

Scheme of Evaluation
Internal Assessment Test 2 – April 2024



Sub:	Research Methodology and IPR						Code:	22RMI18	
Date:	12-04-2024	Duration:	90mins	Max Marks:	50	Sem:	I	Branch:	MCA

Question #	Description	Marks Distribution	Max Marks
1.	Summarize the literature review function in research work and state the way in which it can help research		10
	List out the functions in research work	3	
	Explanation of this	7	
2.	How do you think researcher should collect literature for review?		10
	Explanation of collect literature for review	10	
3.	Explain the concepts of reviewing the selected literature		10
	Details explanation about each concepts of reviewing the selected literature	10	
4.	How to develop a theoretical framework in reviewing the literature?		10
	Detail explanation with examples	10	
5.	What is research design? Explain the features of good design		10
	Definition of research design	4	
	Explanation of features of good design	6	
6.	Explain the meaning of the following in context of Research design. (a) Extraneous variables; (b) Confounded relationship; (c) Research hypothesis; (d) Experimental and Control groups; (e) Treatments		10
	Explanation each context of research design	10	
7.	List and explain few important experimental design		10
	List out the important experimental design	3	
	Explanation of experimental design with neat diagram	7	
8.	Explain the exploratory research design with example		10
	Detail explanation of the exploratory research design with example	10	
9.	Explain what is meant by sampling. List and discuss the various sampling Techniques		10
	Definition of Sampling	4	
	Detail Explanation of Sampling techniques	6	
10.	Describe about the census survey vs sample survey		10
	Description of census survey vs sample survey	10	

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PART I

1. Summarize the literature review function in research work and state the way in which it can help research

The literature review is an integral part of the research process and makes a valuable contribution to almost every operational step. It has value even before the first step; that is, when you are merely thinking about a research question that you may want to find answers to through your research journey. In the initial stages of research it helps you to establish the theoretical roots of your study, clarify your ideas and develop your research methodology.

In summary, a literature review has the following functions:

- It provides a theoretical background to your study.
- It helps you establish the links between what you are proposing to examine and what has already been studied.
- It enables you to show how your findings have contributed to the existing body of knowledge in your profession.
- It helps you to integrate your research findings into the existing body of knowledge.

In relation to your own study, the literature review can help in four ways. It can:

- bring clarity and focus to your research problem;
- improve your research methodology;
- broaden your knowledge base in your research area; and
- contextualise your findings.

Bringing clarity and focus to your research problem:

The literature review involves a paradox. On the one hand, you cannot effectively undertake a literature search without some idea of the problem you wish to investigate. On the other hand, the literature review can play an extremely important role in shaping your research problem because the process of reviewing the literature helps you to understand the subject area better and thus helps you to conceptualise your research problem clearly and precisely and makes it more relevant and pertinent to your field of enquiry. When reviewing the literature you learn what aspects of your subject area have been examined by others, what they have found out about these aspects, what gaps they have identified and what suggestions they have made for further research. All these will help you gain a greater insight into your own research questions and provide you with clarity and focus which are central to a relevant and valid study. In addition, it will help you to focus your study on areas where there are gaps in the existing body of knowledge, thereby enhancing its relevance.

Improving your research methodology:

Going through the literature acquaints you with the methodologies that have been used by others to find answers to research questions similar to the one you are investigating. A literature review tells you if others have used procedures and methods similar to the ones that you are proposing, which procedures and methods have worked well for them and what problems they have faced with them. By becoming aware of any problems and pitfalls, you will be better positioned to select a methodology that is capable of providing valid answers to your research question. This will increase your confidence in the methodology you plan to use and will equip you to defend its use.

Broadening your knowledge base in your research area :

The most important function of the literature review is to ensure you read widely around the subject area in which you intend to conduct your research study. It is important that you know what other researchers have found in regard to the same or similar questions, what theories have been put forward and what gaps exist in the relevant body of knowledge. When you undertake a research project for a higher degree (e.g. an MA or a PhD) you are expected to be an expert in your area of research. A thorough literature review helps you to fulfil this expectation. Another important reason for doing a literature review is that it helps you to understand how the findings of your study fit into the existing body of knowledge (Martin 1985: 30).

Enabling you to contextualise your findings:

Obtaining answers to your research questions is comparatively easy: the difficult part is examining how your findings fit into the existing body of knowledge. How do answers to your research questions compare with what others have found? What contribution have you been able to make to the existing body of knowledge? How are your findings different from those of others? Undertaking a literature review will enable you to compare your findings with those of others and answer these questions. It is important to place your findings in the context of what is already known in your field of enquiry.

