or obvious traits and ensures the tool truly reflects the underlying idea. For example, a test with good construct validity for anxiety should relate to other measures of anxiety and behave differently from tests measuring unrelated concepts. Establishing construct validity helps confirm that conclusions drawn from the test are meaningful and accurate.

8. How to write reviews?

To write a good review, follow these simple steps:

- ✓ **Understand the purpose** — Know if you're summarizing, evaluating, or critiquing.
- ✓ **Read or research thoroughly** — Gather all relevant information about the topic or work.
- ✓ **Organize your thoughts** — Outline key points like strengths, weaknesses, and overall impression.
- ✓ **Write an introduction** — Briefly state what you're reviewing and your main opinion.
- ✓ **Summarize the content** — Give a clear, concise overview without too much detail.
- ✓ **Evaluate critically** — Discuss what works well and what doesn't, supported by examples.
- ✓ **Conclude clearly** — Summarize your judgment and, if appropriate, give recommendations.
- ✓ **Use a clear and respectful tone** — Be honest but fair and professional.

9. What is action research?

Action research is a reflective process where practitioners identify a problem, implement a solution, and evaluate its effectiveness in a real-world setting. It aims to improve practices through a cycle of planning, acting, observing, and reflecting, often involving collaboration between researchers and participants.

10. What is concurrent validity and predictive validity?

Concurrent validity refers to the extent to which the results of a new test or measurement correspond to those of an established test measuring the same construct, when both are conducted at the same time. For example, if a new depression questionnaire produces similar scores to a widely accepted depression scale administered simultaneously, it has good concurrent validity. This type of validity helps confirm that the new test is measuring what it claims by comparing it against a trusted standard.

Predictive validity is the degree to which a test accurately forecasts future outcomes or behaviors. For example, the predictive validity of a college entrance exam would be judged by how well the exam scores predict students'

future academic performance. A test with high predictive validity is valuable because it provides meaningful information about what will happen later, helping with decisions like admissions, hiring, or treatment planning.

11. What are ethical issues associated with research?

Ethical issues in research include:

- **Informed consent:** Participants must voluntarily agree to take part, fully understanding the study.
- **Privacy and confidentiality:** Protecting participants' personal information from unauthorized access.
- **Avoiding harm:** Ensuring no physical, psychological, or emotional harm comes to participants.
- **Deception:** Minimizing or justifying any misleading of participants and debriefing afterward.
- **Right to withdraw:** Allowing participants to leave the study at any time without penalty.
- **Honesty and integrity:** Reporting data truthfully without fabrication or manipulation.
- **Respect for participants:** Treating all individuals with dignity and fairness.
- **Fair treatment:** Avoiding exploitation or discrimination of any group.

12. What are goals of explanatory research?

The main goals of explanatory research are to understand the causes and reasons behind a phenomenon and to explain how and why certain events or behaviors occur. Unlike descriptive research, which focuses on “what” is happening, explanatory research digs deeper to uncover relationships, causes, and effects. It aims to develop theories or test existing ones by identifying variables and the nature of their connections. This type of research helps answer questions like “Why does this happen?” or “What factors influence this outcome?” Ultimately, explanatory research provides insights that can guide decision-making and further scientific investigation.

13. What is theoretical sampling?

Theoretical sampling is a research strategy used primarily in qualitative studies, especially in grounded theory. It involves selecting participants, cases, or data sources based on their potential to help develop or refine emerging theories. Instead of choosing samples randomly or based on fixed criteria, researchers decide what data to collect next based on what will best deepen understanding of the concepts being studied. This process continues until theoretical saturation is reached—when new data no longer adds significant insight to the theory. Theoretical sampling helps build a strong, data-driven explanation rather than just describing a population.

14. What is Correlational and Explanatory hypothesis?

A **correlational hypothesis** predicts a relationship or association between two or more variables but does not imply causation. It suggests that as one variable changes, another variable tends to change in a specific way (either positively or negatively), without stating that one causes the other. For example, "There is a positive correlation between hours studied and exam scores."

An **explanatory hypothesis**, on the other hand, goes beyond association and attempts to explain the cause-and-effect relationship between variables. It proposes that one variable directly influences or causes a change in another. For example, "Increasing study hours causes an improvement in exam scores."

15. What is sequential and snow ball sampling?

Sequential sampling is a method where data collection occurs in phases, and the decision to continue or stop sampling is based on the analysis of data gathered so far. Researchers collect and analyze data in sequence, adjusting the sample size dynamically until enough information is obtained to reach a conclusion. This approach is often used in quality control or clinical trials.

