GLOSSARY OF FREQUENTLY USED TERMS IN EDUCATIONAL RESEARCH

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This work, "Glossary of Frequently Used Terms in Educational Research" presents definitions and short explanations of around seven hundred frequently used terms in educational research. The terms included here are mainly the terms that are frequently used in research methodology, statistical measurements, statistical procedures and terms that generally relate to educational research. An effort has been made to first identify those terms which are frequently used in contemporary educational research and then presented with simple possible explanations in alphabetical order. The work is composed as a reference book with the intention to assist those who are novices in the field of educational research.

A

Abstract: It is a summary or overview of the main points/aspects of a research study and has a list of the keywords at the end to help the readers in understanding the nature and essence of the study. It usually covers the research gap, research objectives, research design, research instrument, major results, conclusion and recommendations.

Accuracy: It is a characteristic that shows how near/close a value is to the real (actual) value while applying statistical techniques to prove the validity, reliability and generalizability aspects.

Acknowledgement: A section of gratitude in a research study. It is the section where the researcher acknowledges all those who somehow assisted the researcher in the accomplishment of the study.

Action Research: It is a type of qualitative research which is usually conducted by practitioners to improve their practice.

Adjusted R-Squared: It is a modified version of R-squared. It is a measurement of how the predictor variable (independent variable) predicts the outcome variable (dependent variable). Unlike R-squared where all independent variables are considered to affect the result; in adjusted R-squared, only those independent variables are considered which in reality affects the results.

Alpha Level: Also known as Significance Level (.05) is the probability of type I error (rejecting a true null hypothesis).

Alternative Hypothesis (H_a): It is an alternative hypothesis (which states the positive effect of the independent variable on the dependent variable) to the null hypothesis (which states no effect of independent variable on the dependent variable). The alternat hypothesis answers "yes" to your research question.

Analysis of Covariance (ANCOVA): It is an extension of ANOVA which analyze variance in the mean values. Unlikely ANOVA where independent variables are categorical; in ANCOVA the independent variable can be categoric and continuous.

Analysis of Variance (ANOVA): A statistical test that analyzes the significant difference in means of more than two categorical groups and provides information on the relationship between Dependent Variable (DV) and Independent Variables (IV).

Annotated Bibliography: A list of citations/sources on a topic with summaries to show the quality, relevancy and accuracy of the cited sources.

Annotation: It is adding supplementary information to a text or diagram in the form of a comment, explanation or criticism.

Anonymity: It is an ethical condition in a research study which means to keep the personal identity of the subjects anonymous (even to the researcher) while collecting, analyzing and reporting the data.

APA Style: APA stands for American Psychologist Association. It is a style or format of academic scholarly writing and is exercised in citing sources.

Appendix: A part of the research report usually at the end of the study and has supplementary documents/material related to the study. It is not the core part of the main text but provides essential additional documents/materials and helps in understanding the overall picture.

Applicability: It is a characteristic of a research study which indicates the extent to which the results of the study could influence practices.

Approach: It is a plan or procedure of a research study that initiates from broad assumption and extends to data collection procedures/methods, data analysis methods and interpretations.

Argumentative Review: A type of literature review that involves the analysis of previous work to support or return to an already established argument.

Artificial Dichotomy: A dichotomous variable that is created from an interval scaled variable i.e. people ageing below 40 are assigned with the label young and people about 40 are assigned with the label old or score below 50 as fail and score above 50 as pass.

Association: The relationship between variables.

Associational Research: Research that investigates relationships is often referred to as associational research.

Assumption: Refers to anything that is taken for granted rather than tested or checked.

Attitude: A feeling or opinion about something or someone, or a way of behaving that is caused by this.

Attribute: A quality or characteristic that someone or something has.

Attrition: It is when the subject of the study withdraws from the study over time while conducting a longitudinal or panel study.

Authenticity: The quality of being real or true.

Average: It is a single value (Mean, Median, Mode) that represents the middle value of a data set.

Average Treatment Effect (ATE): It is a measure of the mean difference between the units (individuals or other units like classrooms, schools etc.) assigned to the treatment and units assigned to the control.

Axiom: It is a statement which is commonly accepted as truth.

B

Bar Chart: A type of chart that visually shows the frequencies/percentages of the various categories of a variable to describe and compare.

Basic Research: This is concerned with clarifying the underlying processes, with the hypothesis usually expressed as a theory.

Bayesian Statistics: A general approach to population characteristics estimation which uses the information on the previous distribution of the characteristics with the new evidence.

Bell-Shaped Curve: A bell-shaped curve represents normal distribution that is even about the mean and extends infinitely in both direction. It is called a bell-shaped curve because of its shape like a bell. The two halves of data points lie on the right and lift sides of the mean score.

Beta Level: A probability of making a Type II error.

Between-Group Variance: A measure of the means difference of different groups.

Between-Subject Design: In experimental design when different subject groups are used for each level of the variable.

Bias: A personal opinion that influences judgment.

Bibliography: A list of the books and articles that have been used by someone when writing a particular book or article.

Bimodal Distribution: A distribution in which two values/scores occur most frequently.

Biography: An account of someone's life written by someone else.

Blueprint: An early plan or design which explains how something might be achieved.

Bootstrapping: A method of variance estimation in surveys which involves subsampling from the initial sample.

Budget: An estimation of income and expenditures for a defined period.

C

Case study: A type of qualitative research which involves an in-depth and detailed investigation of a single case.

Categorical Data: A type of qualitative data that exists as categories/labels and is non-numeric i.e. gender, marital status and so on.

Casual Analysis: Analysis that investigates cause and effect relationship between variables.

Causal-Comparative Research: A type of research that involves comparing known groups that have had different experiences to determine possible causes or consequences of a group membership.

Census: A situation when an entire population is surveyed instead of surveying the sample of a target population.

Central Tendency: A measure that describes the central/typical/average characteristic of a data set i.e. mean, median and mode.

Characteristics: A typical noticeable quality of someone or something.

Chart: A drawing which shows information in a simple way, often using lines and curves to show amounts.

Chi-Square Test: A statistical test used to see the association/relationship between non-numeric/categorical variables.

CIJE: An abbreviation of Current Index to Journals in Education.

Cite/Citation: To mention the source as proof for a piece of information in research work.

Close-Ended Question: Also termed as closed-form item. This is a question which can be answered with one word such as yes/no or it is usually a question that is provided with a list of responses to select from.

Cluster Sampling: A type of probabilistic/quantitative sampling in which the participants are divided into groups/clusters and then randomly select groups/clusters from them.

Codebook: A record of the structure, content and layout of a data set such as the user's manual and user's guide.

Codes: A numeric value that represents different levels of a variable to facilitate analysis in SPSS. For example, assigning 1 for strongly disagree, 2 for disagree and so on.

Coding: The process of assigning numeric values to different levels of a variable to facilitate analysis in SPSS.

Coefficient: A value, in mathematics, that appears in front of and multiplies another value.

Coefficient of Determination: A coefficient that ranges 0-1 and indicates the goodness of fit of a regression model.

Coherence: When the parts of something fit together in naturally or sensibly.

Cohort: A group of individuals having shared demographic experience and are studied through time. For example, a group of people having the same year of birth makes a birth cohort.

Cohort Study: A longitudinal survey design that involves the identification of a particular subpopulation based on some specific characteristics (For example selecting those individuals who are 18 years old by 2022) and then studying the subpopulation over time.

Coincide: To happen at or near the same time.

Comparability: The quality that can be achieved by evaluating two or more things for their similarity or differences.

Completion Rate: Also called a response rate, refers to the answered rate of participants in a survey.

Conceive: To imagine something.

Concept: A principle or idea.

Concept Formation: Process by which a person learns to sort specific experiences into general rules or classes.

Conceptual: Based on ideas or principles.

Conclusion: The final part of something, when something is arranged or agreed upon formally, is the opinion you have after considering all the information about something.

Conduct: To organize and perform a particular activity.

Confidence Interval: A range of estimated values that best guess an actual population's value.

Confidence Level: It is the percentage of times when the actual population value will be included in the confidence interval. For example, when the confidence level is taken as .95, it means that the researcher is 95% sure/confident that the true population value is in the confidence interval.

Confidentiality: It is an ethical condition in research where the researcher knows the personal identity of the subjects while collecting, analyzing and reporting the data but stern steps are taken to keep it protected from others.

Confine: To limit an activity, person or problem in some way.

Confirm: To make certain.

Consequence: A result of a particular action or situation.

Considerable: Large or of noticeable importance.

Consideration: Thinking about something carefully.

Consistency: When answers do not contain any logical contradiction while answering a set of questions.

Consistent: Always behaving or happening in a similar, especially positive way.

Constant: A value is called constant when it stays the same during all units of analysis.

Constitutive Definition: To use what is often referred to as the dictionary approach.