OR

2. How do you think researcher should collect literature for review?

Researchers can employ several strategies to collect literature for their review:

Utilize Academic Databases: Academic databases like PubMed, Google Scholar, JSTOR, Scopus, and Web of Science are valuable resources for accessing scholarly literature. Researchers can use specific keywords, phrases, or Boolean operators to conduct systematic searches tailored to their research topic.

Explore Bibliographies and Citations: Reviewing the bibliographies and citations of relevant articles, books, and other sources can lead researchers to additional literature that may not have appeared in their initial database searches. This snowballing technique, also known as citation chaining, helps researchers discover seminal works and related studies.

Consult Subject-specific Journals: Subject-specific journals are a rich source of literature within a particular discipline or field. Researchers should identify key journals relevant to their topic and regularly browse their contents for recent publications and relevant articles.

Attend Conferences and Workshops: Academic conferences, symposiums, and workshops offer opportunities to network with peers and learn about the latest research developments in the field. Researchers can attend presentations, poster sessions, and panel discussions to identify relevant studies and engage in discussions with other scholars.

Engage with Experts and Mentors: Seeking guidance and recommendations from experienced researchers, mentors, or faculty members can help researchers identify seminal works, relevant literature, and potential research gaps. These experts may also provide insights into emerging trends and directions within the field.

Explore Institutional Repositories: Many universities and research institutions maintain institutional repositories that host electronic copies of faculty publications, theses, dissertations, and other scholarly works. Researchers should explore these repositories to access locally produced literature and unpublished research.

Utilize Social Media and Online Forums: Social media platforms, academic networks (e.g., ResearchGate, Academia.edu), and online forums (e.g., Reddit, Quora) can serve as avenues for discovering and sharing research articles, preprints, and conference proceedings. Researchers can follow relevant hashtags, join discussion groups, and participate in online communities to stay updated on the latest research in their field.

Set Up Alerts and Notifications: Researchers can set up email alerts, RSS feeds, or notifications from academic databases and journals to receive updates about newly published articles, conference proceedings, and research trends relevant to their topic. This ensures that they stay informed about the latest literature without actively searching for it.

By employing a combination of these strategies, researchers can effectively collect a comprehensive range of literature for their review, ensuring that they capture diverse perspectives, seminal works, and recent advancements relevant to their research topic.

PART II

3. Explain the concepts of reviewing the selected literature

Reviewing the selected literature

Now that you have identified several books and articles as useful, the next step is to start reading them critically to pull together themes and issues that are of relevance to your study. Unless you have a theoretical framework of themes in mind to start with, use separate sheets of paper for each theme or issue you identify as you go through selected books and articles.

The following example details the process.

The author recently examined, as part of an evaluation study, the extent of practice of the concept of 'community responsiveness' in the delivery of health services in Western Australia by health service providers. Before evaluating the extent of its use, pertinent literature relating to 'community responsiveness in health' was identified and reviewed. Through this review, many themes emerged, which became the basis of developing the theoretical framework for the study. Out of all of this, the following themes were selected to construct the theoretical framework for the evaluation study:

- Community responsiveness: what does it mean?
- Philosophies underpinning community responsiveness.
- Historical development of the concept in Australia.
- The extent of use in health planning?
- Strategies developed to achieve community responsiveness.
- Indicators of success or failure.
- Seeking community participation.
- Difficulties in implementing community responsiveness.
- Attitude of stakeholders towards the concept of community responsiveness.

Once you develop a rough framework, slot the findings from the material so far reviewed into these themes, using a separate sheet of paper for each theme of the framework so far developed. As you read further, go on slotting the information where it logically belongs under the themes so far developed. Keep in mind that you may need to add more themes as you go along. While going through the literature you should carefully and critically examine it with respect to the following aspects:

- Note whether the knowledge relevant to your theoretical framework has been confirmed beyond doubt.
- Note the theories put forward, the criticisms of these and their basis, the methodologies adopted (study design, sample size and its characteristics, measurement procedures, etc.) and the criticisms of them.
- Examine to what extent the findings can be generalised to other situations.
- Notice where there are significant differences of opinion among researchers and give your opinion about the validity of these differences.
- Ascertain the areas in which little or nothing is known - the gaps that exist in the body of knowledge.