Snowball sampling is a non-probability sampling technique often used in qualitative research where existing study participants recruit future participants from their social networks. It's useful for accessing hard-to-reach or hidden populations, such as marginalized groups, where a sampling frame doesn't exist. The sample "snowballs" as more people are referred and added.

16. What is sampling unit?

A sampling unit is the basic element or entity from which data is collected in a study. It can be an individual, a group, an organization, or any other defined unit chosen for measurement or observation. For example, in a survey of students, each student is a sampling unit; in a study of schools, each school might be a sampling unit. Identifying the sampling unit clearly is essential because it determines how the sample is selected and how results are generalized.

17. What are three guidelines of participant in study?

Three important guidelines for participants in a study are:

1. **Informed Consent:** Participants should be fully informed about the study's purpose, procedures, risks, and benefits before agreeing to take part. They must voluntarily give their consent without any pressure.
2. **Right to Withdraw:** Participants should know they can leave the study at any time without penalty or negative consequences.
3. **Confidentiality:** Participants' personal information and responses must be kept confidential and used only for the purposes of the study, ensuring their privacy is protected.

18. What is descriptive hypothesis?

A descriptive hypothesis predicts or states the characteristics, traits, or conditions of a single variable or group without suggesting any relationship or cause-effect link. It focuses on describing "what is" rather than explaining "why" or "how." For example, a descriptive hypothesis might state, "The average age of college students is 21 years." It's often used in exploratory or initial research to outline expected observations.

19. What is computerize literature search?

A computerized literature search is the process of using electronic databases and search engines to find relevant academic articles, books, reports, and other scholarly materials. Instead of manually searching through physical journals or libraries, researchers use keywords, Boolean operators, and filters within software or online platforms (like PubMed, Google Scholar, or JSTOR) to quickly locate information related to their topic. This method is faster, more efficient, and can access a vast amount of up-to-date resources across multiple disciplines.

20. Explain Discriminate and Converge validity.

Discriminant validity assesses whether a test or measurement tool is truly distinct from other tests that measure different constructs. It ensures that the measure does not show strong correlations with variables or scales that it shouldn't theoretically be related to. For example, a test measuring anxiety should not highly correlate with a test measuring intelligence, because these are different constructs. Demonstrating discriminant validity confirms that the tool is specific and not just capturing general traits or unrelated factors.

Convergent validity evaluates whether a test correlates strongly with other measures that are designed to assess the same or very similar constructs. If two different instruments intended to measure, say, depression, show a high correlation, this supports convergent validity. This means the test accurately reflects the construct it's supposed to measure and aligns well with other established measures of that construct.

21. Explain Theoretical Framework, Conceptual Model and Theoretical Foundation.

Theoretical Framework

A theoretical framework is a structure built from existing theories that guides a research study. It explains the key concepts, variables, and their relationships based on established theories. It helps researchers understand what to study, formulate hypotheses, and interpret findings. Essentially, it provides the lens through which the research problem is viewed and analyzed.

Conceptual Model

A conceptual model is a visual or narrative representation of how the researcher thinks different variables or concepts relate to each other in a specific study. It's often more flexible and specific than a theoretical framework, focusing on the particular factors being studied and how they interact. It helps clarify assumptions and guides data collection and analysis.

Theoretical Foundation

The theoretical foundation refers to the broader base of existing theories and principles that underpin the research topic. It's the overall body of knowledge that supports why the study is important and provides the background for the theoretical framework. It ensures the research is grounded in well-established scientific thinking.

22. What is assumption?

An assumption is something accepted as true or certain without proof, serving as a starting point for reasoning or research. In research, assumptions are the underlying conditions or beliefs that researchers take for granted when designing a study or interpreting results. They help simplify complex realities but must be reasonable and clearly stated, as they influence the study's validity and conclusions. For example, assuming participants will answer survey questions honestly is a common research assumption.

23. What is criteria for sample design?

The criteria for a good sample design include:

1. **Representativeness:** The sample should accurately reflect the characteristics of the entire population, ensuring results can be generalized.
2. **Adequacy:** The sample size must be large enough to provide reliable and valid results but balanced with resource constraints.
3. **Sampling Method:** The method chosen (random, stratified, systematic, etc.) should suit the research objectives and population type.
4. **Practicality:** The design should be feasible in terms of time, cost, and accessibility.
5. **Precision:** The sample should minimize errors and biases to produce accurate estimates.
6. **Homogeneity and Heterogeneity:** Depending on the study, the sample should either capture population diversity or focus on a specific homogeneous group.