Construct: A theoretical creation, concept, idea or imaginary situation.

Construct Validity: Refers to the degree to which an instrument measure the researcher's hoped measure of a theoretical concept.

Contemporary: Current, existing or happening now.

Context: The situation within which something exists or happens.

Context Effects: When the research environment brings about change in the dependent variable.

Contextual: Related to the context of something.

Contingency: Something that might happen in the future, usually causing problems or making further arrangements necessary.

Contingency Question: The follow-up question is called the contingency question.

Continuous Variable: A variable that can take any value within a range.

Contradict: The opposite of what someone else has said, or of a fact or statement that is different from another fact or statement.

Contrary: The opposite.

Contribution: Something that you do or give to help produce or achieve something together with other people, or to help make something successful.

Control: To keep the research condition constant to isolate the effect of the experimental condition.

Control Group: A control group is a group that does not get treatment while conducting an experimental study.

Control Variable: It is a variable that usually is not of interest but it interferes in the statistical analysis.

Controversy: A lot of disagreement or argument about something, usually because it affects or is important to many people.

Convenience Sampling: A non-probabilistic strategy of sampling that involves taking those participants as a sample who are easily/conveniently available.

Convenient: Suitable for your purposes and needs and causing the least difficulty.

Convention: A usual or accepted way of behaving, especially in social situations, often following an old way of thinking or a custom in one particular society.

Conventional: Traditional and ordinary.

Conversely: On the other hand, on the other way.

Convinced: Certain.

Cooperate: To act or work together for a particular purpose, or to be helpful by doing what someone asks you to do.

Coordination: The act of making all the people involved in a plan or activity work together in a plan or activity.

Coppersmith Self-Esteem Inventory: A 50-item scale, to measure global self-esteem.

Copyright: Legal right to reproduce an artistic or literary creation.

Core: The basic and most important part of something.

Correlation: A connection between two or more things, in which one of them causes or influences the other.

Correlation Research: Involves studying relationships among variables within a single group and frequently suggests the possibility of cause and effect.

Correspond: To match or be similar or equal.

Counselling: The job or process of listening to someone and giving them advice about their problems.

Cover Letter: An introductory document that includes the personal introduction or a document that is sent to potential respondents explaining the purpose of the survey questionnaire.

Credibility: Refers to the reliability and validity of an instrument or even the overall results of a study.

Criteria: A standard by which you judge, decide about or deal with something.

Critic: Someone who provides scholarly opinion on the research work.

Criticism: An evaluative or corrective exercise on the research work.

Cross Break Table: Also termed as a contingency table is a table that shows all combinations of two or more categorical variables and portrays the relationship (if any) between the variables.

Cross-Check: To make sure something is correct and true by using a different method.

Cross-Sectional Survey: Collect information at one point in time from a sample that has been drawn from a predetermined population.

Cross-Tabulation: A method showing a relationship between two categorical variables.

Crossover Design: Also termed as switch over design or change over design which is an experimental design type that involves a sequence of an experimental treatments for each research subject over several time periods.

Culture: The sum of a social group's observable patterns of behaviour or their customs, beliefs and knowledge.

Cumulatively: An increase in the quantity/degree/force by successive additions.

Curvilinear: A statistical relationship between two variables showing a curve when plotted on a graph.

Cycle: A group of events which happen in a particular order, one following the other, and which are often repeated.

D

Data: Refers to facts in the form of numbers, words, measurements, observations or just descriptions of things. Information, especially facts or numbers is collected through several ways like surveys, interviews and observations to be processed/examined and used to help decision-making.

Data Analysis: This is a process of organizing, inspecting, interpreting, and modelling data to discover useful information/findings and conclusions and extend suggestions.

Database: A large amount of information is stored in a computer system in such a way that it can be easily looked at or changed.

Data Collection: This is the process of gathering/recording information on targeted variables in an established systematic fashion in a research study.

Data Imputation: The filling of non-responded missing values in a survey.

Data Reduction: A process of reducing data (numerical or alphabetical) into a corrected, organized and simplified form to reduce large data into meaningful parts.

Decline: To gradually become less, worse, or lower.

Deduction: The process of reasoning directing from general to specific or when a decision or answer is reached by thinking about the known facts.

Deductive: Involving inferences from general principles.

Deductive Method: The method of study that initiates with a theory and the formation of a hypothesis that is tested and eventually leads to the confirmation of the original theory.

Defensible Conclusion: Conclusion that is not contradictory to the data and that follows logically from the data.

Degree of Freedom: In a sample, the number of independent units of information are used in the estimation of a parameter.

Demographic: Statistical characteristics of a population.

Demographic Question: Question asking information on the respondent's background (age, occupation, etc.)

Demonstrate: To show; to make clear.

Denote: To represent something.

Deny: To refute/reject something.

Dependent Variable (DV): Also termed as criterion or outcome variable, is a variable affected or expected to be affected by the independent variable or it is a variable that is dependent on other factors.

Descriptive Statistics: A type of statistics that is used to summarize the data descriptively. It generally involves measuring the average value (mean, mode, median) and measure of dispersion (variance, standard deviation, range).

Descriptor: Term used to locate sources during a computer search of the literature.

Detect: To notice something that is partly hidden or not clear, or to discover something, especially using a special method.

Deviation: Change or variation.

Dichotomous Variable: Also termed as a dichotomy is a variable that has only two possible categories/values i.e. yes/no, male/female, alive/dead and so on.

Diffusion: Spread out and not directed in one place.

Direct Effect: When a variable directly affects another without any intervening variable(s).

Direct Observation: A type of observation in which data is obtained through close visual inspection in a natural setting.

Discovery: The process of finding information, especially for the first time.

Discrete Variable: A variable that assumes only finite numbers/values like the number of students, number of cars, number of computers etc.

Discrimination: Treating research subjects and even a research result differently, especially in a worse and personally inclined way.

Dispersion: Refers to the spread of variables in statistics which is described by range, variance, standard deviation and skew.

Dissertation: A long piece of writing (research work) on a particular subject, accomplished as a part of a course at college or university especially to earn a PhD.

Distorted: Change from the usual, original, natural or intended form.

Distortion: Bending, twisting and curving.

Distribution: The frequency by which different values of the variable happen in a sample/population.

Divergent: Different or opposite.

Diversity: When many different types of things or people are included in something.

Document: Any written or printed material.

Domain: An area of interest or an area over which a person has control.

Dominant: More important, strong or noticeable than anything else of the same type.

Double-Barreled Question: When two separate ideas are erroneously included in one question of a survey.

Double Blind Experiment: When the subjects and even the experimenter are not aware of the treatment and control groups in a research design.

Dummy Coding: A strategy in coding to change categorical variables into a series of dichotomy variables/dummy variables having values 0 or 1. They are used in regression analysis for measuring categorical variables' effects on the outcome in a situation where the categorical variable has more than two values.

Dummy Variable: In statistical analysis, categorical variables are assigned values 0 or 1, called dummy variables.

Dynamic Changes: Changes occur regularly and suddenly.

Dynamic: Having a lot of ideas and enthusiasm; energetic and forceful.

E

ECER: Exceptional Child Education Resources, is a bibliographic database produced by the council for exceptional children.

Ecological Fallacy: False conclusion made from collected data by assuming that one can infer something about an individual.

Edition: A particular form in which a book, magazine or newspaper is published.

Educators: Teacher, one who imparts knowledge, one who instructs.

Effect Size: The measure of effect strength of the independent/predictor variable on the dependent/outcome variable. It is the measure of the magnitude or size of the difference between two or more groups.

Electronic Journals: Also known as e-journals are scholarly journals or intellectual magazines that can be accessed via electronic transmission.

Elicit: To get or produce something, especially information or a reaction.

Empirical: Based on what is experienced or seen rather than on theory.

Empirical Gap: A type of research gap that exists in previous research studies. The findings of the previous research are evaluated and empirically tested.

Endogeneity: An assumption threat that the exogenous/independent variable is the cause of the endogenous/dependent variable.

Epistemology: Philosophy or a way of understanding that is about the study of how we know things that we know. It works as a guiding philosophy for research methodology.

Equation: A mathematical statement in which the relationship of various amounts is shown using mathematical symbols.

Equipment: A set of necessary tools for a particular purpose.

Equivalent: Having the same amount, value, purpose, qualities, etc.

Equivalent-Forms Method: Two tests are identical in every way except for the actual items included.

ERIC (EBSCO): Education Resource Information Centre is an authoritative database that references articles in more than 750 professional journals, thousands of unpublished research reports, conference papers, and curriculum guides in all areas of education.

Error: In statistical analysis when the actual observed data value differs from the estimated/predicted data value.

Error of Measurement: Inconsistency of individual scores on the same instrument.

Estimate: To guess the cost, size, value, etc. of something.

