An Outline On Research In Social Science

Dr. Rabindranath Sarma[1*], Ms. Kanchan Kumari[2], Ms. Nikita Bhui[3]

[1*](Associate Professor, Department of Anthropology and Tribal Studies, Central University of Jharkhand, India, ORCID ID: 0000-0002-0899-4877 Google Scholar ID: h9uGPB0AAAAJ)
[2,3](Research Scholar, Department of Anthropology and Tribal Studies, Central University of Jharkhand, India,)

ARTICLE INFO	ABSTRACT
	The practical "how" of a research study is referred to as the methodology of research.Research technique is concerned with the practical steps required to get a scientifically valid and broadly applicable result.To ensure the validity, reliability, and generalizability of results, it entails a thorough evaluation of the methods, instruments, and procedures employed in the data collection, analysis, and interpretation stages. The choice of technique is crucial since it has an immediate impact on the veracity and correctness of the study findings. Strong methodology enhances the overall integrity and application of the study's findings by addressing potential biases and ethical issues in addition to support the theoretical foundation of the research. This study intends to provide a concise and comprehensive overview of research strategies that can help researchers conduct worthy and meaningful analyses and to get a better understanding of the research through a limited existing knowledge. It will also provide an all-inclusive and convenient illustration of research technique for the reader. **Keywords-** validity, reliability, generalizability, ethics, knowledge.

1. INTRODUCTION

Research is a systematic, methodical process of inquiry and investigation aimed at discovering, interpreting, and revising facts, theories, and applications. It is an essential component of knowledge advancement in various fields, including science, humanities, and social sciences. The primary purpose of research is to expand human understanding, solve specific problems, and generate new knowledge that can be applied practically. At its core, research begins with identifying a problem or a question that needs an answer. This process involves extensive background study and a literature review to understand what is already known about the topic and identify gaps in the current knowledge. By doing so, researchers can formulate a clear, precise research question or hypothesis, which guides the subsequent stages of the research.

Research can be broadly classified into two types: qualitative and quantitative. Qualitative research focuses on understanding phenomena from a subjective perspective, often involving detailed, in-depth data collection methods such as interviews, focus groups, and participant observations. It is particularly useful for exploring complex issues that cannot be quantified easily, such as human behavior, cultural practices, and social interactions.

Quantitative research, on the other hand, involves the collection and analysis of numerical data to identify patterns, relationships, and trends. It relies on statistical techniques to test hypotheses and make predictions. Common methods in quantitative research include surveys, experiments, and observational studies. This type of research is well-suited for topics where variables can be measured and quantified, such as medical studies, market research, and educational assessments. A crucial aspect of research is its methodology, which refers to the systematic plan for collecting and analyzing data. The methodology includes the selection of research design, sampling techniques, data collection methods, and analytical tools. It ensures that the research is conducted in a structured and reliable manner, allowing for the results to be valid and replicable. Ethics plays a vital role in research, as it involves the responsible conduct of researchers to ensure the integrity of their work and the welfare of participants. Ethical research practices include obtaining informed consent from participants, ensuring confidentiality and anonymity, and avoiding any form of bias or

manipulation of data. Adherence to ethical standards is essential to maintain the trustworthiness and credibility of the research findings.

The process of research culminates in the analysis and interpretation of data, where researchers make sense of the collected information to draw conclusions and answer the research question. This stage may involve statistical analysis for quantitative data or thematic analysis for qualitative data. The findings are then documented in a research report or paper, which includes an introduction, methodology, results, discussion, and conclusion.

Publishing research findings is a critical step in the research process, as it allows the dissemination of new knowledge to the broader academic and professional community. Peer-reviewed journals, conferences, and academic books are common platforms for sharing research results. This dissemination fosters further research, critical evaluation, and application of the findings in real-world scenarios.

In conclusion, research is a systematic endeavor that seeks to enhance our understanding of the world through careful inquiry and analysis. It encompasses a variety of methods and approaches, all aimed at generating reliable and valid knowledge. By adhering to rigorous methodological and ethical standards, research contributes significantly to scientific, technological, and social progress.

2. BACKGROUND

Research in social science is a systematic process of investigating human society, behavior, and social institutions to understand how individuals and groups interact, how societies function, and how social phenomena emerge and evolve. Social science research encompasses various disciplines, including sociology, psychology, anthropology, economics, political science, and human geography. The ultimate aim is to generate knowledge that can help address social issues, inform policy-making, and contribute to the betterment of society.

Anthropology, often defined as the study of humanity across time and space, adopts a holistic approach to understanding human beings. This interdisciplinary field draws from various disciplines to synthesize diverse perspectives on human existence. Throughout its development, anthropology has been organized into three primary subfields:

1. Archaeology investigates human cultures and societies of the past, also known as Prehistoric Archaeology. Its objective is to reconstruct the historical trajectories of human endeavors and evolution.
2. Physical Anthropology focuses on the biological aspects of humanity, exploring similarities and differences within and among closely related species. It aims to elucidate the evolutionary processes that shaped the emergence and adaptation of human beings.
3. Social/Cultural/Socio-cultural Anthropology examines human societies and their cultures to comprehend their dynamics and structures. This subfield delves into the intricacies of human social organization and cultural practices.

According to Voget, Anthropology began to differentiate itself from other disciplines around 1860.Differing perspectives may argue that earlier philosophers and scientists indeed approached the study of humanity holistically, thus laying the groundwork for what we now recognize as anthropology. In this view, accounts of civilizations and cultures from ancient times can be seen as precursors to anthropological inquiry.

However, the emergence of anthropology as a distinct discipline occurred between 1840 and 1870 AD, stemming from the broader fields of social and natural sciences. This development coincided with Western expansion, driven by scientific advancements and industrial competition, which brought Europeans into contact with previously unexplored regions such as Africa, Asia, and the Pacific islands.

Early social philosophers like Saint-Simon and Comte primarily focused on Western society and its future development. Sociology, coined after Comte, initially dealt with modern Western society, reflecting the limited scope of their theories. As the need arose to synthesize data from various fields like geology, paleontology, prehistory, and mythology, anthropology emerged to formulate a comprehensive theory of human development.However, the colonial encounters with diverse cultures posed a challenge for the Western worldview rooted in Biblical and scientific frameworks. The desire to colonize and explore unknown territories fueled the growth of anthropology, as reports from anthropological studies were utilized by colonial powers to govern their colonies and understand the lifestyles of indigenous peoples. This colonial context underscores the Eurocentric biases that shaped early anthropology.

The prevailing mindset categorized non-Western societies as savages, barbarians, or primitives, a notion reinforced by Charles Darwin's scientific theories in "The Origin of Species." Social evolutionists used Darwin's ideas to construct a hierarchical social ladder, placing Western civilization at the pinnacle and others at lower stages, labeling them as "arrested development" or "social fossils." This perspective overlooked the contemporary nature and adaptability of these communities to their environments. Despite efforts to challenge it, many still adhere to this view of social evolution, envisioning a linear progression from simple to complex societies, which became a central focus of anthropology.

During the era of travel narratives, vast amounts of information about diverse cultures were collected, leading armchair anthropologists to speculate on unseen peoples. These theorists, like McLennan and Morgan, devised universal evolutionary schemes without empirical evidence, earning them the moniker "armchair anthropologists."In response to such speculative approaches, alternative theoretical perspectives

emerged. Diffusionists argued that culture originated in specific regions and spread through contact or migration, although often lacking concrete evidence to support their claims.

While societies indeed evolve and culture diffuses, the flaw in both evolutionist and diffusionist perspectives lies in their insistence on a singular explanation for cultural change. The shortcomings of earlier theories highlighted a significant lack of empirical data, prompting a shift towards a synchronic approach in the study of society rather than a diachronic one. This shift gave rise to Functionalism, Structural-Functionalism, and Structuralism, which emphasized the importance of verifiable observation in describing reality.

Malinowski's Functionalism linked biological needs to social functions, while Radcliffe-Brown's Structural-Functionalism examined society as an integrated whole, with each part contributing to its maintenance and well-being. Claude Levi-Strauss pioneered the Structural study of societies, viewing social manifestations as structural correlates of human cognitive properties.

However, the challenge remained in understanding social change. Neo-Evolutionist theories, championed by Leslie White, Julian Steward, and Marshall Sahlin, offered a more holistic perspective than Classical Evolutionism, focusing on systemic change as the driver of societal transformation. Franz Boas and his followers rejected speculative evolutionary trends and synchronic studies, instead emphasizing the impact of local and historical factors on individuals. This approach, known as Historical Particularism, diverged from the broader theoretical frameworks prevalent at the time.

The emergence of Marxist anthropology provided insights into the relationship between local economies and the global context, albeit with its own limitations. In contrast to other social sciences like economics, political science, law, and linguistics, which focus on specialized studies of particular institutions, anthropology adopts a holistic perspective, examining how institutions are interconnected. Beneath every human activity, anthropologists uncover layers of social meaning.

