

THE COMMERCE KATHA

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'Commerce Katha' the newsletter of the Department of Commerce welcomes all its readers, writers and the students to its 5th edition. We are now in the near end of the academic year 2022 -23, a session with a feeling of newness and clean slates. A year which has given us fresh opportunities to do things differently with focused attention to purpose. This year has also been one of the most challenging one for many of us, so as to compensate the loss sustained on account of the frequent COVID attributed lock down and the hectic academic schedules over the immediately preceding two years. However, with the commencement of the new academic session for the students, new dreams, hopes, aspirations and events are also unfolding.

The editorial desk is thankful to all those who have contributed to this edition, especially our students and scholars for sharing their knowledge and feelings through this platform. We appreciate your support and feedback. We hope going through this newsletter is as enjoyable for you as it is for us to bring it to you.

MESSAGE

We are excited to bring you the latest edition of our departmental newsletter, commerce Katha. It covers the most pressing topics in today's rapidly changing business research landscape. We believe that staying informed and up-to-date is essential to success in today's fast-paced business environment, and our magazine is designed to provide you with the latest insights and knowledge to help you stay ahead of the curve. We hope you enjoy reading this edition of our magazine, and we welcome your feedback and suggestions for future editions.



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GANGADHAR MEHER UNIVERSITY

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**HARNESSING THE POWER OF MIXED
METHOD RESEARCH: UNDERSTANDING
ITS RELEVANCE IN THE CURRENT
RESEARCH LANDSCAPE**

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Mixed method research is an approach to research that combines both qualitative and quantitative methods to answer research questions. This approach recognizes that certain research questions cannot be fully answered using only one methodological approach and that combining different methods can provide a more comprehensive and nuanced understanding of a phenomenon. In mixed-method research, data is collected using multiple methods, such as surveys, interviews, and observations, and then analysed using both quantitative and qualitative techniques. This allows researchers to triangulate their findings, validate their results, and gain a deeper understanding of the complexities of the research topic. Mixed method research is increasingly being used in many social science fields, including psychology, education, and sociology, and has become an important tool for researchers seeking to address complex research questions.

Mixed-method research has several advantages over traditional single-method approaches, including:

- **Comprehensiveness:** By combining both qualitative and quantitative data, mixed-method research provides a more comprehensive understanding of the research question or problem.
- **Validity:** The use of multiple methods can enhance the validity of the research findings by triangulating the data from different sources.
- **Richness and depth:** Qualitative data can provide rich and detailed insights into participants' experiences, motivations, and attitudes, while quantitative data can provide statistical analysis and numerical evidence.
- **Flexibility:** Mixed method research allows for flexibility in research design, allowing the researcher to adapt to unexpected findings or emerging trends.
- **Improved generalization:** By combining quantitative and qualitative data, mixed-method research can improve the generalization and applicability of findings to a wider population.

- **Enhanced triangulation:** The use of mixed methods can enhance triangulation, where the researcher uses multiple sources of data to verify and validate the research findings.
- **Complementary analysis:** Mixed method research can provide complementary analysis of both data types, providing a more complete picture of the research topic.

There are various software tools available to support mixed-method research, and the choice of software will depend on the specific needs and preferences of the researcher. Some popular software tools for mixed-method research include NVivo, MAXQDA, and ATLAS. ti, QDA Miner etc.

Overall, mixed-method research can provide a more comprehensive and nuanced understanding of a research question or problem, leading to more insightful and useful findings.

**STRENGTHENING THE CREDIBILITY OF
QUALITATIVE RESEARCH THROUGH
TRIANGULATION METHODOLOGY**

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Triangulation is a research methodology that involves using multiple methods, data sources, or perspectives to study a phenomenon to increase the validity and reliability of the findings. In research, triangulation can involve combining quantitative and qualitative methods. By using multiple methods or sources, researchers can cross-check and corroborate their findings, reducing the potential for bias or error. Triangulation can be useful in a variety of research settings, including social sciences, health sciences, and education. However, it is important to carefully consider the appropriate methods and sources of data for a particular study and to ensure that the triangulation is conducted systematically and rigorously. In qualitative research, triangulation refers to the use of multiple methods, data sources, or perspectives to gain a more comprehensive understanding of the phenomenon being studied. Triangulation is often used in qualitative research to increase the credibility and trustworthiness of the findings by reducing the potential for bias and subjectivity. Several types of triangulation can be used in qualitative research:

Methodological triangulation: This involves using multiple methods to collect data, such as interviews, focus groups, and observations. By using multiple methods, researchers can gain a more complete understanding of the phenomenon being studied.