Estimation: The process by which sample data is used to indicate in a population the value of an unknown quantity.

Ethical: Relating to beliefs about what is morally right and wrong.

Ethical Research: The term ethics refers to questions of right and wrong, when researchers think about ethics, they must ask themselves if it is right to conduct a particular study or carry out certain procedures.

Ethnicity: A person belonging to an ethnic group.

Ethnographic Research: A type of qualitative research that concentrates on documenting or portraying the everyday experiences of people, using observation and interviews.

Ethnographic Decision Models: A type of qualitative method that study behaviour under specific conditions.

Ethnographic Interviewing: A data collection method that contains open-ended questions and involves face-to-face interviews to collect in-depth data from the subject of an ethnographic study.

Ethnography: A field method that involves a scientific description of the culture or social life incidences of a society.

Evaluation: Assessment, analysis or appraisal.

Evaluation Research: A type of research that involves a systematic attempt to assess the quality or effectiveness of a research subject/issue.

Evidence Gap: A type of research gap that usually occurs when a widely accepted conclusion is opposed by new research findings.

Exhibit: To show something publicly.

Exogeneity: The opposite of endogeneity, a condition when something remains external in the process of a study.

Experimental Design: A research design that involves manipulation, control and randomization of variables to see the cause and effect relationship between independent and dependent variables.

Experimental Group: The group in a research study that receives the treatment or method of special interest.

Experimental Research: A research study that involves manipulating conditions and studying effects or a research study in which one or more independent variables are systematically varied by the researcher to determine the effects of this variation.

Experimental Variable: The variable that is manipulated in an intervention study by the researcher.

Explanatory Design: A study in which quantitative data are collected first and further clarified with qualitative data.

Exploratory Design: A study in which qualitative data are collected first and finding are tested with subsequent quantitative data.

Exploratory Study: When there is no or few studies available or limited theories available to refer to, an exploratory study is conducted to explore a research problem/question.

Exposure: When someone experiences something or is affected by it because they are in a particular situation or place.

External Criticism: Evaluation of the genuineness of a document in historical research.

External Validity: The degree to which results are generalizable, or applicable to groups and environments outside the research.

Extraneous Variable: A variable that needs to be controlled as it comes in the way and affects the relationship of independent and dependent variables.

Extrapolation: To project beyond the range of known data points to predict the value of unknown data points.

F

Face to Face: Directly, meeting someone in the same place.

Face Validity: Refers to the extent a survey/test appears to measure what the researcher claim to measure.

Facilitate: To make something possible or easier.

Fact: Something which is known to have happened or to exist, especially something for which proof exists, or about which there is information.

Factor: A fact or situation which influences the result of something.

Factor Analysis: A statistical method reducing a set of variables to a smaller number of factors that are more understandable in multivariate analysis.

Feasible: Able to be carried out, achievable; possible, doable.

Feature: A typical quality or an important part of something.

Feeling Question: Question researchers ask to find out how people feel about things.

Field Diary: A personal statement of a researcher's opinions about people and events he or she comes in contact with during research.

Field Experiments: An experimental study carried out in real-life settings instead of a laboratory.

Field Notes: The notes researchers take about what they observe/think in the research field.

Field Research: Research that is carried out in a place where the subjects of the research live.

Field Work: Investigating research subjects in their own community/area.

Findings: A piece of information that is discovered during the systematic study of a problem, situation or object.

Flexibility: Adopting and modifying.

Flexible Schedule: Schedule that can be changed or changed easily according to the situation.

Focus Group: A qualitative data collection strategy used to conduct group interviews with a limited number of participants all at one time to collect ideas on a topic.

Forecasting: Prediction, estimation.

Formative Evaluations: Evaluation intended to improve the object being evaluated.

Framework: A simplified description of a complex entity or process.

Frequency Distribution: Refers to the frequency of variable values that happen in a sample/population.

G

Gender: The physical and/or social condition of being male or female

Generalizability: The extent to which the results/conclusions of a research study based on the sample can be applied to the population as a whole.

General Reference Tool: Source that researcher uses to identify more specific references (e.g. indexes, abstracts).

General Reference Tools: These are sources a researcher consults to locate other sources.

Generalized Linear Mixed Model (GLMM): An extension of Generalized Linear Models (GLMs) that involves predictor random effects in addition to fixed effects.

Generalized Linear Models (GLMs): A class of statistical models that involves analysis of variance, logistic regression, linear regression etc. The use of these models is for independent variable effect analysis with different distributions.

Genesis: The origin of something when it is begun or starts to exist.

Gini Coefficient: A measure of dispersion/inequality of values in a group and greater the coefficient indicates greater dispersion.

Geographical Information System (GIS): A computer system that helps in assembling, storing, manipulating and showing geographically referenced information.

Glean: To collect information in small amounts and often with difficulty

Google Scholar: A web search engine that limits its searches to only academic journal articles and provides a simple way to do a broad search for scholarly literature, including peer-reviewed papers, theses, books, abstracts, and articles.

Gorge: To make an illegal copies of something to deceive.

Grounded Theory: A qualitative research that involves a systematic methodology in the social sciences involving the construction of theory through the inductive analysis of data.

Guidelines: Information intended to advise people on how something should be done or what something should be.

H

Hawthorne Effect: Refers to research subjects' change of behaviour while they are observed/studied. They do this as a response to being observed.

Heterogeneity: Refers to the amount of similarity among cases based on a specific characteristic.

Heteroskedastic: Refers to the distribution characterized by a non-constant/changing variance/standard deviation.

Hierarchical: Classifying and creating an order.

Hierarchical Model: A type of linear regression model in use when the data is organized/analyzed in a tree-shape structure.

Histogram: Refers to a graph that visually depicts data and shows the frequency of each value of a variable.

Historical Research: A form of qualitative research that involves studying some aspect of the past or it studies an issue in the historical context to understand its impact or relevance in the present time.

Historical Review: A type of literature review that involves the researcher investigating the evaluation of the matter while going into the historical context.

Holistic: Dealing with or treating the whole of something or someone and not just a part.

Homogenous: Similar and the same.

Hypothesis: A hypothesis is a prediction statement that predicts the relationship between the casual/independent variable on outcome/dependent variable.

Hypothetical: Imagined or suggested but not necessarily real or true.

I

Identical: The same or very similar.

Ill-Conceived: Badly planned and unwise.

Illegible: Impossible or difficult to read, unclear, undecipherable.

Illusion: An idea or belief which is not true.

Illustrative: Helping to explain or prove something.

Impact: Effect, Influence.

Impact Evaluations: Which are broader and attempt to assess the overall effects of the program or technology as a whole.

Implement: To put a plan into operation.

Implicit: Suggested but not communicated directly.

Imply: To communicate an idea or feeling without saying it directly.

Imputed Response: A response in the survey that is missing and is filled by the researcher.

Incentive: Something which encourages a person to do something.

Inclination: A preference or tendency, or a feeling that makes a person want to do something.

Incompatible: Not able to exist or work with another person or thing because of basic differences.

Independence: When two or more variables do not have any sort of relationship.

Independent Variable (IV): It is a variable that is controlled or its value is changed by the researcher while experimenting. It is not affected or changed by other variables and causes an effect on the dependent variable.

In-depth Interviewing: A data collection method that involves open-ended interview questions to collect data with great details.

Index: A general reference that gives the author, title, and place of publication of a published work.

Index Variable: A variable which is summed composite of other variables assumed to reflect the same construct.

Indicate: To show, point or make clear in another way.

Indicator: A measure/observation that represents the attribute/properties of a phenomenon.

Indicator Variable: A variable that identifies the presence or absence of a characteristic.

Indirect Effect: When one variable indirectly affects another through an intervening variable.

Induce: To cause something to happen.

Inductive: Of reasoning; proceeding from particular facts to a general conclusion, using a particular set of facts or ideas to form a general principle.

Inductive Approach to Data Analysis: A qualitative data analysis approach that involves developing of dominant themes in the data to develop a theory or model.

Inductive Method: A qualitative method that involves developing patterns from observed/measured data to formulate a hypothesis and eventually construct theories.

Indulge: To allow yourself or another person to have something enjoyable, especially more than is good for you.

Inevitably: In a way that cannot be avoided.

Infer: To form an opinion or guess that something is true because of the information that you have.

Informal Interview: A type of qualitative data collection that involves data collection in a way like an ordinary conversation.

Informed Consent: An agreement of the research subjects for providing the research-related data and showing agreement for using the data for that particular research purpose.

Ingenious: Very clever and skillful, or of a thing cleverly made or planned and involving new ideas and methods.

Inherent: Existing as a natural or basic part of something.

Inquiry: Exploration, questioning, investigation, a search for knowledge.

Insight: A clear, deep and sometimes sudden understanding of a complicated problem or situation.