Social anthropology seeks to understand humans not merely as creators of socio-cultural practices but as individuals with emotions, motivations, and the capacity for personal growth. In addition to providing analytical frameworks for studying human behavior in various contexts, the discipline is deeply concerned with improving human welfare. To address social issues and implement changes effectively, it is essential to understand how societies operate, including identifying conflicts, exploitation, oppression, and other challenges.

Through the interplay of theory and ethnographic observations, social anthropology generates knowledge applicable to development and change initiatives. Theory guides the analysis of empirical data, while ethnographic findings inform and refine theoretical frameworks. Ethnographers often find themselves adapting their theories and methodologies in response to the complexities encountered in the field, leading to the evolution of both theory and practice. As Barnes suggests, fieldwork often prompts scholars to revise their theories and develop new analytical tools to accurately interpret their findings and withstand peer scrutiny.

4. FOLKLIFE

Most people are familiar with the term "folklore," which includes oral traditions like stories, sayings, and songs—a significant focus of what the American Folklife Center (AFC) documents. However, to describe our broader mission, we use the term "folklife." This term encompasses various cultural forms, such as customs, cuisine, crafts, dress, celebrations, music, and traditional architecture. When Congress established the American Folklife Center in 1976, it defined American folklife as:

The traditional, expressive, shared culture of various groups in the United States, including familial, ethnic, occupational, religious, and regional groups. This expressive culture covers a wide range of creative and symbolic forms, such as customs, beliefs, technical skills, language, literature, art, architecture, music, play, dance, drama, ritual, pageantry, and handicrafts. These expressions are generally learned orally, through imitation, or during performances, and are usually preserved without formal instruction or institutional guidance (Bartis, 2016).

The types of materials we consider part of "folklife" include, but are not limited to, the following examples:

Folk and traditional songs, music, and dance, any form of orally-told story, such as jokes, legends, and family histories, sayings, including proverbs, riddles, rhymes, greetings, and insults

Folk beliefs and practices:
• Religion
• Healing
• Magic

Calendar customs:
• Annual holidays
• Saints' days
• Festivals
• Pageants

Rites of passage:
- Birth celebrations
- Coming-of-age ceremonies
- Weddings
- Funerals

Traditional food preparation:
- Recipes
- Symbolic meanings of food

Vernacular buildings:
- Houses
- Barns
- Mills
- Outbuildings

Clothing:
- Formal regalia
- Ethnic and traditional dress

Textiles and needlework:
- Knitting
- Weaving
- Quilting
- Embroidery

Handicrafts:
- Carvings
- Paintings
- Paper-cuts
- Beadwork
- Sculpture
- Braiding

In the 19th century, scholars aimed to document folklife, fearing its disappearance. They viewed it as cultural remnants from the distant past, thriving mainly in underdeveloped or isolated communities, and considered their work urgent. Today, folklorists see folklife as universal and dynamic. Some forms of traditional culture remain unchanged, others evolve, and new forms are continually created. Contemporary examples include internet-based virtual communities where new folklore emerges, such as urban legends spreading online and, in the news, or tradition-inspired art forms like bluegrass music and graffiti. Everyday activities like sharing jokes, rhymes for memory, or family cooking tips also constitute folklife, demonstrating its vibrancy in the 21st century.Different regions have various terms for "folklore" and "folklife." In Germanic and Scandinavian countries, you might encounter variants like "Volkskunde" in German or "folkliv" in Swedish. Romance languages often use a form of the word "popular," as in "traditions populaires" in French. In Spanish-speaking countries, "folclor" or "folklore" is commonly used, though it sometimes implies artificially staged versions of folk traditions, prompting the use of other terms.

The process of firsthand observation is known as fieldwork. Fieldwork involves recording or documenting what we see and hear in various settings, such as rural farming communities, city neighborhoods, local fish markets, or a grandmother's living room. Fieldwork entails gathering raw material for analysis, which may eventually end up in a library, museum, or even on Wikipedia. Perhaps most excitingly, fieldwork involves interviewing the greatest living experts on the traditions we study—individuals who are typically not rich or famous, but are well-known within their communities.

Folklife fieldwork can narrate a community's story in numerous ways, fostering community engagement and cultural revitalization. The outcomes of folklife fieldwork, including audio and video recordings, notes, drawings, and photos, can be used to create scholarly books, TV shows, essays, or exhibits. If properly cared for, these materials will be archived safely for future generations. This book aims to guide you through the documentation process.

5. THE COMPARATIVE METHOD

The initial formulation of what would later become the comparative method in anthropology was proposed by Kames in 1761. However, it wasn't until 1889 that E.B. Tylor consciously applied it as a method for the first time in his paper titled 'On a method of investigating the development of institutions; applied to laws of marriage and descent' at a meeting of the Royal Anthropological Institute of Great Britain.

During this period, there was a widespread belief in the scientific method, largely influenced by the Positive School, co-founded by French sociologist Auguste Comte. According to the deductive approach, theories were developed first, linking various pieces of data into a coherent pattern. Conversely, the inductive method

emphasized the collection of unbiased and theory-free data as the primary task of science, with universal theories emerging automatically once the data was available. The objective nature of science was highly valued, promoting the inductive mode of analysis as the correct scientific approach. However, early anthropologists soon realized that cross-cultural analyses posed significant challenges. They observed that certain aspects of 'primitive' societies were as 'advanced' as those of 'civilized' ones, complicating simplistic comparisons.

To address the challenge of comparing cultures, anthropologists began dissecting cultures into individual traits, each assigned a developmental sequence. This approach, evident in diffusionist and culture-area studies, allowed for isolating traits and tracing their evolutionary progression, often with the goal of measuring cultural 'progress' towards Western ideals, as advocated by Morgan and Tylor. Seeking to mirror the objectivity of the sciences, anthropology embraced an inductive approach, assuming ethnographic data collection to be objective. This facilitated breaking down cultures into trait-sized components for comparative analysis, leading to the classification of diverse traits into common categories, exemplified by the work of Frazer. Franz Boas, reacting against speculative theorizing, introduced historical particularism, emphasizing the uniqueness of each culture and the necessity of studying it within its historical context, rejecting cross-cultural comparisons.

The accumulation of ethnographic data without overarching theories led to dissatisfaction, prompting movements like functionalism and structural-functionalism, which viewed cultures as organic entities. These approaches focused on analyzing universal categories such as kinship and marriage across cultures, with Murdock's Human Relations Area Files (HRAF) representing an extreme attempt to categorize cultures based on common elements, continually updated with new ethnographic material.

Even today, Murdock's Human Relations Area Files (HRAF) remains a fundamental resource consulted by anthropologists engaged in cross-cultural analyses. Murdock outlined seven key points justifying such analyses:

1. Culture is learned.
2. Culture is inculcated.
3. Culture is social.
4. Culture is ideational
5. Culture is gratifying
6. Culture is adaptive.
7. Culture is integrative (Ghosh, 1996)

These postulates suggest that humans worldwide share significant similarities, supporting the notion that cross-cultural studies should unveil these commonalities. This perspective assumes that such studies will generate hypotheses, test the validity of theories, and critically analyze results across different regions, acknowledging any exceptions or deviations. In France, Levi-Strauss's Structuralism took cross-cultural analysis to an extreme, breaking down cultural elements into phonemes and morphemes in search of underlying cognitive structures.

Advocates of cross-cultural studies argue that the natural science paradigm can only be achieved through large-scale cross-cultural generalizations, conducted meticulously and comprehensively. They assert that analyzing isolated components of cultures yields analyzable entities.However, critics contend that culture cannot be reduced to separate components and argue against the fragmentation inherent in cross-cultural studies.

Opponents of cross-cultural studies argue that when cultural components are separated, they lose their contextual identity and can only be properly understood within the historical context of the culture as a whole. Ethno-methodologists further contend that cultures can only be comprehended from the perspective of insiders, challenging the notion of objective outsider analysis. According to this perspective, ethnographies are inherently subjective and uniquely interpreted, with their validity determined by acceptance or rejection from individuals within the described culture.

Cross-cultural studies can generally be categorized into two groups: idiographic studies, which delve into specific details within particular contexts, and nomothetic studies, which seek to establish general principles applicable across different societies and time periods. On a smaller scale, Eggan's method of controlled comparison is more appropriate, focusing on explaining differences among closely related cultures with shared ecological and archaeological foundations.

For broader generalizations, more quantifiable data is required, often subjected to statistical analysis. However, statistical correlations do not necessarily imply causal relationships, as highlighted by Galton. Naroll proposed a statistical solution to this problem by categorizing associations into historical, functional, and semi-diffusional/mixed historical-functional associations, although this does not fully address the critique against Weberian ideal types, which may not accurately represent real cultural phenomena.