Data triangulation: This involves using multiple sources of data, such as interviews, observations, and documents. By using multiple sources, researchers can verify and corroborate their findings, reducing the potential for bias and error.

Investigator triangulation: This involves using multiple researchers to analyze the data. By involving multiple researchers, different perspectives and interpretations can be considered, reducing the potential for bias and subjectivity.

Theory triangulation: This involves using multiple theories or frameworks to analyze the data. By using multiple theories, researchers can gain a more nuanced understanding of the phenomenon being studied and identify areas of agreement and disagreement.

It is important to note that triangulation should be used judiciously and in a systematic manner in qualitative research. Researchers should carefully consider the appropriate methods and sources of data for their study, and ensure that the triangulation is conducted rigorously and transparently.

APPLICATION OF THE LATEST STATISTICAL TOOLS IN SOCIAL SCIENCE RESEARCH

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In recent years, social science researchers have increasingly turned to statistical tools to help them analyze complex data and draw meaningful conclusions. From traditional statistical techniques to advanced machine learning algorithms, there are many powerful tools available to social science researchers today. In this article, we will explore some of the latest statistical tools being used in social science research.

Structural Equation Modeling (SEM): SEM is a statistical technique that allows researchers to model complex relationships between variables. It is particularly useful in studying the relationships between latent variables, which are variables that cannot be directly observed but can be inferred from other variables.

Multilevel Modeling (MLM): MLM is a statistical technique used to analyze data that has a nested structure, such as data from individuals nested within groups. It is particularly useful in studying the effects of individual and group-level factors on outcomes.

Item Response Theory (IRT): IRT is a statistical technique used to analyze data from tests or surveys. It allows researchers to model the relationship between the difficulty of the items and the ability of the participants, providing a more accurate measure of participants' abilities.

Bayesian Analysis: Bayesian analysis is a statistical approach that allows researchers to incorporate prior knowledge into their analyses. It is particularly useful in situations where the data is limited or noisy.

Machine Learning (ML): ML is a set of techniques that allows computers to learn patterns from data and make predictions. In social science research, ML is used to analyze large datasets and to identify patterns and relationships that may be difficult to detect using traditional statistical techniques.

Network Analysis: Network analysis is a set of techniques used to study the relationships between individuals or organizations. It is particularly useful in studying social networks, such as friendship networks or organizational networks.

In conclusion, social science research has benefited greatly from the latest statistical tools and techniques. These tools have allowed researchers to analyze complex data and draw meaningful conclusions. As data continues to grow in size and complexity, these tools will likely become even more important in social science research.

CRITERIA OF GOOD RESEARCH

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Good research is systematic and organized into predetermined steps that must be completed in a predetermined order and compliance with a clearly defined set of guidelines. Although the systematic nature of the research does not preclude imaginative thought, it does reject the use of speculation and intuition in drawing results. Good research suggests that logical principles govern research and the logical processes of inference and deduction are extremely valuable while conducting research. A deduction is the act of reasoning from a premise to a conclusion that follows directly from that premise, whereas induction is the process of reasoning from a portion to the whole. In actuality, logical thinking increases the significance of research in the context of decision-making. Good research is empirical because of these qualities, research findings are replicated and verified, providing a solid foundation for decision-making. The entire research procedure is repeated with the same methodology and new data

and still produces the same findings, the research study is said to be replicable (or repeatable). This demonstrates the validity of the original study's findings. Empirical research generates knowledge from experience rather than from theory or belief since it is based on observed and measured phenomena.