Inspection: When you look at something carefully, or an official visit to a building or organization to check that everything is correct and legal.

Instance: A particular situation, event or fact, especially an example of something that happens generally.

Instrument: Any device for systematically collecting data, such as a questionnaire, interview or observations.

Instrument Error: An error that is dealing with the instrument itself due to ambiguous wording or containing questions that are difficult to answer.

Instrument Decay: This can occur in interview surreys if the interviewers get tired or are rushed.

Integrate: To mix with and join a society or a group of people, to combine two or more things to become more effective.

Integrative Review: A type of literature review that involves synthesizing the second piece of information which is helpful for your thesis.

Intensity: The quality of being felt strongly or having a very strong effect.

Interact: To communicate with or react to.

Interaction Effect: Refers to the situation when an additional variable comes to change the effect of an independent variable on the dependent variable.

Intercept: Also termed as Y-intercept or constant term is a regression analysis that refers to the dependent/predicted variable value when all the independent/x variables are zero. It is the point where Y-axis is crossed by the regression line.

Internal Validity: The degree to which observed differences on the dependent variable are directly related to the independent variable, not to some other (uncontrolled) variable.

Interpretation: An explanation or opinion of what something means.

Inter-Rater Reliability: Refers to the measure of the consistency of ratings/values assigned to observed behaviour. It is the percentage of agreement on the rated/observed behavior.

Interrelated: Refers to how two or more things or people are connected and affect one another.

Interval: A period between two events or times, or the space between two points, the value between two items.

Interval Scale: Refers to a scale of measurement where both order and the exact differences between the values (value between each item) can be known.

Interval Variable: Refers to the variable where the zero point is arbitrary but the distance between units is the same.

Intervening Variable: Also termed a mediating variable is a variable that effect/helps in explaining the independent and dependent variable relationship.

Intervention: For research purposes when a situation is introduced to affect the outcome/dependent variable.

Intervention Study: A general type of research in which variables are manipulated to study the effect on one or more dependent variables.

Interview: A form of data collection in which individuals or groups are questioned orally.

Interviewee: The person who answers the questions during an interview.

Interviewer Error: A type of error caused by an interviewer mistakes i.e. asking wrong questions, asking questions in the wrong order and so on. This might be intentional or unintentional.

Interview Protocol: A data-gathering instrument or tool used in an interview.

Interview Schedule: A set of questions asked by an interviewer.

Investigate: To examine a problem, statement, etc. carefully, especially to discover the truth.

Investigation: The act or process of examining a crime, problem, statement, etc. carefully, especially to discover the truth.

J

Jackknife Technique: A method that involves resampling to estimate the parameters like mean and percentage of a population and to measure the uncertainty in these estimates.

Jeopardize: To put something such as a plan or system in danger of being harmed or damaged.

JSTOR: An organization founded in 1995 to promote global scholarship using its digital archives which contain the full text of more than 169 national and international journals.

Justification: A good reason or explanation for something

Justification of a Study: A rationale statement in which a researcher indicates why the study is important to conduct.

Justify: To give or to be a good reason.

K

Key Event: Event that provides valuable data, especially in an ethnographic study.

Keywords: The main words/terms/phrases in a research study that works as an essence of a study and help in search engines to find the relevant contents.

Knowledge Gap: A type of research gap that occur in the previous studies i.e. knowledge is missing in the field or a research study yields different results from the expected results.

Kurtosis: A measure that indicates how distribution is outlier-prone. It is 0 for normal distribution. However, if it is different from 0 then it is either positive kurtosis (more extreme outlier) or negative kurtosis (outliers that are less extreme).

L

Language Multimodality: Communication practices in terms of textual, aural, linguistic, spatial, and visual resources.

Latent Variable: A variable that is not observed directly and is inferred from other variables that have been observed or measured.

Least Squares: A method used for regression equation calculation that involves minimizing the difference between observed and estimated data points.

Level of Significance: The probability that a discrepancy between a sample statistic and a specified population parameter is due to sampling error, or chance.

Library Catalog: This is a register of all bibliographic items found in a library or group of libraries, such as a network of libraries at several locations.

Life History: A portrayal of a person's entire life.

Likert Scale: A rating scale that is used to measure opinions, attitudes or values of a subject. The participants are asked to select the level of agreement or disagreement on several statements.

Limited Dependent Variable: A variable that is limited/restricted to some possible range of values only. For example, a variable that only has two categories (dichotomy).

Linear Regression: A statistical technique that is used to find a linear relationship between one or more than one categorical predictor/independent variable and an outcome/dependent variable.

Literature Review: A systematic method of identifying, evaluating and interpreting the existing/recorded body of work. It involves exploring, analyzing and synthesizing published work.

Location Threat: A possibility that the results of a study are because of the effects of the location in which it was conducted.

Logic: A particular way of thinking, especially one which is reasonable and based on good judgment.

Logistic Regression: Also termed logit regression is a form of regression that involve analysis of predictor and dichotomous variables relationship.

Logit Model: A form of regression that involves the analysis of predictor and categorical/outcome variable relationships.

Longitudinal Survey: A type of survey in which data is collected at different points in time and involves studying changes over time.

M

Main Effect: Refers to the effect of the independent/predictor variable on the dependent/outcome variable.

Maintenance: The work needed to keep something in a good and workable condition.

Major: Main, key or most important.

Manipulation: Treatment, handling, the management or controlling.

Manual: Guide, handbook or physical.

Margin of Error: The extent to which deviation from a target/specific value is accepted/permitted.

Marginal: Very small in amount or effect.

Matched Samples: When the members/subjects of two samples are paired/matched on some specific attributes. It is also termed repeated measure as it sometimes involves the measure of the same attribute/variable twice on one subject under different circumstances.

Maxima: The points where the values of function are greater compared to other surrounding points,.

Mean: A measure of central tendency (in descriptive statistics) which specifically represents the average value of a distribution. For example in a data set i.e. 31, 32, 34, 36, 37, 40, 42 and 44; the mean is 37.

Measurement Error: Error that occurs while measuring the values in a survey resulting in a difference between the true/actual value and measured value.

Measure of Association: Refers to the measure of strength and nature of variables' relationship.

Median: A measure of central tendency in descriptive statistics that specifically describes the value which is the middle one in a set of values. For example in a data set i.e. 31, 32, 34, 36, 37, 40, 42, 43 and 44; the median is 37.

Member Checking: The exercise of restating and summarizing the overall discussion during open-ended interviews to double confirm information already received.

Meta-Analysis: A statistical procedure for combining the results of several studies on the same topic. It is an attempt to reduce the limitations of individual studies by trying to locate all of the studies on a particular topic and then using statistical means to synthesize the results of these studies.

Metaphysical: Abstract, philosophical, theoretical or relating to metaphysics.

Method: A particular way of doing something.

Methodological Gap: A type of research gap that happens in the variation of the research methods and helps in resulting new insights.

Methodology: A strategy/theory that explains and governs principles for conducting a systematic study i.e. collecting the data, analyzing the data, interpreting the data and drawing conclusions. It also refers to the study of methods in general.

Meticulous: Very careful and with great attention to every detail.

Meticulously: Taking great care to get every detail correct; working thoroughly and with precision.

Minima: The points where the value of the function is less compared to other surrounding points.

Misconception: An idea which is wrong because it has been based on a failure to understand a situation.

Misleading: Causing someone to believe something that is not true.

Missing Data: The unrecorded values in a data set.

Missing Data Imputation: Refers to filling in the missing values that have remained unanswered in a survey.

Mitigate: To make something less harmful, less unpleasant or less bad.

Mixed-Methods: Sometimes researchers will use both qualitative and quantitative approaches in the same study called mixed-methods. Researchers prefer to use this method to have a depth of understanding of a topic.

Mode: A measure of central tendency (in descriptive statistics) that specifically identify the value that most frequently occurs in the data set. For example in a data i.e. 32, 33, 32, 36, 32, 34, 32, 35 and 37; the mode is 32.

Moderating Variable: Also termed as a moderated variable is a variable that affects the direction/strength of dependent and independent variables' relationship.

Modification: A change to something, usually to improve it.

Multi Choice Questions (MCQs): Questions that are provided with multi (more than one) answers to choose from.

Multilevel Data: Refers to the data that is organized at more than one level.

Multinominal Distribution: Refers to the distribution that occurs when a response variable is naturally categorical.

Multiple Regression (Linear): A regression technique to investigate the linear relationships between a dependent/outcome variable and several independent/predictor variables.

Multi-Site Trial: Refers to the experiments that are conducted at multiple sites and involve several research organizations to study larger samples.

Multi-Stage Sampling: A probability sampling technique that involves sampling in several stages in situations when sampling at one frame is not available.

Multiplicity: A large number or wide range of something.

Multivariate Analysis of Variance (MANOVA): An extension of Analysis of Variance (ANOVA) which is used to measure group differences on several dependent variables when the number of dependent/outcome variables are two or more than two.