Despite its challenges, the comparative method remains a valuable tool in anthropology for understanding differences and similarities among people from various regions. However, it relies heavily on data collected during fieldwork, where individuals are the primary focus.

Anthropologists employ various techniques to engage with individuals from different cultural backgrounds, often referred to as the "Others." Initially, the focus was on studying primitive societies, which later shifted to

peasants and eventually to urban populations. This shift in focus reflects anthropology's role in creating a subject-object dichotomy, where the anthropological endeavor itself constructs the concept of the Other.
The term "Other" encompasses not only people from distant lands but also individuals who may be neighbors or even family members. Within the Other, anthropologists encounter aspects of themselves, highlighting the complexity of cultural exchange and self-reflection within the discipline.

6. SCIENTIFIC MATTERS

When the scientist steps out from recording phenomena and offers a general statement of the nature of what is called 'reality', the ultimate nature of space, time and the beginnings of things, of life, of a universe, then he stands exactly where you and I do, and the three of us stand where Plato did and long before him Rodin's primitive thinker." -Stephen Leacock, Last Leaves

SCIENCE
"A branch of study which is concerned either with a connected body of demonstrated truths or with observed facts systematically classified and more or less colligated by being brought Under general laws, and which includes trustworthy methods for the discovery of new truth within its own domain"-The Oxford English Dictionary

SCIENTIFIC METHOD
"Principles and procedures for the systematic pursuit of knowledge involving the recognition and formulation of a problem, the collection of data through observation and experiment, and the formulation and testing of hypotheses"-Webster's Seventh Collegiate Dictionary. In social anthropology, science serves as a methodological approach, a mode of analysis enabling researchers to formulate propositions such as "if...then..." statements about the empirical world. This process often leads to the development of particular theories through systematic collection of relevant facts, although it may also result in the formulation of general principles.
Deductive logic involves using general conclusions to derive particular conclusions, assuming that under the same conditions, a particular case will yield the same conclusion. However, this approach may overlook exceptions present in specific cases, potentially leading to overly general conclusions formed without sufficient factual analysis.
Inductive logic, on the other hand, employs particular observations to derive generalized theories, a method commonly used in scientific inquiry.
The term "science" is too abstract to be directly applied to the scientific method, necessitating certain assumptions about the universe and its relationship with humans. These assumptions include the existence of the world, our ability to know it through our senses, and the causal relationships among phenomena. While these assumptions cannot be empirically proven without relying on one of the assertions themselves, they are accepted as true, laying the groundwork for the practical application of the scientific method.
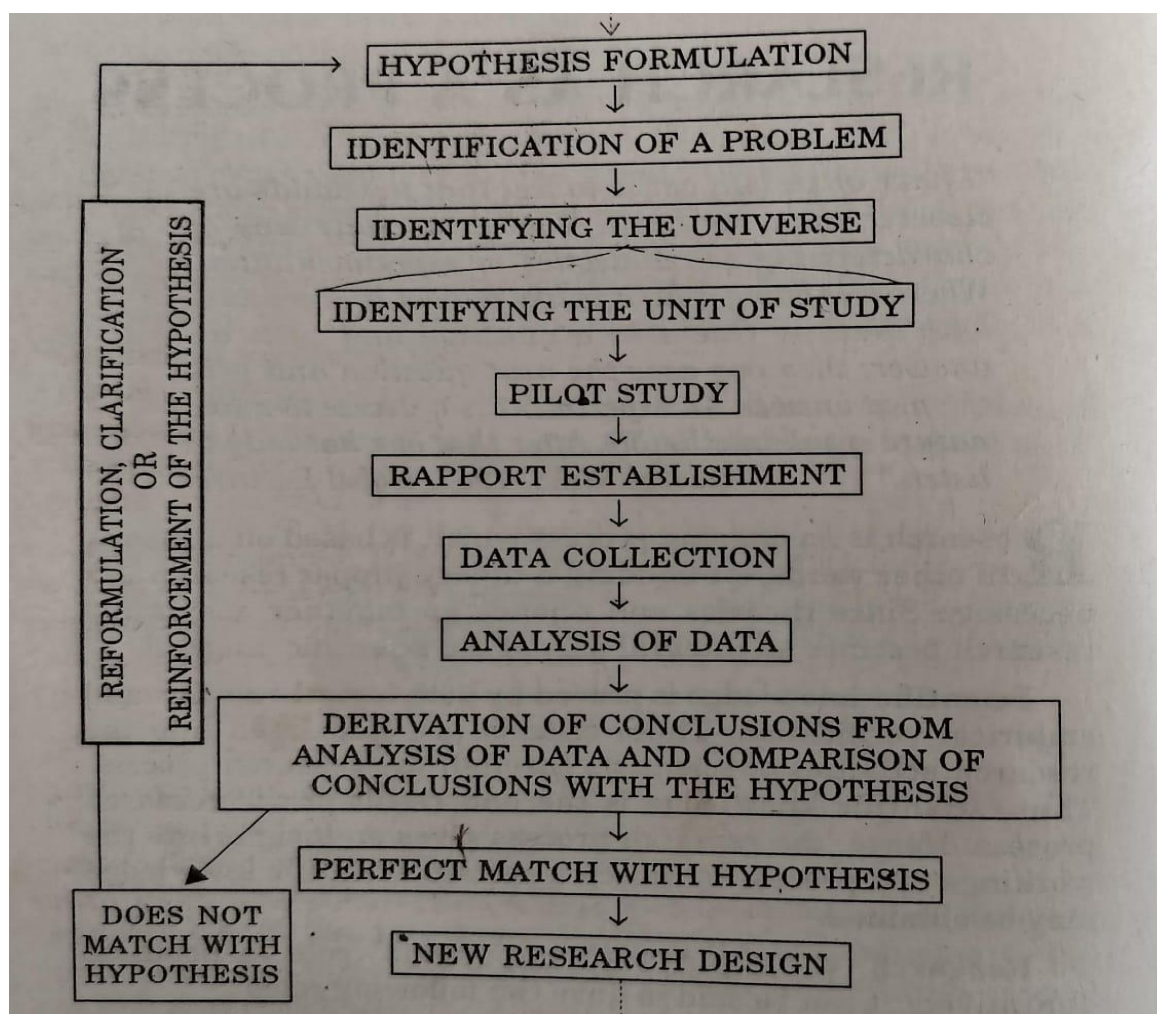
7. RESEARCH AS A PROCESS

"I have often had cause to feel that my hands are cleverer than my head. That is a crude way of characterizing the dialectics of experimentation. Where it is going well, it is like a quiet conversation with Nature. One asks a question and gets an answer; then one asks the next question and gets the next answer. An experiment is a device to make nature speak intelligibly. After that one has only to listen." **-George Wald, 1967, Nobel Lecture**(Ghosh, 1996)
Research is an ongoing process rooted in theory. Essentially, proper research is essential for developing theories, as theories and science are inherently interconnected, making research a fundamental aspect of the scientific method. Scientific knowledge is validated through both logical reasoning and empirical evidence. These criteria guide scientists' research activities, ultimately leading to the generation of scientific knowledge. Therefore, the research process provides insights into the mechanisms through which scientific knowledge is attained. Research plays a crucial role in science, serving the following functions:
1. It initiates theory.
2. It reformulates the existing theory.
3. It clarifies the existing theory.
4. It reinforces the existing theory.

The research process follows a structured path, progressing through regulated steps until completion. This structured approach is crucial in science, ensuring that each research activity can be replicated by skeptics. The typical steps involved are outlined below.

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                    ↓
          ┌→  HYPOTHESIS FORMULATION
          │           ↓
          │   IDENTIFICATION OF A PROBLEM
          │           ↓
  R  R    │   IDENTIFYING THE UNIVERSE
  E  E    │           ╱│╲
  F  I    │   IDENTIFYING THE UNIT OF STUDY
  O  N    │           ↓
  R  F    │       PILOT STUDY
  M  O    │           ↓
  U  R    │   RAPPORT ESTABLISHMENT
  L  C    │           ↓
  A  E O  │   DATA COLLECTION
  T  M R  │           ↓
  I  E    │   ANALYSIS OF DATA
  O  N    │           ↓
  N  T    │   DERIVATION OF CONCLUSIONS FROM
  ,       │   ANALYSIS OF DATA AND COMPARISON OF
  C  O    │   CONCLUSIONS WITH THE HYPOTHESIS
  L  F    │           ↓
  A       │   PERFECT MATCH WITH HYPOTHESIS
  R  T    │           ↓
  I  H  DOES NOT
  F  E  MATCH WITH    NEW RESEARCH DESIGN
  I  H  HYPOTHESIS
  C  Y
  A  P
  T  O
  I  T
  O  H
  N  E
     S
  O  I
  R  S
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Source- Meeting with the others.
Author- Abhik Ghosh

1. Hypothesis formulation and the identification of a problem.
2. The identification of the universe and the unit of study.
3. Pilot study and rapport establishment.
4. Data Collection.
5. Analysis of data
6. Derivation of conclusions from data analysis and comparing it with the hypothesis.
7. Reformulation, clarification or reinforcement of the hypothesis.