4. Explain the concepts of reviewing the selected literature

- As you start reading the literature, you will soon discover that the problem you wish to investigate has its roots in a **number of theories** that have been developed from different perspectives.
- A theoretical framework is based on the **problem statement, research questions, and review of literature sources**.
- The information obtained from **different books and journals now needs to be sorted under the main themes and theories**, highlighting **agreements** and **disagreements** among the authors and identifying the unanswered questions or gaps.
- Until you go through the literature you *cannot develop a theoretical framework*, and until you have developed a *theoretical framework you cannot effectively review the literature*.

Using an example of a theoretical framework can help you organize your information effectively and create a cohesive research document. Here's a sample theoretical framework using the **Mars' moon example**:

- **Objective:** *The objective of this study is to disprove astronomer Asaph Hall's 1877 theory that Mars has only two moons orbiting it.*
- **Problem:** *Many astronomers observe two moons orbiting Mars and disregard a third astral body.*
- **Research question:** *Why does the third astral body orbiting Mars qualify as a moon?*
- **Subquestions:** *Why have astronomers ignored the third astral body up to this point? What behaviors of the astral body indicate its orbit?*
- **Literature review:** *Hall theorized that since Mars' moons were small and more similar to asteroids than Earth's moons, they may have formed from a planetary ring millions of years ago. He also noted that the moons may eventually shatter and form a ring around the planet. In addition, the Mariner 9 mission of 1971 and 1972 presented a close-up look of each moon and provided evidence for their asteroid shapes and orbits around Mars.*

Developing a theoretical framework the relationship between mortality and fertility

If you want to study the relationship between mortality and fertility, you should review the literature about:

- *fertility* – trends, theories, some of the indices and critiques of them, factors affecting fertility, methods of controlling fertility, factors affecting acceptance of contraceptives, and so on;
- *mortality* – factors affecting mortality, mortality indices and their sensitivity in measuring change in mortality levels of a population, trends in mortality, and so on; and, most importantly,
- *the relationship between fertility and mortality* – theories that have been put forward to explain the relationship, implications of the relationship.

Out of this literature review you need to develop the theoretical framework for your study. Primarily this should revolve around theories that have been put forward about the relationship between mortality and fertility. You will discover that a number of theories have been proposed to explain this relationship. For example, it has been explained from economic, religious, medical and psychological perspectives. Within each perspective several theories have been put forward: 'insurance theory', 'fear of non-survival', 'replacement theory', 'price theory', 'utility theory', 'extra' or 'hoarding theory' and 'risk theory'.

Your literature review should be written under the following headings, with most of the review involving the examination of the relationships between fertility and mortality:

- fertility theories;
- the theory of demographic transition;
- trends in fertility (global, and then narrow it to national and local levels);
- methods of contraception (their acceptance and effectiveness);
- factors affecting mortality;
- trends in mortality (and their implications);
- measurement of mortality indices (their sensitivity);
- *relationships between fertility and mortality* (different theories such as 'insurance', 'fear of non-survival', 'replacement', 'price', 'utility', 'risk' and 'hoarding').

PART III

5. What is research design? Explain the features of good design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure

Questions that help in research design

- (i) What is the study about?
- (ii) Why is the study being made?
- (iii) Where will the study be carried out?
- (iv) What type of data is required?
- (v) Where can the required data be found?
- (vi) What periods of time will the study include?
- (vii) What will be the sample design?
- (viii) What techniques of data collection will be used?
- (ix) How will the data be analysed?
- (x) In what style will the report be prepared?

Research design contains

- (a) the sampling design which deals with the method of selecting items to be observed for the given study;
- (b) the observational design which relates to the conditions under which the observations are to be made;
- (c) the statistical design which concerns with the question of how many items are to be observed and how the information and data gathered are to be analyzed; and
- (d) the operational design which deals with the techniques by which the procedures specified in the sampling, statistical and observational designs can be carried out.

Summarizing : Research Design should have

- (a) a clear statement of the research problem;
- (b) procedures and techniques to be used for gathering information;
- (c) the population to be studied; and
- (d) methods to be used in processing and analysing data.

Need for research design

Research design is needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money.