Mutually Exclusive: Refers to a variable/event/condition that comes under only one category and cannot be placed in any other category.

N

Narrative Research: A type of qualitative research that studies individual experiences and explore the identities of individuals and how they see themselves. They are conducted to explore how people create meaning in their lives.

Natural Dichotomy: A type of dichotomous variable that naturally have only two possible states i.e. gender, marital status and so on.

Natural Experiment: Refers to an empirical study in which participants/subjects are sorted into treatment and control groups by nature i.e. by events/conditions that were not controlled by the researcher.

NCES: National Center for Education Statistics, the primary federal entity for collecting and analyzing data related to education in the U.S.

Neutral: Unbiased, impartial, disinterested.

Nominal Data: A type of qualitative data that refers to data that is in the form of names/categories/labels and does not have implicit/natural value or rank. For example the name for colors i.e. black, red, green.

Nominal Scale: A scale of measurement that works only for identification purposes as it only provides information on the names/labels/categories. It is the coldest and weakest level of measurement among the four scales i.e. nominal, ordinal, interval, and ratio scales.

Nonlinear Models: Refers to a model that describes nonlinear relationships (characterized by one or more curves) between dependent and independent variables.

Nonparametric Statistics: Refers to the group of statistical methods that do not involve complex assumptions on the distribution of the data as they are used to analyze nominal or ordinal/ranked data. The chi-square test is an example which does not require data normal distribution.

Non-Response: In almost all surveys, some members of the sample will not respond, this is referred to as nonresponse.

Nonresponse Error: Refers to the type of error that is resulted from the nonresponse of a portion of the sample with particular characteristics in a survey.

Non-sampling Error: Refers to errors that are not associated with the sampling and occur in other areas at any phase of the research study like planning, designing, data collection, data processing and so on.

Nonsignificant Result: Refers to the statistical results that fail to provide enough evidence to conclude that the independent/predictor variable has an impact on the dependent/outcome variable.

Norm: An accepted standard or a way of behaving or doing things that most people agree with.

Normal Curve: Refers to the bell-shaped curve that is shaped by the plotting of normal distribution.

Normal Distribution: Refers to the distribution of the frequency of the data points which proposes that randomly selected members of the population will fall in the middle of the distribution and will form a bell shape. In a normal distribution, the two halves of the bell-shape/data points occur one on each side of the mean/median.

Notion: Belief or idea.

NSSE: National Society for the Study of Education.

Null Hypothesis (H_0): It is a hypothesis which claims that there is no effect of the independent variable on the dependent variable. It answers "No" to your research question.

O

Objective: Something the research/researcher plan to achieve.

Observation Unit: The actual unit that is observed in the study to measure something about it.

Observer Expectation: The effect that an observer's prior information can have on observational data.

Obtain: To get something.

Odds Ratio: Refers to the probability expression of having a response or experience to the odds of not having it.

Omitted Variable Bias: Refers to a form of research bias that is caused by the absence of a key variable in the research design and so affects the results.

Omitted Variable Sensitivity Analysis: Refers to the analysis of omitted variable sensitivity to assess the effect of the absence of one or more variables on the relationship between the independent/X variable and dependent/outcome/Y variable.

One Way ANOVA: A type of ANOVA that see the difference in the means of more than two groups.

Open Ended Data: Refers to the data that is obtained through open-ended questions.

Open Ended Question: A question giving the responder complete freedom of response.

Operational Definition: Defining a term by stating/explaining what it means in that specific research context.

Opinion: A thought or belief about something or someone.

Opinion Question: Question a researcher asks to find out what people opine on a topic.

Oppose: To disagree with something or someone.

Optimal Matching: Matching refers to evaluating the effects of the intervention on the subject who received and those who have not received the treatment. Optimal matching refers to the global matching technique that looks to minimize the difference between matched subjects.

Option: One thing which can be chosen from a set of possibilities, or the freedom to make a choice.

Ordinal Data: A form of data that is categorical but at the same time can be ordered/ranked too.

Ordinal Scale: A scale of measurement that involves the classification of data into mutually exclusive categories of data having the characteristics to be ranked and ordered. It is the second level of measurement among the four scales i.e. nominal, ordinal, interval, and ratio scales.

Orientation: The particular preferences, tendencies, beliefs or opinions that a person has.

Ory: Plan, idea, story or consensus.

Outcome Evaluation: Evaluation that investigates whether program or technology appeared to have caused demonstrable effects on specifically defined target outcomes.

Outcomes: Refers to the measured attitudes, behaviors or other characteristics of the subjects that a research study tries to explain.

Outlier: Refers to the observation/value in a data set that is much different than the rest of the observations/values in the data set. They are usually very larger or smaller than the rest of the data points.

Overlap: To cover something partly by going over its edge; to cover part of the same space.

Oversampling: Refers to the sampling process in which based on a particular characteristic a large proportion of the participants/subjects are taken as a sample.

P

Paired Comparison Method: Refers to a research design in which the scores are obtained based on the subject rating of pairs of items. In this, the subjects are provided with binary items and are asked to choose the item which they prefer or is more applicable to them.

Paired T-Test: Also termed as dependent/related/within-subject sample t-test. It is a type of t-test that compares the means of two conditions in which the same subjects participated while conducting the study. A common example is a pretest and posttest where the means of two tests (pretest and posttest) are compared to the same sample.

Panel Study: A longitudinal design in which the same random sample (same group of individuals/panel) is measured at different points in time. The researcher surveys the same sample of individuals at two or more points during the survey.

Paper: This is the short name for a research paper also called scholarly article is a mini report of educational research which can be published in academic journals after going through a peer review process.

Paradigm: A research paradigm refers to the philosophical framework that works as a base for a research study. It involves beliefs and understanding that help in guiding research work theories and practices.

Parameter: This is a statistical term that refers to the characteristics of a population. A set of facts or a fixed limit which establishes or limits how something can or must happen or be done.

Participants: Individuals/subjects who take part and provide data in a research study.

Participant Observations: Observations in which the observer work both as an observer and as a participant to observe and understand the setting more naturally from the perspective of a participant.

Participatory Action Research (PAR): This is a form of action research in which stakeholders take part as equal partners.

Path Analysis: Refers to the analysis that explicitly investigates the cause.

Perceive: To come to an opinion about something, or have a belief about something.

Percentage: A proportion times a hundred.

Percentile: The percent of observations in a sample that have a value below a given score.

Percentile Rank: An index of relative position indicate the percentage of scores that fall at or below a given score.

Perception: A belief or opinion, often held by many people and based on how things seem.

Perpetuate: To cause something to continue.

Persistent: Lasting for a long time or difficult to get rid of.

Perspective: Particular way of considering something.

Pertain: To be connected with a particular subject, event or situation.

Pertinent: Relating directly to the subject being considered.

Peruse: Study attentively.

Phenomena: Something that exists and can be seen, felt, tasted, etc., especially something which is unusual or interesting.

Philosophy: The use of reason in understanding such things as the nature of reality and existence, the use and limits of knowledge and principles that govern and influence moral judgment.

Pie Chart: A graphic method of displaying the breakdown of data into categories.

Pile Sorting: When in a specific domain, judgments of similarity among items are produced through a task.

Pilot Study: A small-scale study administered before conducting an actual study, its purpose is to reveal defects in the research plan.

Plagiarism: Misrepresenting another's work as one's own.

Plethora: A very large amount of something, especially a larger amount than you need, want or can deal with.

Point Estimate: Refers to the statistic calculation that represents an estimate of some particular feature of the whole population such as the mean of the sample which is the point estimate of the population mean.

Poisson Regression: Refers to a form of regression that involves predicting/modeling outcomes/Y variable that is numerical counts.

Policy: A set of ideas or a plan of what to do in particular situations that have been agreed officially by a group of people.

Population: This is generally a large collection of a clearly defined group of individuals/organizations/objects that is the main focus of a scientific query. It is usually difficult to study the whole population; so, sample is drawn from it and then the conclusions based on the sample are generalized to the whole population.

Population Gap: A type of research gap that exists in the population i.e. gap exists as the population is under-researched by prior studies.

Pose: Posture, stance, attitude, to cause something, especially a problem or difficulty.

Positivism: A philosophic viewpoint emphasizing the objectivity of reality i.e. it emphasizes that reality is objective and is not based on our perceptions or is not subjective. Quantitative research is representative of this school of thought.

Postmodernism: An intensive criticism of scientific research.

Potential: Possible when the necessary conditions exist.

Power: Refers to the extent to which a statistical test could find significant differences between groups in a sample when differences exist. Sometimes, the difference between groups in a sample exist but due to the fact that statistical tests used were not enough powerful; so could not detect that differences.