It's crucial to consistently review and refine the methodology to prevent errors, ensuring rigorous scientific analysis. As each research endeavor leads to a theory, which then becomes the basis for subsequent research, the process appears cyclical, continually expanding empirical knowledge. Research plays a pivotal role in science by generating new insights and validating existing ones. Its primary function is to enhance understanding and provide clarity to hypotheses. As Pendleton Herring noted, research not only adds to knowledge but also helps dispel outdated assumptions, making it indispensable in scientific inquiry.

8. THE CONCEPT

The formulation of a theory involves creating a model that resembles reality, focusing on essential features and their relationships. Science examines only parts of a larger reality, which are conceptualized to fit the investigator's interests and aid communication. Concepts are symbolic representations of phenomena, described as "meaningful objects" facilitating perception. McClelland defines concepts as concise representations of various facts. Thinking involves language, a system of symbols with rules for combining them, where concepts play a significant role. All concepts are abstractions, capturing only one aspect of reality, and are created from impressions or perceptions.

A common mistake involves conflating concepts with phenomena. Concepts are tools for communication within specific frameworks, relying on shared understanding among individuals. In social research, concepts serve as abstract representations of shared ideas, distinct from the actual phenomena they symbolize. Attempting to treat concepts as tangible phenomena is erroneous since they merely symbolize reality without

replicating it. Concepts are derived from sensory experiences and perceptions, facilitating the transmission of information and perception.

They provide structure and coherence to abstracted phenomena, facilitating consensus among scientists and interaction with the environment. Concepts enhance sensitivity to experiences and perceptions, expanding the scope of observation while narrowing others. They aid in classifying and generalizing scientific categories, structures, and orders, yet they inherently simplify the attributes deemed essential by scientists. Concepts are fundamental to theories, shaping their structure and content, thereby constraining and crystallizing them. The relationship between concepts and theories is intimate, as systematically linked concepts give rise to theories, underscoring the importance of concepts in defining and shaping theories.

9. THE VARIABLE

Dante once cautioned against hasty judgment, while Poincare likened science to a construction built from facts.

Research begins with conceptualizing problems, which transition into variables when moving from abstract to empirical realms. Variables are empirical attributes with multiple values, forming the basis of theories and hypotheses. These variables are crucial in research design, categorized as dependent, independent, discrete, continuous, qualitative, or quantitative based on their nature and relationship within the study.

Dependent variables, also known as criterion variables, are those that researchers seek to explain, while independent variables, or predictor variables, are expected to account for changes in the dependent variables. The independent variable is considered the explanatory factor, presumed to cause variations in the dependent variable, which represents the anticipated outcome. Control variables serve to mitigate the risk of erroneously attributing explanatory power to independent variables. Mathematically, this relationship is often expressed as $y = f(x)$, where y represents the dependent variable and x the independent variable. These variables can interchange roles, as there's no inherent permanence to their positions. They operate within cause-and-effect relationships, often involving intervening variables.

Variables can exhibit positive, negative, or zero relationships, reflecting the direction and strength of their association. However, these distinctions are analytical and context-dependent, serving the research objectives rather than reflecting inherent properties of the variables themselves. Ultimately, the researcher's interpretation of the variables' roles is shaped by their research aims and objectives.

Social scientists often need to evaluate how multiple independent variables influence one or more dependent variables, as individual independent variables typically account for only a portion of the variation observed in the dependent variable. This necessitates the introduction of additional independent variables to capture the remaining variation.

Variables that lack clear boundaries between categories are termed continuous variables, while those with distinct boundaries are referred to as discontinuous or discrete variables. Quantitative variables encompass categories that vary explicitly in degree, while qualitative variables involve classification into categories that may not exhibit gradation or a specific order.

10. THEORY AND FACTS

THEORY

A theory is entirely speculative (at most a calculated guess) unless and until scientific methods are used to prove it. Theory may be said to be a statement which explains the occurrence or existence of certain facts or phenomena. In other words, it is a system of explanations.

Stuart A. Rice advocates for utilizing quantitative expressions of social facts in scientific endeavors whenever possible. This approach minimizes individual biases, allows for verification by other researchers, clarifies the margin of error, and replaces vague descriptive language with precise mathematical notation.

When formulating theories, researchers can either derive them from observed facts or start with a foundational theory and deduce predictions from it. The latter approach involves confirming these predictions through empirical research.A theory, essentially a speculative notion until proven scientifically, serves as an explanation for observed facts or phenomena. It's a systematic framework that elucidates relationships and fundamental principles underlying a particular phenomenon, summarizing empirical findings, organizing information, and delineating interconnections between various phenomena.

Field workers rely on a coherent theory within their field of study to effectively carry out their work. This theory must be robust, well-articulated, and relevant to current issues and interests, even if it's largely implicit and based on common sense.

FACT

The distinction between theory and speculation is often blurred, with a theory remaining speculative until it's validated through evidence. Once validated, a theory becomes a fact. While facts are typically perceived as definitive and unquestionable, scientists view them as empirically verifiable observations, with theories representing relationships between these observations.In scientific practice, facts emerge from observations that are not random but rather meaningful and theoretically relevant. Without a theoretical framework, the

vast array of possible observations and methods would hinder the accumulation of knowledge across generations. Theory provides the basis for predictions, enabling control over the natural world.

Rather than being opposed, facts and theories are intricately intertwined. Scientific progress is characterized by a continual interaction between theory and observation. Facts contribute to the construction, refinement, and sometimes rejection of theories, while theories provide context and meaning to facts, guiding their interpretation, classification, prediction, and understanding. Ultimately, facts and theories mutually inform and enrich each other, highlighting their close relationship in scientific inquiry.

The proponents of the Procrustean Theory erred by overly prioritizing theory, believing it could solely account for facts, disregarding the inherent interconnection between theory and facts. For a social scientist to maintain neutrality and objectivity, true objectivity requires seeing facts within theories and theories within facts. Recognizing that a collection of facts, rather than individual ones, contributes to understanding amidst chaos signifies progress in scientific comprehension. As stated by W.I. Thomas, a fact's scientific value lies in its relationship with other facts. Often, seemingly mundane facts hold significant value, while emotionally striking facts may be isolated or simplistic, lacking broader contextual significance.

11. HYPOTHESIS

Observing social behavior without considering the broader social context in which it occurs is often of limited value, as highlighted by Kurt Lewin's perspective. Friedrich Nietzsche emphasizes the inherent subjectivity in perceiving the world, underscoring the role of perspective in shaping our understanding.

Facts derive their meaning from theoretical frameworks and represent relationships between concepts. Theory organizes and interprets facts, guiding the search for new evidence. Hypotheses articulate specific expectations about what will be found.

When facts are organized and related, they form a theory grounded in empirical evidence. The logical analysis of factors within a theory can led to the deduction of additional relationships, which are articulated as hypotheses. These hypotheses, if confirmed, contribute to future theoretical frameworks. The close relationship between theory and hypothesis is underscored by William H. George.

Although theory and hypothesis are intertwined, it's beneficial to view them as complementary facets of scientific knowledge generation. A theory establishes logical connections between facts, leading to the deduction of hypotheses that serve as testable propositions. Hypotheses are forward-looking and subject to empirical testing, challenging common sense and prompting inquiry. They epitomize the skepticism inherent in science, demanding empirical validation for any claim. Successful theories foster the creation of additional hypotheses, which, when tested, either support or refute the original theory, thereby advancing scientific understanding.

Crafting useful hypotheses is a challenging aspect of the scientific method. Hypotheses must be empirically testable and grounded in clear, well-defined concepts. They should be specific rather than vague, with a solid theoretical foundation, ensuring predictability of future observations. Variables within hypotheses should be explicitly defined, and overly generalized hypotheses should be broken down into smaller, more specific ones. Additionally, hypotheses should outline the methods for testing them.

There are two approaches to working with hypotheses. Robert Merton and others advocate for preconceiving hypotheses before fieldwork, providing clarity but risking theoretical bias. In contrast, George Dalton and others propose formulating hypotheses in the field, offering a fresh perspective. Experimental research typically employs hypothesis testing, while ethnographic studies often proceed without predefined hypotheses. Social anthropologists usually enter the field with a comprehensive understanding of what they aim to explore and how to approach it.

In summary, a hypothesis is a question posed to the empirical world to obtain answers. Formulating a hypothesis involves multiple iterations and can range from simple observations to complex relationships between variables. Hypotheses originate from various sources, including cultural influences and individual experiences.