DRAFTING QUESTIONNAIRE

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Before framing the questionnaire, it is essential to set out in detail the data which we desire from the data answer to the questionnaire. It will be wise if we can construct the type of tables which we would like to obtain from the inquiry. The success of the questionnaire method of collecting information depends largely on the proper drafting of the questionnaire. Drafting a questionnaire is a highly specialized job and requires a great deal of scale and experience. It is difficult to lay down any hard and fast rule to be followed in this connection.

The general principle helps frame a questionnaire

- Cover letter
- The number of questions should be less
- Questions should be arranged logically
- Questions should be short and simple
- Ambiguous questions ought to be avoided
- Instructions to the informants
- Personal questions should be avoided
- Questions should be capable of objective answer
- "Yes" or "No" question
- The questionnaire should look attractive
- Questions requiring calculations should be avoided
- Pre-testing the questionnaire
- Cross-checks
- Method of tabulation

EXPLORATORY FACTOR ANALYSIS

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A statistical technique that is used to reduce the data into a smaller set of variables is known as the Exploratory Factor Analysis. It is done to explore the fundamental theoretical structure of the

phenomenon. It is used to identify the structure of the relationship between the variables and the respondents. SPSS software is used for factor Analysis. The process of EFA starts with an initial analysis run to get eigenvalues for each factor in the data. After that, the KMO test & Bartlett's test of Sphericity was executed to determine the validity of the construct and to verify that the data which is collected for an EFA were relevant. KMO test was used to verify the sampling adequacy for the analysis and to determine the correlation between the items, the Bartlett's test of Sphericity is done.

The requirement to proceed with EFA:

Reliability Analysis: The reliability of an instrument or questionnaire is concerned with the consistency, stability, and dependability of the scores. Cronbach's alpha value should be more than 0.7.

Kaiser-Meyer-Olkin (KMO) Test for Sampling Adequacy: It checks the sample adequacy of the suitability of our data, and whether the sample we have taken in our research is adequate for the factor analysis or not. The KMO test gives a value between 0 & 1, a value between 0.8 and 1 indicates that the samples are adequate, a value less than 0.6 indicates the samples are not adequate, and a value should be more than 0.6.

Bartlett's test of Sphericity: The number of variables that we have taken for our research/ survey are correlated or not. If the variables are too different then the factor analysis shall not be able to factor it and we have to go for different variables. If the result of the initial EFA shows an item which is loading on the wrong factor or cross-loading on multiple factors, those items are deleted in order and the EFA is re-performed until a simple solution is achieved. It also gives a value that should be less than 0.05.

HYPOTHESIS TESTING

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The hypothesis is an assumption based on limited evidence which can be tested by scientific techniques. In simple words, it is a predictive statement or an assumption. There is a person called A, who drinks green tea every day and a person called B, who doesn't drink green tea. Here we assume (i.e hypothesis) that the person who drinks green tea every day would have better health than the other person. Health and green tea are dependent and independent variables respectively. Normally there are two types of hypotheses (a) Null hypothesis and (b) Alternative