Practical Action Research: Refers to research that involves addressing specific problems such as teachers and parents can work together to solve the issue of children's frequent absenteeism at school.

Practical-Knowledge Gap: A type of research gap that occurs when professional practices either missed in the research study or deviate from the findings of the research study.

Practice: Something that is usually or regularly done, often as a habit, tradition or custom

Pragmatist: A methodologist who proposes using whatever research methods work or will shed light on a problem.

Precede: To be or go before something or someone in time or space.

Precise: Exact and accurate.

Precision: Refers to the degree of accuracy that under the same conditions the repeated measurement will result the same results.

Predetermined: Planned, expected and arranged.

Predict: To say that an event or action will happen in the future, especially as a result of knowledge or experience.

Prediction: The estimation of scores on one variable from information about one or more other variables.

Predictive Validity: Refers to the measurement that measures the intended correlation measurement between the test score and future external criterion.

Predictor Variable: Also called independent variable which refers to the variable whose effects on the outcome/dependent variable are being modeled.

Preliminary: Introductory, primary or initial.

Premise: An idea or theory on which a statement or action is based.

Preponderance: The largest part or greatest amount.

Presumption: Believing something true without having any proof.

Pretest: Refers to the test that is conducted before the intervention in experimental research. It also refers to the test of an instrument before using it in the main study to see whether it is valid and reliable.

Primary Sampling Units: Refers to the units of a sample that are selected at the first phase of a multi-stage sampling.

Primary Source: First-hand information, such as the testimony of an eyewitness, an original document, a relic, or a description of a study written by the person who conducted it

Primary Sources: These are publications in which researchers report the results of their studies directly to the reader.

Principal Component Analysis: Refers to the procedure in which variables are reduced to only a small set of variables to hang on to only the main variable and remove those variables which are less important.

Priority: Something that is very important and must be dealt with before other things.

Probability: Refers to the description of the likelihood of occurrence of a particular event that is usually measured on a scale from 0 to 1 where close to 0 probability represent the rare event and close to 1 probability represents the common event.

Probability of Selection: Refers to the probability of participants inclusion/selection from a population in a sample of a study.

Probability Sampling: Refers to the type of sampling that involves the selection of the participants in such a way that each member of the population has equal chance of inclusion/selection in the sample.

Probit Models: Refers to a type of regression analysis where the dependent variable can only have two values. An example can be a low-income family child who can either attend a specific educational program or not.

Problem Statement: A statement that indicates the specific purpose of the research, the variables of interest to the researcher and any specific relationship between those variables that is to be or was investigated; includes a description of background and rationale (justification) for the study.

Problem: A situation, person or thing that needs attention and needs to be dealt with or solved.

Procedures: A detailed description by the researcher of what was (or will be) one in carrying out a study.

Program Evaluation: Refers to the study that is carried out to investigate the effectiveness of an intervention program.

Project: Refers to a piece of planned work or an activity which is finished in a period of time and intended to achieve a particular aim.

Proportional: If two amounts are proportional, they change at the same rate so that the relationship between them does not change.

Proposition: An idea or opinion.

ProQuest Dissertations and Theses: Database that maintains a digital library that has more than 1.4 million titles, including abstracts and full-text files of doctoral dissertations and master's theses submitted by more than 1000 graduate schools and universities in North America.

ProQuest Education Journals: Database that offers access to more than 745 top educational publications, including nearly 600 titles in full text.

Prototypical: Representing an original type after which other similar things are patterned.

Proxy Variable: Refers to a variable that substitutes for another variable. This happens when the actual variable or variable of interest is missing in the data. This could be due to either not including the variable in the data collection or its difficulty of measure in a survey/interview.

Psychological Abstracts: Refers to the periodical indexed abstracts and the print counterpart of the PsycINFO database. It was published by the American psychological association and was produced for 80 years, ceasing publication at the end of 2006.

Psychometric Properties: Refers to reliability and validity. Reliability is the consistency of measure whereas validity is the accuracy of measure.

PsycINFO: Database containing summaries and citations of literature in the field of psychology dating back to the 1800s.

Purpose of the Study: A specific statement by a researcher of what he/she intends to accomplish. It refers to a section in the research study that explains why the researcher is conducting (expressing the purpose of) that particular study.

Purposive Sampling: Refers to a non-probabilistic sampling technique in which based on the researcher's knowledge of suitable subjects, participants are non-randomly selected.

Q

Q-Methodology/Q-Sort: Refers to a research method that studies participants' points of view on a variety of topics. This involves asking participants to sort statements/words/picture cards based on a particular criterion.

Qualitative Research: A type of social science research that usually studies small samples non-statistically in a natural setting to have an in-depth understanding of an issue and mostly involves interviews and observations as major data collection tools.

Qualtrics: An online Web-based survey.

Quantitative Research: A type of social science research representing positivism philosophy that usually studies large samples statistically and involves quantification and manipulation of variables to explain/understand social phenomena. It uses a deductive approach focusing on theory testing. The questionnaire is its major data collection tool.

Quartiles: Refers to a set of three values that divides the total frequency into four equal parts.

Quasi-Experimental: Refers to an experimental research design which involves evaluating the effect of an intervention; however, it lacks the key ingredient of experimental research i.e. assigning participants randomly. In quasi-experimental research, participants are non-randomly assigned.

Questionnaire: Refers to a survey document that contains questions and is used to collect data from the subjects of a research study.

Quota Sampling: A type of non-probabilistic sampling that involves dividing the population into strata/groups and then selecting a proportionate number (quota) of participants from each group of participants as a sample. For example, a researcher wants to select a sample of 300 students from a population of 3000 students (2000 male and 1000 female); so, based on quota sampling the researcher has to select 200 male and 100 female students.

R

RAND Education: Refers to an educational nonprofit organization that conducts policy-based research and analysis to address major problems in the educational system.

Random Effect Model: Refers to a statistical model i.e. regression or analysis of variance that assumes the independent variable/variables are random.

Random Error: Refers to measurement error that is caused by factors that cannot be controlled.

Random Replacement: A procedure commonly used to handle nonresponse, especially in a telephone survey.

Random Sampling: Refers to a sample selected in such a way that every member of the population has an equal chance of being selected as the participants are randomly selected from a population.

Random Selection: Refers to the process of selecting participants by chance from a population.

Random Variable: Refers to a variable that measures some characteristics of a sample/population numerically. For example, the variable for height is said to be random as the value differs from individual to individual.

Randomization: Refers to the technique in which participants in a sample are assigned at random either to control the group or the experimental group.

Range: Refers to the difference between the lowest and highest values or it is a measure that explains how dispersed or spread the data values are for a specific variable. The larger the range the more dispersed the data will be. It is calculated by subtracting the lowest data point value from the highest data point value. For example, for a data set that start with 4 and ends with 10, the range will be 6.

Rank Order Scale: Refers to a set of statements that are presented to the participants of a study and are advised to order the statements according to their preference on specific criteria. For example, students may be provided with several teaching methods and then they could be asked to order the different teaching methods based on their effectiveness.

Ratio: The relationship between two groups or amounts, which expresses how many times the number in one group contains the number in the other group. For example, if we have 10 teachers for 300 students, the ratio of teacher to students will be 10:300 or 1:30.

Ratio Scale: Refers to a scale in which the values occur in equal meaningful intervals and has a true/meaningful/absolute zero.

Raw Score: Refers to the score from observation or survey that is not converted yet to another type of scores like percentile, ranking or grade.

Refusal Rate: Refers to the proportion of the subjects/participants that deny taking part in the survey, interview or providing any other type of data.

Regression Analysis: Refers to a statistical analysis/technique that measures the relationship between an outcome/dependent variable and one or more predictor/independent variables.

Regression Equation: Refers to the mathematical equation that shows a dependent/outcome and one or more independent/predictor variables relationship.

Rationale: The reasons or intentions for a particular set of thoughts or actions.

Receptiveness: Openness, accessibility.

Reference: Refers to the citation of source details from where information has been taken and is usually written as a list at the end of an article, book or any other type of academic writing.

Reliability: Refers to the extent to which measurement/assessment/instruments produce consistent results. It means that if the same instrument is used again and again, it will yield the same results.

Replicability: The extent to which a scientific investigation can be repeated to check its findings and outcomes can be tested again by others.

Replication: Copying, reproduction, repetition or duplication.

Research: Research is a systematic, controlled, empirical and critical investigation of a phenomenon, guided by theory and hypotheses about the presumed relations among such phenomena. A detailed and systematic study on a subject/issue to discover/reach new information/understanding to solve a problem or enrich the existing body of knowledge.

Research Design: Refers to the overall plan for collecting data, answering the research questions and the specific data analysis techniques or methods that the researcher intends to use.

Research Hypothesis: Refers to a prediction of research study outcomes. Often a statement of the expected relationship between two or more variables.