12. PROBLEM IDENTIFICATION

Prior to initiating any research, it's essential to identify a problem. This problem typically stems from the researcher's existing knowledge base. Subsequently, the analysis and identification of variables are conducted, distinguishing between dependent and independent variables. Using this information as a foundation, hypotheses are formulated.

13. THE CLASSICAL RESEARCH DESIGN

According to E.A. Suchman, there isn't a single, definitive research design; rather, research design is shaped by practical considerations, methodological preferences, and theoretical orientations. Different researchers may develop distinct designs based on their unique perspectives. A research design serves as a flexible framework, offering guidance rather than a rigid plan. Research design involves methodical planning and

direction of a research project, taking into account factors like time, resources, data availability, and ethical considerations. It encompasses problem formulation, variable identification, hypothesis formulation and testing, methods of analysis, and presentation of findings in the report.

Classical research designs can be categorized into various types, each tailored to the specific requirements and constraints of the research project.

13.1.   Exploratory study
This type of study is conducted as an initial exploration, typically preceding the formulation of a hypothesis.

13.2.   Descriptive study
These studies aim to provide an accurate description of a phenomenon, often in order to test hypotheses and explore relationships between various dimensions. The goal is to delineate the characteristics of a population, with surveys focusing on a subset of the population and censuses encompassing the entire population, particularly focusing on demographic characteristics.

13.3.   Experimental study
Experimental studies, more commonly utilized by psychologists but also relevant in sociology and anthropology, involve controlling or manipulating variables to observe their effects on a phenomenon. Even if the experiment yields unexpected results, it still holds value. Experimental research designs aim to demonstrate causation and typically involve an experimental group, a control group, and manipulation of variables.

Considering the significant role of time in research, the design involves comparing an experimental group with a control group over a period of time. The introduction of a variable (X) to the experimental group allows for observation of changes (Y2 - Y1) within the community before and after the intervention.

Several challenges arise in such studies:

The Problem of Equivalence

Communities or groups being studied may differ in culture, posing challenges for scientific comparison. To address this, researchers may employ random selection to minimize bias, deliberately match criteria to ensure similarity, or replicate the study to verify findings. However, even within the same culture, individuals may exhibit notable differences.

The Selection of Variables

The chosen variable may not be the sole cause of observed changes. To mitigate this, researchers may replicate the study, incorporating control groups to compare outcomes accurately.

Additional types of research designs include:

13.4.   Before-and-after research design
This design involves conducting a pre-test on a group, followed by a post-test on the same group, without a control group. The differences between the two tests are analyzed to determine the outcome, often in the context of an intervening event such as an election or development program. This design is commonly used in industrial settings to explore methods of increasing production.

13.5.   Common sense experimental study design
This design entails dividing participants into quasi-experimental and quasi-control groups to account for multiple manipulated variables. This approach acknowledges the challenge of strict control in experiments with multiple variable manipulations.

13.6.   Survey design or static group study design
In this design, no manipulation of variables occurs. Data is collected from two groups, one with high values of a variable and the other with low values, typically used for descriptive studies.

13.7.   One shot case study design
This design involves only an experimental group without pre-test studies. Post-test studies are conducted after a specific event, with information gathered from government records or through reconstruction of past events by informants.

Data for research can be sourced either from government records or through reconstructing past events with the help of informants. An example of this approach is F.G. Bailey's study of the Indian village Bisipara in Orissa. Since Bailey's study was not conducted over a long period and focused on a specific timeframe, it can be classified as a synchronic study. In contrast, Raymond Firth conducted two studies on the Tikopians, first in 1949 and then again in 1952. This can be categorized as a dual synchronic study, as it involves two synchronic studies conducted at different points in time.

14.   IDENTIFICATION OF THE UNIVERSE AND THE UNIT OF THE STUDY

14.1.   Identification of the universe
The universe refers to the defined population on which a study is conducted, which could be a specific caste, religious, geographical, or socioeconomic group. Due to the large size of human populations, sampling methods are often employed. It's crucial to accurately and clearly identify the universe.

In practical terms, considering the constraints of theory, hypothesis, problem formulation, and research design, the universe represents the entire population eligible for the study. However, this population is typically too vast for any single investigator to cover comprehensively. As the entire universe is often too vast for comprehensive study, a smaller and more manageable group is selected. This subgroup may be chosen

purposively or through sampling methods. The outlines and characteristics of the universe are clarified by conducting a census, which aids in selecting the specific group/s for study.

14.2. The unit of the study

Within the broader universe, the unit of study is further specified, forming the actual or effective universe. These units are identifiable subsets within the universe. If the unit of study is too large, random sampling may be employed, ensuring that these units accurately represent the universe.

It's important to consider the Law of Inertia of Numbers, which emphasizes that the stability of study results increases with the number of observations made.

15. PILOT STUDY

The pilot study serves as the initial exploration in a field, guiding researchers towards appropriate investigations based on population size and time constraints. It acts as a trial run for research methods, allowing for adjustments to perfect techniques before full-scale implementation. For example, it ensures the questionnaire contains adequate and relevant questions for successful fieldwork. By preemptively identifying challenges and modifying techniques to fit field conditions, the pilot study provides valuable guidance towards reaching conclusive findings. Its effectiveness relies on factors such as population size, time constraints, and funding availability.

16. RAPID RURAL APPRAISAL (RRA)

Many developmental schemes have been made in the rural areas but the fact is that many of such schemes never reached to the beneficiaries, instead inversely affected the population by disempowering the majority and led to increase disparity between rich and the poor. Therefore, quick surveys and fieldwork researches is needed that would lead conclusively towards the participation by the people who would actually bear the strain of any development project.

RRA was developed by Robert Chambers and Gordon Conway with support from International Institute for Environment and Development (IIED). This emerging new methodology were taken up by R. Chambers, Gordon Conway, Peter Hildebrand, Michael Collinson; and others. Flexibility is the crucial aspect of the RRA process, shortens the learning periods compared to conventional modes and also shortens the time period and process of research analysis. There are three main principal thoughts for the creation of RRA which are as follows:

i. Earlier developmental concepts mislead the concept of progress due to which other societies who is far beyond the western society had to be helped in their development up the ladder. Since, solution to a particular problem invariably leads to another set of problems, therefore, it is more useful to perceive development as constant adaptation and readaptation and additional corrective actions are needed for proper monitoring of the emerging new issues.

ii. The pioneer of Cybernetics, a field of science is Norbert Wiener in 1948. He emphasized that system is much more than a mechanism or we can say, a whole is greater than the sum of its parts. The parts of a system interact and adapt to each other through a process of mutual influence. A system maintains and functions itself through feedback as a well-designed feedback system permits an organism, an organization or a society to learn as it goes along. This also applies to implementation of developmental programmes not only in terms of obtaining a steady flow of information but also in terms of building the programmes and reacting to new information in a timely manner

iii. Different group of people have different outlook towards the reality. In fact, in some ways rural knowledge may be seen as superior as they have a greater experience in dealing with the rural scenario. Therefore, it is incumbent upon development professionals to learn as much indigenous knowledge as possible. From this, a technique of triangulation is developed that means a process by which anything is looked at in at least three different ways. In RRA, this strategy is used in areas like: Team composition (as RRA team is multi-disciplinary), Units of observation (as by stratifying the sample and getting the views of several sub-sections, a better understanding of situation is obtained), Research modes (divergent research methods are used to collect the same information).

According to a conference on RRA held at the Khon Kaen University in Thailand in 1985, RRA may be defined as:
"Any systematic activity designed to draw inferences, conclusions, hypothesis, or "assessments", which includes the acquisition of new information, in a limited period of time". (Proceedings, 1987; 49) (Ghosh, 1996)

RRA essentially has four subsets. These are:
1. Participatory Rural Appraisal
2. Exploratory Rural Appraisal
3. Topical Rural Appraisal

4. Monitoring Rural Appraisal

16.1. Some of the basic principle of RRA are:
1. Exploratory
2. Rapid Learning
3. Interdisciplinary
4. Triangulated
5. High use of Indigenous knowledge
6. Highly Iterative
7. Progressive learning process
8. Done in multi-disciplinary teams

These all leads to increasing testing/validation/specification of RRA methodology.
It is seen that "much good RRA is little more than organised common sense; freed from the chains of inappropriate professionalism, and informed by continuous doubt and self-criticism".(Chambers; 1987:45)(Ghosh, 1996)

16.2. Application of RRA (Rapid Rural Appraisal):
1. To explore, identify and diagnose rural situations, problems, or issues and to assist in policy formulation and decision making.
2. This method helps in designing, implementing, monitoring and evaluating the programmes, projects and developmental actions.
3. Respond to emergencies and disasters and improve, supplement, or compliment other types of research.