24. How to examine research report?

To examine a research report effectively, follow these steps:

1. **Check the Title and Abstract:** Ensure the topic is clear and the summary reflects the study's purpose and key findings.
2. **Review the Introduction:** Look for a clear statement of the research problem, objectives, and the significance of the study.
3. **Evaluate the Literature Review:** See if it covers relevant past research and identifies gaps the study aims to fill.
4. **Assess the Methodology:** Examine if the research design, sample, data collection, and analysis methods are appropriate and well-explained.
5. **Analyze the Results:** Check if findings are presented clearly, with proper use of tables, figures, and statistics.
6. **Consider the Discussion and Conclusion:** Determine whether interpretations are logical, limitations are acknowledged, and conclusions align with results.
7. **Review References:** Ensure sources are credible, current, and relevant.

25. What is moderate variable?

Moderating variable is an important concept that researchers must understand to design and interpret studies accurately. It refers to a variable that affects the strength or direction of the relationship between the independent and dependent variables. Recognizing and testing for moderators helps researchers uncover more nuanced insights, showing how and when certain effects occur rather than assuming a simple cause-effect link.

Developing the skill to identify and incorporate moderating variables enhances a researcher's ability to create more precise hypotheses, choose appropriate analysis methods (like interaction effects in regression), and interpret complex real-world phenomena. This deepens critical thinking and analytical skills, which are essential for advancing research quality and practical applicability.

26. Define Quota and Convenient sampling.

Quota sampling is a non-probability sampling technique where the researcher divides the population into distinct subgroups (quotas) based on characteristics like age, gender, or income, and then selects a specific number of participants from each subgroup. This ensures the sample reflects certain key traits of the population but does not use random selection.

Convenience sampling is another non-probability method where participants are selected based on their easy availability or accessibility to the researcher. It's quick and inexpensive but may not represent the population well, limiting the generalizability of the results.

27. What is door to door interview?

A door-to-door interview is a data collection method where researchers visit people's homes to conduct face-to-face interviews. This approach allows for direct interaction, enabling the interviewer to clarify questions and observe non-verbal cues. It's often used in surveys requiring detailed or sensitive information and can improve response rates compared to phone or mail surveys. However, it can be time-consuming, costly, and may raise privacy concerns among participants.

28. What are measurement issues?

Measurement issues refer to challenges and potential problems that arise when collecting and interpreting data in research. These issues can affect the accuracy, reliability, and validity of the measurements, which in turn impact the quality of the study's results. Common measurement issues include:

- **Validity problems:** When the instrument doesn't measure what it's supposed to (e.g., low construct validity).
- **Reliability issues:** Inconsistency in measurement results over time or across different observers.
- **Measurement errors:** Mistakes due to poorly designed tools, participant misunderstanding, or data recording errors.
- **Scale selection:** Choosing inappropriate scales (nominal, ordinal, interval, ratio) that don't fit the variable.
- **Bias:** Systematic errors like social desirability bias or interviewer influence.
- **Sensitivity:** Instruments may fail to detect subtle changes or differences.

29. What are degrees of Abstraction?

Degrees of abstraction refer to the levels at which ideas, concepts, or phenomena are represented, ranging from very general to very specific. In research and theory development, this helps organize knowledge by moving between broad, abstract concepts and detailed, concrete observations.

- **High abstraction:** Concepts are broad, general, and theoretical (e.g., "health," "motivation"). These are often used to build overarching frameworks or theories.
- **Moderate abstraction:** More focused concepts that start to specify particular aspects of the broader idea (e.g., "mental health," "intrinsic motivation").
- **Low abstraction:** Very specific, concrete variables or measures used in studies (e.g., "number of therapy sessions attended," "scores on a motivation questionnaire").

30. Write properties of Nominal Scale.

Here are the key properties of a Nominal Scale:

1. **Categorical:** Data are grouped into distinct categories or names without any order or ranking (e.g., gender, nationality).
2. **Mutually exclusive:** Each observation fits into one and only one category.
3. **Exhaustive:** All possible categories are included so every observation can be classified.
4. **No quantitative value:** Categories do not have numerical meaning or magnitude.
5. **No inherent order:** Categories cannot be logically ranked or compared in terms of size or value.
6. **Used for labeling:** Mainly for identification or classification purposes.

31. Define Basic and Applied research.

Basic research is focused on gaining fundamental knowledge and understanding of phenomena without immediate practical application in mind. It seeks to expand theory and generate new insights, often driven by curiosity or the desire to explore “why” or “how” something happens.