hypothesis. The alternative hypothesis is also called the research hypothesis and it is denoted by H_a . It is the actual hypothesis that the researcher wants to prove. The alternative hypothesis says that there exists a relationship between the variables. On the other side null hypothesis is exactly the opposite of the alternative hypothesis and is denoted by H_0 . The null hypothesis says that there is no relationship between the variables. H_0 is the hypothesis at which the researcher performs the statistical test, although the researcher can also perform the statistical test on an alternative hypothesis but if he will go through the alternative hypothesis that would be difficult for him to prove the same. A null hypothesis can never be accepted, either it would be rejected or not be rejected, which ultimate effect will be on the alternative hypothesis. Rejecting the null hypothesis will lead to acceptance of the alternative hypothesis. The significance level is the probability at which the researcher will reject the null hypothesis when it is true. In simple words, it is the probability of committing a type I error. The significance level is normally taken as 10%, 5%, and 1% which depend upon the area of research i.e. 1% and 5% significance level is normally taken for the medical sector and social science respectively. The significance level is denoted by alpha whereas the confidence level is $1-\alpha$. if the significance level is taken at 5% then the confidence level will be 95%. The P-value or the probability value is the actual probability at which the researcher rejects the null hypothesis when it is true. It is calculated by the researcher by using statistical tools and a p-value table, whereas the significance level is predetermined. The range of the p-value is between 0 to 1. The researcher normally performed two types of tests i.e. the parametric test and the non-parametric test. When the population is normally distributed the researcher uses the parametric test and when the population is not normally distributed the researcher uses the non-parametric test but if it is unknown to the researcher whether the population is normally distributed or not, then the researcher will use non-parametric test. The parametric test involves Z-test, T-test, F-test, ANOVA, etc. whereas the non-parametric test involves the chi-square test, Mann-Whitney U test, and Kruskal Wallis test. A researcher can follow the following steps for hypothesis testing: The researcher has to state the null hypothesis (H_0) and the alternative hypothesis (H_a).

- Collect the data.
- The researcher will decide the appropriate significance level as per hypothesis suitability.
- Choose and perform an appropriate statistical test.

- Find the corresponding p-value.
- Derive at the conclusion by comparing the p-value and the significance level. If the p-value is less than or equal to the significance level, reject the null hypothesis, and if the p-value is greater than the significance level then fail to reject the null hypothesis.

PARAMETRIC TEST VS NON-PARAMETRIC TEST

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The key difference between parametric and non-parametric tests is that the parametric test relies on statistical distributions in data whereas non-parametric do not depend on any distribution. Non-parametric does not make any assumptions and measures the central tendency with the median value. Some examples of non-parametric tests include Mann-Whitney and Kruskal-Wallis tests etc. In statistics, the generalization for creating records about the mean of the original population is given by the parametric test. This test is also a kind of hypothesis test. A t-test is performed and this depends on the t-test of students, which is regularly used in this value. This is known as a parametric test. The non-parametric test is a type of hypothesis test that is not dependent on any underlying hypothesis. In the non-parametric test, the test depends on the value of the median. This method of testing is also known as distribution-free testing. Test values are found based on the ordinal or the nominal scale. The basis of the test statistic of a parametric test is distribution whereas a non-parametric test is arbitrary. In the parametric test, the measurement level is an interval or ratio scale and in the non-parametric test, it is a nominal or ordinal scale. The measure of central tendency used in the parametric test is mean whereas it is median in the non-parametric test. The information about the population is completely known in the parametric test whereas it is unknown in the non-parametric test.

RESEARCH REPORT

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A research report is a publication that reports on the findings of a research project or alternately scientific observations on or about a subject. These types of assignments typically include projects, inquiries, explorations, theses, and dissertations. A well-written

report on research techniques, information, and conclusions is known as a research report. It is a significant document that provides a first-person account of the research process and is frequently regarded as a reliable source of factual information.

- A report is a tangible output of research.
- It is a written document that communicates the research findings.
- The general purpose of a research report is to communicate research findings in the organization.
- It is the last stage of the research process, which describes what has been done during the period of study or research.
- The research report is different from the research proposal.
- The research report is the conclusion of the research proposal.
- Research reports describe what the researcher has done, why he has done it, and the result he has achieved whereas.
- The research proposal describes what the researcher intends to do and why he intends to do it.
- A research report is written after the completion of the whole research project whereas a research proposal is written at the beginning of the research before the research project begins.
- The research report is longer in-length whereas the research proposal is shorter than the research report.

RESEARCH DESIGN

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Research design is an arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose. The research design is a conceptual structure within which research is conducted and constitutes the blueprint for the collection, measurement, and analysis of data. As such the design includes an outline of what the researcher will do from writing the hypothesis. Main elements of research design- purpose statement, data collection methods, techniques of data analysis, types of research methodology, challenges of the research, prerequisites required for study, and duration of the research study. There are three main types of design for research, they are- data collection, measurement, and data analysis. A researcher must clearly understand the various types to select which model to

implement for a study. It can be broadly classified into quantitative and qualitative.