16.3. Demerits of RRA:
1. Due to short duration in the field, there is a lack of rapport leading to misleading replies.
2. Short period leads to observation of a snapshot (synchronic image) of the society. In such hurry, hidden things may be overlooked or we can say, diachronic processual approach is overlooked.
3. There are various factors that lead to the widening of disparities between the rich and poor in development programmes which includes ignoring people of deprived zones, biases leading from personal contacts, especially when the interviewer is unaware of his/her own biases, engaging in field at a particular time/season.
4. Biases of politeness and protocol may cause a lack of volunteered information, among other things.

"The danger is that RRA, by saving time, will merely mean that appraisers spend less time in the field, and the poorer remain, as in the past, unseen and unheard". (Chambers; 1987:46).(Ghosh, 1996)

17.PRA (PARTICIPATORY RURAL APPRAISAL)

PRA involves a systematic but flexible approach conducted in the field by a multidisciplinary team to quickly gather new information and generate new hypotheses for rural development. Its aim is to achieve development that is socially acceptable, economically feasible, and environmentally sustainable. PRA operates on the premise that rural communities are crucial in reversing natural resource degradation and boosting food production.
PRA presupposes that communities require dedicated local leadership and effective rural institutions to succeed. It aids communities in mobilizing their human and natural resources to identify issues, reflect on past successes, assess local institutional capacities, prioritize opportunities, and develop a detailed and location-specific action plan—known as a Village Resource Management Plan (VRMP). Managed and implemented by the community members who benefit most, VRMPs provide a practical framework for supporting community-driven initiatives.
PRA allows multidisciplinary teams of experts and rural leaders to collaborate closely, enhancing their understanding of local issues, needs, and opportunities. By focusing on natural resource management, PRA integrates various development sectors, such as agriculture, water resources, and forestry, and encourages collaboration across disciplines like economics, sociology, engineering, and biology. It also fosters cooperation among different institutions, including government, NGOs, universities, and donor agencies.
PRA serves as an effective tool to align community-defined development needs with the resources and technical expertise of government, donor agencies, and NGOs, thereby combining traditional skills with external technical knowledge in the development process.
A typical PRA consists of eight well-defined steps, starting with:
1. Site Selection and Clearance from Local Administrative Officials
PRA can be initiated in a community for two reasons:
a) The community may request assistance.
b) A government extension officer or field worker identifies a village needing development assistance.

Teams typically consist of a team leader and two or three core members from ongoing groups, supplemented by technical extension officers (such as water, agricultural, soil conservation, or cooperative agents) from the local area, as well as village leaders and interpreters when necessary. The team should include both men and women, with a mix of technical and social science expertise. All members should have significant experience working at the local level and a solid understanding of rural institutions and processes.

2. Preliminary Visits to the Site
This step involves:
a) Introducing PRA to a broad segment of the community, including its leaders, to prepare them to develop their own action plan (VRMP), using minimal external resources and agencies. This also includes reviewing the successes and failures of past initiatives.
b) Conducting a community review by the community members themselves.
c) Organizing meetings to encourage active participation from all parties.

The PRA team leader should ensure that local administrative officers and the community are kept fully informed about the progress of the PRA exercise.

3. Data Collection
RRA/PRA are known for their efficient and optimized data collection methods. The data gathered should be manageable and context-specific.

I. **Collection of Secondary Data:** This involves gathering existing information about the site.

II. **Field Data:** This can be divided into:

a) Space-Related Data
i. Creating sketch maps of the site, including resources.
ii. Conducting a transect, which is a cross-sectional survey through the community to capture the diversity of ecosystems, land use, etc. The transect can be oriented in any direction (e.g., North to South) as long as it covers all major ecological and production zones and represents the community's topographical, resource, and socio-economic variations. Larger and more diverse communities may require multiple transects.

b) Time-Related Data
i. **Time Line:** A chronological list of key events in the community's history to identify past trends, events, problems, and achievements, reflecting the community's heritage and environmental knowledge.

ii. **Trend Lines and Trend Analysis:** These tools help the PRA team:
a. Understand how the community perceives changes over time in various sectors.
b. Integrate key changes into a village profile to simplify problem identification.
c. Organize potential opportunities for the community to consider.

iii. **Seasonal Calendar:** This identifies yearly cycles, such as labor availability, project activity timing, periods of disease and food shortages, and cash flow variations.

III. Social Data
Farm Household Interviews: Using a mix of participant-observation and semi-structured interviews, the following conditions should be maintained:

The interviewer should introduce themselves and state the interview's purpose.
i. Respondents should be assured of complete confidentiality, with no names recorded or individual information shared.
ii. Local protocol should be followed, and rapport should be established to make respondents comfortable.
iii. Clarifying questions should focus the interview.
iv. Encouragement and positive feedback should be given.
v. Patience and careful listening should be practiced.
vi. The questionnaire should serve as a guideline, allowing for new questions to emerge.
vii. Yes/no questions should be avoided.

Institutions and Institutional Analysis: This helps the PRA team:
i. Quickly learn about the activities of various community groups and organizations.
ii. Understand how the community views these institutions and rank their contributions to community development.
iii. Assess the relationships among these institutions by creating a diagram of their importance and interactions.

IV. **Technical Data** should be collected through detailed, section-specific studies.

4. **Data Synthesis and Analysis**
5. **Problem Identification and Opportunity Setting**
6. **Ranking Opportunities and Preparing a Village Resources Management Plan (VRMP)**

A VRMP documents the community's development priorities and potential, serving as the basis for development. The Sublocation Development Committee uses it for programming and project development, and it is forwarded to the District Development Committee for potential funding. It includes:

- Development priorities agreed upon by the community
- Proposed actions and requirements
- Duties and responsibilities for individuals and groups
- Work schedules
- Areas where external assistance is needed

Based on these rankings, the community recommends specific actions to achieve the activities. The appropriate technical officer advises on material inputs and estimated costs, while villagers identify local resources and labor that can be mobilized within the community. There is extensive dialogue and consultation during this phase, with decisions made democratically.

A schedule should link duties and roles to a timeline, helping villagers and others evaluate their progress. If external resources are needed, it should be specified which external institution will provide them, who will ensure their acquisition, and when they will be needed. By involving donors and NGOs in this process, they may take on certain responsibilities in the VRMP.

While PRA theoretically concludes with the preparation of the VRMP, the process has two additional stages.

7. Adoption and Implementation of the Plan
8. Follow-up, Evaluation, and Dissemination of Findings

One or more formal or informal local leaders are needed to organize work groups, follow up on schedules, ensure materials are gathered, coordinate activities with extension officers, and maintain contact with Division and District administrative officials. They also help to secure additional funding from various sources. Government officers' commitment and support, particularly at the District and Division levels, are essential. To ensure the PRA process's success, the following components and aspects of a typical program design are recommended:

- A village or Sublocation development, natural resources committee, or Village PRA Coordinating Committee to manage and monitor specific activities
- An environmental committee at the district or division level representing multiple development sectors, including members from NGOs
- Sound technical management, typically through the locally-used extension officer
- A financial management system, accountable to the village leadership, designed to receive funds for purchasing materials and other resources
- A mechanism for technical officers, village leaders, and community members to visit nearby sites with effective resource management practices and receive training in natural resources management.

18.   FIELD-WORK TRADITION

Ethnographic field-work is research carried out by the Anthropologists, sociologist, folklorist among the living people in different parts of the world. In the beginning era of the empirical field study, descriptive ethnographic works were taken up and simple monographs were written by the early ethnographers.

Earlier, anthropologist relied on secondary data from different sources like the travellers, traders, missionaries for information and were known as 'Arm Chair Anthropologist', like that of James Frazer. Anthropological expeditions began in America when Boas in Baffin Land and British Columbia studied the Kwakiutl Indians, the Eskimo, etc. and then followed by A.C. Haddon of Cambridge in England who led other scholars to conduct research in the Torres Straits region of the Pacific in 1898 and 1899. Many of the fieldworkers were not anthropologist by profession, they were specialized in different branches but their immense contribution in field-work leads them to be known as world-famous scholars in anthropological filed-work. Some of the anthropologist having differently trained background are Seligman(pathologist), Elliot Smith(anatomist), Malinowski (scholar of Physics), Radcliffe Brown (trained in experimental psychology), H. Spencer(philosopher), L.H. Morgan(lawyer) and many others.

In India, some of the eminent Anthropologist who have done pioneering fieldwork among different tribal societies and have also done village studies are: K.P. Chattopadhyay, T.C. Das, D.N. Majumdar, N.K. Bose, A. Aiyappan, Balakrishna Aiyer, G.S. Ghurye (studied Indian Sadhus), M.N. Srinivas (studied Coorg's of Rampura) and others.