Research Method: Refers to the approaches, techniques and tools that are used by the researcher to conduct a research study.

Research Proposal: Also called synopsis is a summarized written plan for conducting a research study.

Research Question: Refers to the question that the researcher tries to find the answer to in the research data to solve/explore/understand an aspect of the research study. It works as a guideline and keeps the researcher focused on the various aspects of a research study.

Research Report: A detailed description of how a study was conducted that includes the research problem, research objectives, data collection procedure, data analysis procedure, findings, results and conclusions of the study.

Respondents: Refers to the individuals that provide answers to a survey questionnaire and provide the researcher with the data for analysis.

Response Rate: Refers to the degree of responded/completed interviews/surveys. It is simply obtained from dividing the number of responded/completed interviews/surveys by the overall subjects/participants who were supposed to respond/complete the interviews/surveys.

Results of a Study: Refers to the statements that announce/explain what has been obtained from the analysis of the collected data of the study.

RIE: Abbreviation of Resource In Education.

Rigorous Research: Refers to the research study where the research design, data collection procedure, data analysis procedure etc. are in line with the research objectives.

Robustness: Refers to the strength of a statistical test/model/procedure that continues to be useful even when one or more assumptions are violated.

RRE: The short form of Review of Research in Education.

R-Squared (R^2): Refers to the statistical measure in regression which shows the dependent variable proportion that can be explained by the independent variable. It shows the goodness of fit i.e. how well the data fit in the regression model.

S

Sample: Refers to a limited group of participants/subjects that are selected from a population i.e. larger group. Usually, it is difficult to collect data from each member of the population; so, the researcher selects a limited proper sample from it, collects data from it, analyze the data and then generalizes the findings/results to the population.

Sample Size: Refers to the number of participants/subjects in a study.

Sampling: The process of selecting several individuals from a population in such a way that the selected individuals are representative of the larger group (population) from which they were selected.

Sampling Bias: Refers to sample misrepresentation of the population by systematically excluding some of the population members from the sampling process.

Sampling Design: Also called sample design refers to the part of research design that identifies/explains the sample selection method and the size of the sample. It explains who will participate as a sample in the study.

Sampling Distribution: Refers to the frequency with which the values in the sample appear characterized by the mean and the variance of the sample.

Sampling Error: Refers to the error that happens because all members of the population are not measured as they are difficult to be included in the sample. If different samples are taken from the same population will yield different results on some specific criteria. For example, different samples from a particular university students to investigate the quality of the university will yield a sample to sample varied results.

Sampling Frame: Refers to a list of the entire eligible population from which the sample of a research study is obtained. Ideally, the sampling frame is exactly equal to the target population but in practice, this is a very rare case.

Sampling Interval: Refers to the participants' distance/gap from one another in a list when systematic sampling is implemented. For example, selecting every 5th or every 10th or every 15th member from a list indicate the gap/distance of 5, 10, and 15 respectively.

Scale: Refers to the group of survey questions designed to measure the same concept. Or it is a set of numbers, amounts etc. used to measure or compare the level of something.

Scaled Score: Refers to the mathematical transformation of the raw scores into scores that can be compared across individuals to report scores for all participants of the study on a consistent scale.

Scientific Method: Refers to a way of knowing that involves collecting the data, analyzing the data, and reaching findings and conclusions.

Scatter Plot: A display of the relationship between two numeric/quantitative variables to show the value of one variable plotted against the value of another variable.

Search Term: Term used to locate sources during a computer search of the literature.

Secondary Source: Refer to publications in which authors describe the work of others.

Selection Bias: Refers to the selection error where participants are selected without proper randomization which results in selection of a sample that is not a proper representative of the population. The error might happen due to the error in the selection procedure or the researcher's personal inclination to select some participants over others.

Self-Selection Sampling: A type of non-probabilistic sampling in which the decision to participate in the study is given to potential participants themselves. For example, an invitation for participating in a survey may be sent to all students at a college/university asking them to express their opinion on a particular subject/issue.

Seminal Works: Refers to pioneer landmark studies/articles in a particular discipline that have explored an important issue. They are valuable works that are still in use.

Semi-Structured Interview: A type of interview where to an extent the researcher uses a preplanned list of questions but on proper occasions has the choice/flexibility to go away from the listed questions and ask follow-up questions.

Sensitivity Analysis: A tool that assesses the robustness of primary data analysis findings/conclusions to assess the impact/effect of the influence of main assumptions/variations.

Sequential Hypothesis Testing: A form of statistical analysis that involves data evaluation as they are collected. There is no set sample size in advance and instead, the process continues until significant results are observed/obtained.

Significance Level: It is the measure of the strength of the evidence that must be there to reject a null hypothesis and declare that the effect is statistically significant. It is usually 0.5 which means that there is a 5% risk allowed to reject a null hypothesis.

Simple Linear Regression: A type of regression statistic technique used to measure the relationship between an outcome/dependent variable and a predictor/independent variable.

Simple Random Sampling: Refers to the probabilistic sampling in which each participant is selected by chance and each individual has an equal chance to be selected for the sample.

Simulation: A tool that helps in studying complex issues/problems/processes. A known model/theory is used to explore and teach how well the data fit the model under different sets of assumptions/conditions. The researcher imaginary control and manipulate all the factors involved separately and in combination to see how they affect the findings.

Single Subject Design/Research: Design applied when the sample size is one; used to study the behavior change that an individual exhibits as a result of some intervention or treatment.

Skewness: Refers to the tendency of a statistic distribution to diverge from evenness.

Snowball Sampling: A type of non-probabilistic sampling technique used to recruit future study participants through referrals from current participants.

Sociogram: A display of variables relationships networks that helps the researchers in identifying the nature of relationships which is too complex/difficult to understand otherwise.

Source: The place something comes from or starts at, or the cause of something.

Specimen: Something shown or examined as an example.

Springboard: Something which provides you either with the opportunity to follow a particular plan of action or the encouragement that is needed to make it successful.

SSCI: Stand for Social Science Citation Index. This is a type of citation and indexing service, when a researcher has found an article that contains information of interest; he or she can locate the author's name in the SSCI to find out the names of other authors who have cited this same article and the journals in which their articles appeared.

Stakeholders: People or organizations who have an interest in your research project or affect or are affected by its outcomes.

Standard Deviation (SD): This is the square root of the variance and the most stable measure of variability/dispersion. It takes into account each score in a distribution to calculate the difference between each observation and the mean observation.

Standard Error of Difference (SED): The standard deviation of a distribution of differences between sample means.

Standard Error of Estimate: An estimate of the size of the error to be expected in predicting a criterion score.

Standard Error of Measurement (SEMeas): An estimate of the size of the error that one can expect in an individual's score.

Standard Error of the Mean (SEM): The standard deviation of sample means indicated by how much the sample means can be expected to differ if other samples from the same population are used.

Statistical Analysis: Refers to the process of analyzing to identify patterns/trends and relationships in the data using either descriptive statistical technique (percentage, mean, variance, correlation and so on) or inferential statistical technique (t-test, chi-square, regression, ANOVA and so on).

Statistical Control: Refers to a technique used in multivariate analysis where the effect of one or more independent variable(s) is removed on the dependent/outcome variable to better analyze the effect of each independent variable on the outcome/dependent variable.

Statistical Inference: This is the process which involves drawing conclusions/inferences from the analysis of sample data about a population.

Statistical Significance: Refers to the probability/likelihood in the statistical analysis that the relationship of observed variables or the difference between groups is not because of random chance.

Statistics: This is the science/discipline/practice that is concerned with the collection, organization, analysis, interpretation and presentation of data.

Strategy: A detailed plan or skills of a plan to achieve success in performance/situations.

Stratification: Before sampling, individuals of a population are grouped into subgroups based on similar characteristics to improve sample representativeness.

Stratified Sampling: A probability sampling technique that involves dividing the population into strata/groups and then the sample is selected from each stratum/group using simple random sampling.

Structural Model: A theoretical model that encompasses and expresses the relationship of dependent and independent variables in the data.

Structured Interview: A type of interview that involves a fixed/preplanned list of questions and the researcher has to follow that fixed/preplanned list of questions during the interview.

Structured Observation: Also called systematic observation is a data collection method where the researcher specifies the behavior to be observed before conducting observations. In this, the researcher usually takes notes of the occurrence and frequency of the behaviors and can be conducted both in the laboratory and natural setting.

Subject Heading: In most databases, the assigned vocabulary words are referred to as subject terms or subject heading.

Subjectivity: Condition of relying upon one's personal judgment.

Subjects: Individuals/participants who participate and provide data in a research study.

Subsample: A limited group of individuals (small sample) selected from a large group (larger sample).

Substantiate: To show something to be true or to support a claim with facts.

Summary: A short clear description that gives the main facts or ideas about something.

Summary Table: This is a visualization that summarizes statistical information about data in table form.