Applied research, on the other hand, aims to solve specific, practical problems by applying existing knowledge or theories. It is goal-oriented and designed to produce results that can be used directly in real-world settings, such as improving technology, policies, or practices.

32. What are dimensions of job satisfaction?

The key dimensions of job satisfaction typically include:

1. **Work Itself:** How enjoyable, meaningful, or challenging the actual job tasks are.
2. **Pay:** Satisfaction with salary, wages, and benefits.
3. **Promotion Opportunities:** Perceptions of chances for advancement and career growth.
4. **Supervision:** Quality of leadership, support, and communication from supervisors.
5. **Co-workers:** Relationships and social interactions with colleagues.
6. **Work Environment:** Physical conditions, resources, and workplace atmosphere.
7. **Job Security:** Feeling secure about continued employment.

33. What is impact assessment?

Impact assessment is a systematic process used to evaluate the positive and negative effects of a project, policy, program, or intervention before, during, or after its implementation. It helps identify the potential consequences on various aspects such as the environment, society, economy, or health. The goal is to inform decision-making by predicting outcomes, minimizing harm, and maximizing benefits. Impact assessments ensure that stakeholders understand the broader implications and help promote sustainable and responsible development.

34. What are characteristics of scientific method?

The scientific method has several key characteristics:

1. **Systematic:** It follows a structured, organized process of observation, hypothesis formulation, experimentation, and analysis.
2. **Empirical:** Relies on observable and measurable evidence gathered through experiments or observations.

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3. **Objective:** Strives to minimize personal biases or subjective influences in data collection and interpretation.
4. **Replicable:** Procedures and results can be repeated by others to verify findings.
5. **Falsifiable:** Hypotheses must be testable and able to be proven wrong.
6. **Cumulative:** Builds on existing knowledge, refining or expanding theories over time.
7. **Predictive:** Allows for predictions about future events or phenomena based on tested theories.

35. What is proposal of research and its sections?

A research proposal is a formal document that outlines what you plan to study, why it's important, and how you will conduct the research. It serves as a plan or blueprint for your study and is often used to seek approval or funding.

Key sections of a research proposal typically include:

1. **Title:** Clear and concise statement of the research topic.
2. **Introduction:** Background information, research problem, and significance of the study.
3. **Literature Review:** Summary of existing research related to your topic, highlighting gaps your study will address.
4. **Research Objectives or Questions:** What you aim to find out or prove.
5. **Hypothesis (if applicable):** Testable predictions based on theory or prior research.
6. **Methodology:** Detailed plan of how you will collect and analyze data, including sample, instruments, and procedures.
7. **Ethical Considerations:** How you will protect participants' rights and confidentiality.
8. **Timeline:** Estimated schedule for completing different phases of the research.
9. **Budget (if required):** Expected costs and resources needed.
10. **References:** List of sources cited in the proposal.

36. Differentiate between test retest reliability and parallel reliability.

Test-Retest Reliability measures the consistency of a test over time. The same test is administered to the same group of people on two different occasions, and the scores are compared. High correlation indicates the test produces stable results over time.

Parallel Reliability (also called alternate-form reliability) assesses the consistency between two different versions of the same test designed to measure the same construct. Both versions are given to the same group, and their scores are correlated. High correlation shows the two forms are equivalent in measuring what they intend to.

37. Write three characteristics of case study.

Here are three key characteristics of a case study:

1. **In-depth exploration:** It provides a detailed, comprehensive examination of a single individual, group, event, or organization.
2. **Context-specific:** The study focuses on understanding the phenomenon within its real-life context, considering environmental and situational factors.

3. **Multiple data sources:** It uses various methods such as interviews, observations, documents, and recordings to gather rich, qualitative data.

38. What is Nominal and Ordinal scale? Write their properties.

Nominal Scale:

- **Definition:** A nominal scale classifies data into distinct categories that have no inherent order or ranking. It's used for labeling or naming variables.
- **Properties:**
 - Categories are mutually exclusive (each item fits into one category only).
 - Categories are exhaustive (all possible options are covered).
 - No order or hierarchy among categories.
 - Data are qualitative and cannot be meaningfully ordered or measured numerically.
- **Example:** Gender (male, female), types of fruit (apple, orange, banana).

Ordinal Scale:

- **Definition:** An ordinal scale classifies data into categories that have a meaningful order or ranking, but the intervals between ranks are not necessarily equal.
- **Properties:**
 - Categories are mutually exclusive.
 - Categories are exhaustive.
 - There is a clear order or ranking among categories.
 - Differences between ranks are not precisely measurable or equal.
- **Example:** Educational level (high school, bachelor's, master's), satisfaction ratings (satisfied, neutral, dissatisfied).