There are mainly five types of research design:

Descriptive research: In a descriptive composition a researcher is solely interested in describing the situation under their research study. It is a theory-based design method created by gathering, analyzing, and presenting collected data.

Experimental research: It is a casual design where one observes the impact caused by the independent variable on the dependent variable.

Correlational research: It helps researchers establish a relationship between two closely connected variables. A correlation coefficient determines the correlation between two variables whose values range between -1 and +1.

Diagnostic research: In diagnostic design, the researcher is looking to evaluate the underline cause of a specific topic or phenomenon. This method helps one learn more about the factors that create troublesome situations.

REFERENCING

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Referencing refers to acknowledging someone's work or ideas which are used in a research paper or assignment. It plays an important role due to some reasons, such as avoiding plagiarism, giving credit to the author, knowing about the sources, demonstrating knowledge, giving credibility to someone's work, etc. There exist some cases when we should do referencing like at the time copying a diagram, chart, or picture, summarizing the idea of someone at the time of paraphrasing, or a quote from sources.

Different Types of Referencing Styles

American Psychological Association (APA): It is used in psychology, education, and sciences. We mostly used this style of referencing.

- **American Medical Association (AMA):** It is used in medical research.
- **Chicago Manual of Style:** It is used in humanities and social sciences.
- **Modern Language Association (MLA):** It is used in literature, languages, and philosophy.

- The Vancouver System: It is used in medicine and scientific journals.
- The Harvard System: It is used in education. It is also called the "author-date" style.

REVIEW OF LITERATURE

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A literature review is an essential part of any research project or academic paper. It involves critical analysis and evaluation of the existing literature on a particular topic or research question. The purpose of a literature review is to identify gaps in the existing research, provide a summary of the current state of knowledge, and highlight the significance of the research question. A well-written literature review should be comprehensive and provide an overview of the relevant research in the field. The review should be structured and organized, with a clear introduction, body, and conclusion. The introduction should provide a context for the review, explaining why the research question is important and relevant. The body of the review should provide a detailed summary and analysis of the existing literature, organized thematically or chronologically. The conclusion should summarize the main findings and highlight the gaps in the existing research. There are several different types of literature reviews, including narrative reviews, systematic reviews, and meta-analyses. Narrative reviews provide a broad overview of the literature on a particular topic, while systematic reviews and meta-analyses are more rigorous and systematic, involving a comprehensive search of the literature and a quantitative analysis of the data. When conducting a literature review, it is important to use a variety of sources, including academic journals, books, and online databases. It is also important to critically evaluate the quality of the sources and to consider the biases and limitations of the research. Overall, a well-written literature review is an essential part of any research project, providing a comprehensive overview of the existing research, identifying gaps in the literature, and highlighting the significance of the research question.

RESEARCH METHODOLOGY FOR A NOVICE RESEARCHER

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For an infant researcher, research is a like taking an all total new route to an unknown destination. It sounds funny but do hope many can relate to. The gestation period for a researcher to be a researcher and stepping into the real search for research dots is another chronic issue. Though, C. R. Kothari's prescription is there. But the curtains are up just after it, when the infant researcher becomes a novice researcher and starts its actual research work. Then comes, the continuous shot out of the gun, has several problems even in the name of *research problem* crops up. Reckoning them, the first dip in the chilly morning of the frozen river water is finding an area, and then a topic. It doesn't stop there and counting on like *objectives* of the study, sources of research articles, access to different websites, lessons of ethical issues and among them the giant one is the *Research Methodology*. No, no definition propounded by me, as I am a novice researcher, on my way to find one. Perhaps google is there, the search engine for research too. While reading, scrolling surfing randomly, I found the expensive onion, actually it is. Breaking the ice, it's not the expensive rather worthy one to focus and get an overview of the blueprint for research methodology of the *ONION MODEL* by *Saunders*. Leaving with this model, as I myself, even as a novice in research is also trying to understand this.

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