18.1.   Major Fieldwork challenges:

During the first few weeks of the field work, one can face many serious problems in the field. The problem is greatest among the inaccessible tribal societies where the group is small and the stranger is seen as a potential threat to the group. The role one assumes to play at the beginning of the field-work can affect research work during the later phases of field-work. A researcher can face 'Cultural shock' leading them to have confused emotions and become disoriented because of differences in cultural traits and environment from which the researcher originally belongs but it has only temporary effect and after few days he will be

able to take up the field-work seriously. The researcher who is not fluent and familiar with the language of the native, faces some problem in the beginning but can overcome by daily conversation.

18.2. Rapport Establishment:

As, a researcher is all alone and is cutoff from his original native place, he has to be dependent on the natives around him in the field and would need company to carry on his further fieldwork for data collection. He has to build a good friendship and companionship in the field. Many a time fieldworker carries some sort of gifts with them for the natives in the field to establish a rapport with them. A true fieldworker indulge himself in the field, with the people and create a bond that leads to emotional attachment that sometimes last even after completion of fieldwork. This indulgent helps the researcher in many ways like knowing the native's dialect, their culture, totems and taboos, finally ending with rapport creation, hence an integral part of field-work tradition.

18.3. Data collection

It is the purposive assemblage of information that is relevant to the research area and it depends upon the nature, purpose and the scope of investigation on one hand and availability of resources and time on other hand.

The statistical data are majorly classified into two types: Primary data and Secondary data. Primary data are the empirical data collected by the researcher himself through personal interviews, mailed questionnaire and schedule whereas, the later are collected by other in the past or are collected from other secondary sources may be through any e-platform, organisations (private or government), magazines or any other publication reporting data collected by other authorities or agencies. Once the primary data is used, it loses its originality and becomes secondary for others.

18.4. Interpretation and Analysis of data:

After completion of data collection, this stage of interpretation and analysis is required to draw a scientific conclusion that can be generalized. Editing, coding, classification, tabulation are the processing operations for analysis of a research problem.

Statistical analysis of large number of raw data is of prime importance as it compresses the data and make it representable so that it is convenient for the reader and can be used further for analysis. There are various statistical measures which are used to summarize the research data:

i. Measures of Central Tendency or statistical average [arithmetical average, mean, median, mode]
ii. Measures of dispersion [range (quartile range, inter-quartile range), standard deviation]
iii. Measures of Skewness [measures of asymmetry]
iv. Measures of relationship (correlation, regression).

18.5. Various approaches in field-work:

The approaches are applied to collect data and for scientific data analysis which are as follows:

i. Synchronic Approach

Synchronic approach is directly link with empirical field-work where the first-handedly ethnographic data are collected and analysed. Earlier scholars never used synchronic approach as trend of empirical data collection was not there.

ii. Diachronic Approach

Diachronic approach is not based on the empirical data rather it is based on indirect data or the secondary data needed for research.

Usually, the researcher combines both the approaches to write a balanced report usually from an analytical point of view.

iii. Inductive Approach

In Inductive approach, the unit of research is very small but the conclusion drawn is in a wider scale or in generalized form.

We can take a logical example like:
Bamboo leaves contains chlorophyll,
Spinach contains chlorophyll,
Therefore, all green plant contains chlorophyll.

iv. Deductive Approach

Deductive approach is just reverse of inductive approach, as unit of study is very large and conclusion drawn is in small scale or specific.

Logical example for this approach:
All green plants contain chlorophyll,
Bamboo is a green plant,
Therefore, bamboo contains chlorophyll.

v. Textual and Contextual Approach

Textual approaches are based on the study of textual references concerning work. For example: An anthropologist L.P Vidyarthi, when studied 'Sacred Complex of Hindu, Gaya' (1961), he first read several puranas in which the myths and mahatmas has been described and thereafter he collected the field materials. Textual approaches become necessary not only in the study of Indian civilization but also in the study of the

culture change and other problem-based analytical research work where consulting the textual reference is must.

Whereas, Contextual Approach is applied in the field to collect empirical data. This approach resembles with synchronic approach.

vi.   Emic and Etic Approach
Emic Approach deals with the insiders or the natives view of a culture where the researcher usually present the insider's view.

Whereas, Etic Approach deals with outsider's view of culture or we can say that when an outsider studies the culture with special reference to the native's language, it is called an etic approach.

The terms 'Emic' and 'Etic' was coined By Kenneth L. Pike, a linguist in 1954.

vii.   Micro-Macro Approach
This approach resembles with inductive-deductive approach. This approach is usually applied in the field of planning and launching the developmental schemes specially for the tribals, used by applied anthropologist in local level or micro-level, regional level or meso-level and national level or macro-level.

The themes, issues, aims and objectives and hypothesis are to be taken under consideration by the researcher for selecting relevant approach.

18.6.   Field-work Methodology
Methodology can be defined as the methods, tools and techniques used for collecting, processing and analysing of field-data associated with particular research topic to draw the conclusion.

There are various field work techniques for scientific data collection which are mentioned below:

i.   Interview Method
This method of data collection is simple but informative as researcher communicates personally with the interviewee. The interviewee or the informant must be chosen meticulously as this method can be a powerful instrument for obtaining information and his/her i.e. the interviewees words will directly be responsible for research outcome.

There are various types of interview method like individual interview method, group interview method, structured and unstructured interview, formal and informal interview.

'Interview guide' is an important technique which involves the systematic arrangement of topics which are to be covered in an interview without allowing respondent going off-track.

ii.   Observation Method
Observation method is reliable for understanding social behaviour and helps in obtaining the factual details which help in avoiding the discrepancies between the oral and secondary form of data collection. This method majorly is of two types: Participant and Non-Participant method.

In 'Participant Method', the researcher collects data by participating in the activities of the natives having an insight experience of the native, their behaviour, lifestyle, culture and many other things required for specific research. In anthropology, Bronislaw Malinowski popularized the method of participant observation.

Whereas, in 'Non- Participant Method', the researcher does not participate in the activities like ceremonial activities, festivals and others rather collects data by observing from a distant. However, a complete non-participant method is difficult to achieve. So, a 'Quasi Participant observation' is preferred. It is in-between being totally participant and totally non-participant and depending on the circumstance, the degree of participation may be regulated by the observer.

Other forms of non- participant observation are: Controlled observation and non-controlled, structured and unstructured observation.

There are two types of roles played by the investigator/fieldworker during the field-work. Those are 'Covert' and 'Overt', covert role is played by the investigator who would wish to hide the true purpose of their inquiry and is used in the case of hostile societies or groups; or where the people are suspicious of any interference in their lives. And the later, is played by the researcher who are open to the people they study, there is no such hidden role which is spurious to the natives. This one is he most ideal form of study.

iii.   Genealogical Method
Genealogical method was developed by W.H.R Rivers in the study of the Melanesian society. This method has a great importance in studying social structure as it is used in the study of some of the social institutions like kinship, family and marriage to trace relation using specific symbols for different kinships and affinal relation with the help of pedigree chart. 'Ego' is the important male or female informant through which the relations are traced and genetical relationships are emphasized. In anthropology, this method was nicely demonstrated by L.H. Morgan in his study of Iroquois Indians.

iv.   Schedule and Questionnaire
Schedule and questionnaire are a set of questions and is the principal method for demographic data collection and many other information-like personal references, social attitudes, beliefs, opinions, behavioural patterns, group practices and habits required in research work in a large scale. One of the major differences between schedule and questionnaire is that one is usually applied by the anthropologist in the study of the primitive societies, which is filled by the interviewer or the researcher himself while interviewing with the respondent, and the later is applied in literate societies which is filled by the respondent himself

through mail. These are beneficial as supplementary and extending devices in observations, in interviews, and in evaluating personal behaviour and social situations. Majorly, there are two types of questions those are Open- Ended Questions, in which the respondent is allowed to answer freely without any limit or we can say have descriptive type questions. Whereas, Close-Ended Questions, do not allow to answer freely and have choice-based answers.

V.   Census and Survey Methods

Census and Survey method are useful for collecting demographic, educational, kinship and many other details of the sample population. A quantitative analysis of these data is used and the anthropologists/sociologist often detect underlying cultural regularities and obtain statistical measures in explaining the observed social process.

vi.   Sampling Method/Design

This method is applied when one is studying a very large population where census and survey method fails and deals with quantitative data. Sampling method usually requires statistical knowledge as various graphs and diagrams are prepared to explain the sampling data. The selected informants constitute a sample and the selection process is called as 'sampling method' or 'sampling design'.