Summative Evaluation: Seek to examine the effects or outcomes of an object by describing what happens after the delivery of the program.

Supplementary: Extra, additional.

Survey Monkey: This is an online Web-based survey.

Survey: Researchers are often interested in the opinions of a large group of people about a particular topic or issue; so, they ask several questions related to the issue to find answers.

Survey Research: Research approach that involves describing the characteristics of a group of individuals employing a questionnaire (directly, mailed or online surveys) or interviews (in-person, through phone, or online platforms). Data is either collected at one go i.e. at one single point in

time (cross-sectional survey) or collected on several occasions i.e. at multi-time points (longitudinal survey).

Syllogism: A process of logic in which two general statements lead to a more particular statement.

Systematic Bias: Refers to the data that is systematically higher or lower than the true values of data within the population which is either caused by sampling bias (selection bias) or measurement bias (responses bias).

Systematic Review: A type of literature review that involves a systematic review of data and is a better-organized review format than others. It has two types i.e. meta-analysis and meta-synthesis.

Systematic Sampling: A selection procedure in which all sample elements are determined after the selection of the first element since each element on a selected list is separated from the first element by a multiple of the selection interval.

T

Target Population: The population to which the researcher, ideally would like to generalize results.

T Distribution: Also termed as student's t-distribution is a theoretical probability distribution that is similar to a normal distribution and used to test small size sample differences in group means.

Technique: A way of doing an activity which needs skills.

Telephone Survey: Refers to survey conducted through telephone calls. The researcher asks questions of the respondents over the telephone call.

Tentative: Of a plan or idea not certain or agreed upon.

Theoretical: Relating to what is possible or imagined rather than to what is known to be true or real, based on the ideas that relate to a subject, not the practical uses of the subject, related to an explanation that has not been proved.

Theoretical Review: A type of literature review that involves evaluating established theories to give an insight into the research work.

Theoretical Gap: A type of gap that comes into existence due to the absence of the theory.

Theory: A theory is a set of interrelated concepts, which structure a systematic view of phenomena to explain or predict.

Thesis: A long piece of academic writing conducted on a particular subject as a requirement of a college or university degree.

Tradeoff: A situation in which you balance two opposing situations or qualities.

Transformation: A complete change in the appearance or character of something so that to improve.

Transition: A charge from one form or type to another, or the process by which this happens.

Transmission: the process of broadcasting something by radio, television, etc., or something which is broadcast

Trend Study: In trend study different samples from a population whose members may change are surveyed at different points in time.

Triangulation: It is a way of conducting a research study using multiple methods (method triangulation), using multiple data collection techniques (data collection technique triangulation), involving multiple researchers (researchers triangulation) or using multiple theories (theories triangulation).

T-Test: Also termed as student's t-test is a parametric test that refers to the inferential statistical procedure that compares the means of two groups of participants (independent, unrelated); the means of two conditions (dependent, related, within-subject or paired) or the mean of one sample with a predefined value to test group differences.

Target Population: Refers to the population from which the sample is drawn and to which the researcher would like to generalize the results obtained from the analysis of sample data.

Test-Retest Reliability: Refers to the extent to which a measure yields consistent results when it is administered several times.

Theoretical Sampling: This is a sampling process that involves collecting and analyzing data to generate a theory whereby the researcher decides what data to collect based on the theory that develops and emerges from the data.

Theory: A statement that states a hypothesized relationship between various characteristics or phenomena. It should be clear, specific and testable.

Time Series Analysis: Also called trend analysis refers to a set of statistical techniques operated to find associations/patterns in data across time.

Treatment Effect: Refers to the change in outcome/dependent variable because of some intervention or change in the predictor/independent variable.

Treatment Offered: Refers to the treatment/intervention offered to the individuals or groups of individuals assigned to the treatment group in experimental research.

Treatment-on-the-Treated (TOT): This is an estimate of the effect of an intervention/treatment on the individuals who received it.

Triangulation of Data: Refers to a research technique where a researcher explores a particular issue/problem using several research methods or sources to enhance validity and achieve a thorough understanding.

Two-Tailed Test: Also called non-directional test helps the researcher in understanding whether the mean of group A is greater or lesser than the mean of group B and vice versa. On the other hand one-tailed test (directional) only examines whether the mean of group A is greater or lesser than the mean of group B. For example, the research question for the two-tailed test will read "Is there a statistically significant difference between males and females with respect to math achievement?" whereas the research question for one-tailed test will read 'Do males score significantly higher than females with respect to math achievement?".

Two-Way ANOVA: A statistical test that helps in understanding the effects of two categorical independent variables on a continuous dependent/outcome variable to analyze the direct effect and interaction of the independent variable on the dependent/outcome variable.

Type I Error: An error that happen due to rejecting a true null hypothesis i.e. the researcher concludes that there was a difference in the groups but in fact, there was no difference.

Type II Error: An error that happens when the researcher fails to reject a false null hypothesis i.e. the researcher concludes that there was no difference in the groups but in fact, there was a difference.

Typology: This is a descriptive categorical scheme which works as the basis for coding/analyzing the data in qualitative studies. Each category should be separate, distinct, exhaustive and mutually exclusive.

U

Unbalanced Scale: Refers to a scale where the number of favorable and unfavorable categories are not the same.

Unbiased: Said about a statistic that is not affected by systematic bias. For further explanation on systematic bias refer to it above in section 'S'.

Unconditional Longitudinal Models: Researchers usually test several models including no predictors or that included only time as a fixed effect when modeling a change/growth over time and its relationship to one or more independent/predictor variables.

Undergo: To experience something unpleasant or which involves a change.

Unequal Variance (Heteroscedasticity): Refers to unequally spread (having unequal variance across the values on a second independent/predictor variable) values on the dependent variable. It is the absence of homoscedasticity (equal variance) which is an important assumption in linear regression analysis.

Unequivocally: Clearly, obviously, definitely, explicitly.

Unfolding Questions: Refers to a sequence of questions designed in such a way to collect thorough and precise data on a topic used by the researcher to collect every bit of essential information from the respondent which is impossible in the case of a single question.

Unify: To bring together; combine.

Unit of Analysis: The unit i.e. individuals or objects that are studied in a survey is called the unit of analysis.

Univariate Analysis: Refers to examining one variable properties instead of examining the relationship between variables. This is done by examining frequencies of values/responses (frequency distribution, counts), central tendency (mode, mean and median) and the spread of values/responses (variance, range, standard deviation).

Unstructured Interview: A type of interview that involve open-ended questions. The researcher provides the interviewee with the platform to talk freely like a normal conversation and collects important relevant data. This does not involve a fixed/preplanned list of questions and the researcher is not limited to following a fixed/preplanned list of questions during the interview.

Unproductive: Not having positive results.

V

Validate: To make something officially acceptable or approved, especially after examining.

Validity: The extent to which data, data collection instrument and results reflect reality and accuracy.

Variable: Refers to measurable characteristics/attributes of the subject of a research study that varies within the sample. In research studies, variables are classified mainly into dependent variable, independent variable, intervening variable, moderating variable, control variables and so on.

Variance: Refers to a commonly used measure which involve measuring variables dispersion. It is the square of the difference between the values of each observation and the mean value. It is the square root of the standard deviation.

Verbatim: Using the same words as were originally used.

Version: A particular form of something which varies slightly from other forms of the same thing.

Via: Through; using.

View-Point: A point of view, a way of considering something.

Violation: An act against a law, agreement, principle or something that should be treated with respect.

Visual: Relating to seeing.

Voluntary: Done, made, or given willingly, without being forced or paid to do it.

W

Warner Revised Occupational Rating Scale: The Warner scale consists of seven occupational categories with assigned values ranging from 1 to 7, based on the skill requirements and social prestige of the job.

Web Browser: The computer program that lets you gain access to the internet.

Web of Science: The ISI Web of Science is the interface for institutional access to the ISI Citation Databases, which cover over 10000 leading journals and over 100000 book-based and journal conference proceedings.

Weighted Score: Refers to the adjusted score by factors like the importance of the attribute assessed, reliability and validity of the assessment from which the score was derived or the combination of all such factors.

Weighting: Refers to the process used to ensure that sample produced statistics are representing the population or not. It is a way/procedure that helps in understanding the differences in selection, and differences in the rates of non-response to help in reducing the risk of selection bias and non-response bias.

Wording: The choice and meaning of the words used when you say or write something.

Written-Response Instrument: The instrument requiring written or marked responses.

WWW: The short form of World Wide Web.

Z

Z Score: A score/value that comes from subtracting the mean value from an individual data value and dividing by the standard deviation to standardize data value and allow individual data values from different distributions to be compared.

Z Test: Refers to a statistical test that is applied to compare the means of two independent samples or one sample with a predetermined value of samples drawn from normally distributed populations.

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