39. Explain communication analysis in research process.

Communication analysis in the research process involves examining how information is exchanged and understood between researchers and participants or among different stakeholders. It focuses on the clarity, accuracy, and effectiveness of communication throughout the study—from designing research instruments to collecting data and reporting findings. In research, communication analysis helps to:

- Ensure questions and instructions are clear and unbiased, avoiding misunderstandings.
- Analyze interactions during interviews or focus groups to capture verbal and non-verbal cues.
- Evaluate how well research findings are conveyed to audiences for better interpretation and application.
- Identify barriers or distortions in communication that might affect data quality.

40. Explain Moderating variable and Intervening variable.

Moderating Variable

A moderating variable is one that influences the strength or direction of the relationship between an independent variable (cause) and a dependent variable (effect). It helps answer “when” or “for whom” a particular effect occurs. For example, the impact of training on employee performance might be stronger for younger employees

than older ones — here, age is the moderator. Understanding moderators enhances a researcher's skill in developing nuanced hypotheses and interpreting complex relationships in data.

Intervening Variable

An intervening variable (also called a mediating variable) explains how or why an independent variable affects a dependent variable. It acts as a link in the causal chain. For example, motivation may mediate the relationship between leadership style (independent variable) and job performance (dependent variable). Identifying intervening variables improves the ability to build explanatory models and deepen understanding of underlying processes in research.

41. Explain Deception and Informed consent.

Deception

Deception in research occurs when participants are intentionally misled or not fully informed about the true purpose or procedures of the study. Sometimes researchers use deception to prevent participants' behavior from being influenced by knowing the study's goals, which might bias results. However, deception raises ethical concerns because it can violate participants' right to make informed decisions and may cause distress or harm. Therefore, its use must be carefully justified, minimized, and followed by a thorough debriefing.

Informed Consent

Informed consent is the process by which researchers provide potential participants with all necessary information about the study—its purpose, procedures, risks, benefits, and their rights—so participants can voluntarily decide whether to participate. It respects individuals' autonomy and protects their welfare. Informed consent must be obtained before participation, and participants should understand they can withdraw at any time without penalty.

42. Define extraneous variable.

An extraneous variable is any variable other than the independent variable that might affect the dependent variable in a study. These variables can introduce unwanted variation or bias, potentially confusing the results. Researchers try to control or eliminate extraneous variables to ensure that the observed effects are truly due to the independent variable, increasing the study's internal validity. For example, in a study on the effect of study time on test scores, factors like sleep quality or test anxiety could be extraneous variables.

43. Explain inter term reliability and halftime reliability.

Inter-Term Reliability

Inter-term reliability (often called inter-rater or inter-observer reliability) refers to the degree of agreement or consistency between different observers or raters measuring the same phenomenon independently. It shows how similarly multiple evaluators assess or score the same data. High inter-term reliability indicates that the measurement is objective and not dependent on who performs the observation.

Halftime Reliability

Halftime reliability (also known as split-half reliability) measures the internal consistency of a test by splitting it into two equal halves (e.g., odd vs. even items) and then correlating the scores from both halves. It assesses whether different parts of the test produce similar results, indicating that the test is reliable throughout. This method helps determine if the test items consistently measure the same construct.

44. What are several ways to state hypothesis?

Several common ways to state a hypothesis in research include:

1. **Null Hypothesis (H_0):** States that there is no effect or no relationship between variables. It serves as the default position to be tested. **Example:** “There is no difference in test scores between males and females.”
2. **Alternative Hypothesis (H_1 or H_a):** States that there is an effect or relationship between variables, opposing the null hypothesis. **Example:** “There is a difference in test scores between males and females.”
3. **Directional Hypothesis:** Specifies the expected direction of the relationship or difference (e.g., increase, decrease, positive, negative). **Example:** “Students who study more will score higher on exams.”
4. **Non-directional Hypothesis:** States that there is a relationship or difference but does not specify the direction. **Example:** “There is a relationship between study time and exam scores.”
5. **Simple Hypothesis:** Predicts a relationship between two variables (one independent and one dependent). **Example:** “Exercise improves mental health.”
6. **Complex Hypothesis:** Predicts relationships between multiple variables or involves more than one independent or dependent variable. **Example:** “Exercise and diet together affect mental health and physical fitness.”

Disclaimer:

For best results, it is advised NOT to rely on this file only. Go through video lectures, handouts and other sources as well.

Regards,

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