There are various steps to be followed while developing a sample design:

v.   Universe Type: The very first step in sampling is to define the objects of sampling known as the universe to be studied. It can be of two types: Finite and Infinite; one is meant by the population that contains definite number of units and the later, in which number of units is infinite.

vi.   Source list/Sampling frame: It contains all the items in the universe(finite) from which sample is to be drawn. This list should be comprehensive, reliable, correct and appropriate.

vii. Sampling Unit: This may be of various types, like a geographical area such as a state, district, village, etc., or a construction unit such as house, flat, etc. or may be a social unit such as family, club, school etc. which are related to the research area.

viii. Parameters of Interest: Parameters indicate the statistical measures of the population of interest which includes mean, standard deviation, correlation etc.

ix.   Size of sample: The size of the sample should be optimum; should meet the requirements of efficiency, representatives, flexibility and reliability. Larger the size of population, bigger the sample is needed.

x.   Organisation of data: It includes data collection, classification, editing, tabulation and studying the material.

xi.   Budgetary Provision: Cost consideration from practical point of view have an important impact upon the size of sample and its type, sometimes even lead to the use of a non-probability sample.

xii. Sampling procedure: This is the last step which is decided by the researcher is to choose the type of sample for his research. Taking into account the cost, time and energy, he should also see that the error is minimised in the sample design.

- **Types of sample designs:**

There are majorly two types of sampling, Probability or 'Random' sampling and non-probability or 'non-random' sampling. Probability sampling helps to know the likelihood of the sample being taken from a given universe whereas, in the later method some criterion of selection is first approved and items are selected in accordance with it.

Probability sampling method include:

i. Simple Random Sampling: Since, in this sampling each unit has an equal chance of being selected, therefore also called as equal Probability sampling.

ii. Cluster Sampling: It refers to the clusters or group instead of individual units. In this sampling small sub-areas are divided and randomly the unit representing each area are selected.

iii.Stratified Random Sampling: In this method, the universe is divided into several strata and then from each stratum some units are selected by random sampling.

Non- Probability sampling method includes:

i.   **Systematic Sampling**: In this method, one in every n^{th} item (example: every 10th item) is selected in a list representing the universe. The number of 'n' is called sampling interval. The first unit is selected at random and the remaining units are selected automatically in a pre-determined manner.

ii.   **Accidental Sampling**: In this, researcher picks up the cases that fall to hand continuing the process till the size of the sample reached.

iii. **Judgement Sampling**: This sampling is taken by an investigator with an appropriate strategy.

iv.   **Quota Sampling:** In this, information is collected from an assigned number of quota of individuals in each of the several groups.

v.   **Purposive Sampling**: The sample items are purposely selected with some criterion.

vi.   **Convenience or Chunk Sampling**: A convenient population is selected for sampling method.

vii. **Snowball sampling:** In this method, new sample units are suggested by the other sample unit and so on, which form the part of the sample.

vii.Photographic and Cartographic Method
This method includes mapping used for graphic recording of houses, forest, field, roads and many more; audio video recording is mostly used for recording the folklore, folktales, folk songs, dance and other way of life of different people under study mostly used by the researcher of social sciences. Scientific development has given rise to this method, which is now known as Visual Anthropology.

viii. Psychological Method
Psychological method usually deals with the study of the psychology, personality formation, socialization process. Psychological method and anthropological approach when combined, a new branch named Psychological Anthropology came to light. Some salient psychological methods are projective test, doll-painting, Rorschach test etc.

ix.Content Analysis Method
This method is used to study the patterns of behaviour of the people from distant in case where there is no possibility to conduct empirical field- work. One of the famous Anthropologist to use this method was Ruth Benedict in her work "Chrysanthemum and The Sword" which she applied during the second world war.

x. Life History and Case Study Method
While conducting In-depth interview, these methods are usually used to get in-depth and extensive information related to particular research area and this is possible only after a proper rapport establishment. Case study can be of a person, institution, community and even a culture that has to be studied. Since, data is collected in a particular period only, it tends to appear cross-sectional or synchronic. However, the extent of the data collected is longitudinal or diachronic. Data collection can be   Usually, intimate cases like extra-marital cases, violation of incest-taboo etc are collected by the ethnographers to measure the unit of stress and strain as well as the dis-organisation in a society.

Life history method gives an account of all the life events that have occurred from earliest to latest. Since, a complete life history may not be required by the researcher; so, to cover only the beneficial portion, a special kind of life history is taken into consideration that is Thematic Life History.

Other form of Life History is Formal Life History which focuses on the informant's ideas of his/her own life and is hence, more faithful to the informant's view of things rather than of the anthropologist.

xi. Formal Semantic Analysis Method
This method aims at making full and explicit accounts of the implicit knowledge people have about the cognitive (semantic) domains, i.e., about the knowledge which enables people to organise things in their world into systematic sets including part-whole relationships and hierarchically structured taxonomies. Some of the cognitive domains are kinship terminology, colour-terminology, taxonomies, food taxonomies, diagnostic taxonomies of disease and
 illness etc. In India, this method was applied by M. Jha in his study of "Lakshadweep: Island Ecology and Cultural Perceptions".(Jha, 1994)

Some Principal literatures on different aspect of Field-work Methods are:
- The British model of research is usually guided by the *Notes and Queries on Anthropology* published by James Frazer, which was published as early as in 1874.
- The American model of research is based on "Outline of Cultural Materials".
- Some Indians also contributed in the literature of field methodology. S.C Dube (1955-58) had pioneered group research in India and had also written about the methodological problems involved in it.
- A.K. Danda's book, "Research Methodology in Anthropology" (1992) which has come up recently.
- A.K. Shah and R.G. Shroff (1959) examined genealogies to reconstruct the social and economic history of the village under study.
- Some of the Rama Krishna Mukherjees books and papers such as "Some considerations on social considerations on Social Researches (1960), "A Note on Village as Unit" or "Variable for studies of Rural Society" (1961), "On Classification of Family Structure" (1962), discussed about the statistical concepts and tools that should be employed in social science research. (Jha, 1994)

19. THE NARRATIVE

The narrative is description of an event, circumstance or any occurrence in the life of the informants or story or myth in the form of story. The narrative contains greater visual and descriptive depth which helps an anthropologist to add extra details to their ethnographic account. Narrative can be written down or recorded, taking care to preserve nuances of speech and diction, including hesitations. Most importantly, the old people of any community are the storehouses and repositories of myths, stories and cultural accounts.

20.   CODE OF ETHICS

Earlier anthropology was a colonial enterprise and was linked to an outdated theory of evolution where colonized people were seemed to be at the bottom and colonial powers were at the top of the scale. Majorly, anthropological works conducted at that time was helpful for the colonial rulers to rule over their subjects.

But later anthropologist worked consciously in order to give information about their enemies to their own countries. An ethical consideration is needed to protect the people of the field to be studied and one has to be given a humanistic position within this ethic.

A series of statements were published on the Ethics of anthropology and its codes in USA and UK and *Social Responsibilities Symposium* was printed in the journal *Current Anthropologist* in the late sixties(Ghosh, 1996). An anthropologist needs to clarify the ethical issues on their own by stating their personal biases in the theory and in their lives, the motto behind their research, for whom it is conducted and the funding agency of the research as well as the most intimate of their familial and cultural biases. One must avoid being totally objective since this makes subjective biases more covert and can collaborate with human rights activists and lawyer even while preparing their research designs so as to avoid infringement of ethical issues. And also, extensive questioning method can lead to violation of one's privacy.

Ethics may be classified as universal or generalized ethics and personal ethics; one would give outlines for humanistic ethics and the later have to be decided by the field-worker himself.

21.   GUIDELINES AND TECHNIQUES OF WRITING RESEARCH PROPOSAL:

Research proposal is the relative outline which demonstrate what the researcher is seeking for, the methods, significance of his research work and many more. This may be a dissertation proposal presented to a committee or a funding request to a foundation or governmental agency. The various elements/steps needed in writing a research proposal are:
i.   Statement of the problem
ii. Review of the literature
iii. Hypothesis (if needed)
iv. Instrumentation
v.   Sampling and design
vi. Data collection and statistical procedures
vii. Significance
viii.   Budget and time schedule (Verma, 2005).

One must look after various weaknesses in the proposal that may have been overlooked. The shortcomings are:

i.   *The problem is Trivial*: Problems associated with perimetric interest to educators and gives little or no emphasis on adding to knowledge in education are not considered deserving of support.

ii. *The problem is not Delimited*: In order to produce a feasible proposal, one must focus one's study. One must look after those aspects of a problem which can reasonably be handles in a single study.

iii. *The objectives, hypothesis or questions stated are too broad:* Overly broad objectives sometimes cannot be reached by the procedures applied or mentioned in the proposal as the procedural section is weakly planned and is not capable of meeting the grand objectives.

iv. *The procedures are lacking in detail*: The procedures should be complete enough to allow for replication.

v.   *A Simple design is used to investigate a complex problem*: As design of the study must fit the problem so, when complex studies are taken into account then complex design must be used.

vi. *Relevant variables are lightly dismissed*: Failure to consider relevant extraneous variables is a serious error in a research proposal.

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