Feature of a good design

- i) the means of obtaining information;
- (ii) the availability and skills of the researcher and his staff, if any;
- (iii) the objective of the problem to be studied;
- (iv) the nature of the problem to be studied; and
- (v) the availability of time and money for the research work

Features of a good research design include:

1. **Clear Objectives:** A good research design starts with clearly defined research objectives or questions. These objectives guide the entire research process, providing a clear focus and direction for the study.
2. **Appropriate Methodology:** The research design should employ appropriate methodologies and methods to address the research objectives effectively. Whether qualitative, quantitative, or mixed methods, the chosen methodology should be aligned with the nature of the research question and the type of data to be collected.
3. **Sampling Strategy:** A good research design includes a well-defined sampling strategy for selecting participants or cases. The sampling method should be appropriate for the research population and allow for the generalization of findings to the broader population, if applicable.
4. **Data Collection Techniques:** The research design specifies the data collection techniques to be used, such as surveys, interviews, observations, or experiments. These techniques should be carefully chosen to ensure the collection of valid and reliable data that addresses the research objectives.
5. **Data Analysis Plan:** A good research design includes a detailed data analysis plan outlining how the collected data will be analyzed to answer the research questions or test hypotheses. The analysis plan should specify the statistical or qualitative methods to be used and ensure that the analysis is rigorous and systematic.
6. **Control of Variables:** In experimental research designs, control of variables is essential to establish cause-and-effect relationships between variables. A good research design includes measures to control extraneous variables and minimize threats to internal validity, ensuring that any observed effects can be attributed to the independent variable(s).
7. **Ethical Considerations:** Ethical considerations are paramount in research design. A good research design ensures the protection of participants' rights, privacy, and confidentiality. It also includes measures to obtain informed consent, minimize harm, and adhere to ethical guidelines and regulations governing research with human subjects.
8. **Validity and Reliability:** A good research design prioritizes validity and reliability in the measurement of variables and the interpretation of findings. Validity refers to the accuracy and truthfulness of the research findings, while reliability refers to the consistency and stability of the measurement instruments or procedures.
9. **Feasibility:** A good research design is feasible within the constraints of time, resources, and available expertise. It considers practical limitations and ensures that the research can be conducted efficiently and effectively without compromising the quality of the study.

10. **Flexibility:** While a research design provides a structured framework for the study, it should also allow for flexibility to adapt to unforeseen challenges or changes in the research context. Flexibility enables researchers to make necessary adjustments while maintaining the integrity and validity of the study. In summary, a good research design is characterized by clear objectives, appropriate methodology, sound sampling strategies, rigorous data collection and analysis techniques, control of variables, ethical considerations, validity and reliability, feasibility, and flexibility. By incorporating these features into their research designs, researchers can conduct studies that generate meaningful insights and contribute to the advancement of knowledge in their field.

6. Explain the meaning of the following in context of Research design.

(a) Extraneous variables; (b) Confounded relationship; (c) Research hypothesis; (d) Experimental and Control groups; (e) Treatments

(a) Extraneous Variables: Extraneous variables are any variables other than the independent and dependent variables that could potentially influence the outcome of a research study. These variables are important to identify and control for because they can confound the relationship between the independent and dependent variables.

For example, in a study examining the effect of a new teaching method (independent variable) on student performance (dependent variable), extraneous variables could include factors such as student motivation, teacher experience, classroom environment, or prior knowledge.

(b) Confounded Relationship: A confounded relationship occurs when the effect of the independent variable on the dependent variable is mixed up with the effect of an extraneous variable. In other words, the observed relationship between the independent and dependent variables may be due to the influence of a third variable rather than the independent variable itself.

For instance, if a study finds a positive correlation between ice cream consumption (independent variable) and sunburns (dependent variable), it could be confounded by a third variable, such as exposure to sunlight.

(c) Research Hypothesis: A research hypothesis is a testable statement or prediction about the relationship between variables in a research study. It typically states the expected effect of the independent variable on the dependent variable based on theory, prior research, or logical reasoning.

For example, a research hypothesis could be: "Students who receive extra tutoring will achieve higher scores on standardized tests compared to students who do not receive extra tutoring."

(d) Experimental and Control Groups:

In experimental research, participants are often divided into two or more groups: an experimental group and a control group. The experimental group receives the experimental treatment or intervention, while the control group does not receive the treatment and serves as a baseline for comparison.

For instance, in a study testing the effectiveness of a new medication (experimental treatment) for a particular medical condition, participants may be randomly assigned to either receive the medication (experimental group) or a placebo (control group).

(e) Treatments: Treatments refer to the interventions or conditions that participants are exposed to in a research study. In experimental research, treatments are typically manipulated by the researcher to assess their effect on the dependent variable.

For example, in a study investigating the effects of different study techniques on memory retention, the treatments could include various study methods, such as repetition, mnemonic devices, or concept mapping.

These concepts are fundamental in research design as they help researchers to identify and control for potential sources of bias or error, clarify the relationships between variables, and make meaningful interpretations of research findings.

PART IV

7. List and explain few important experimental design

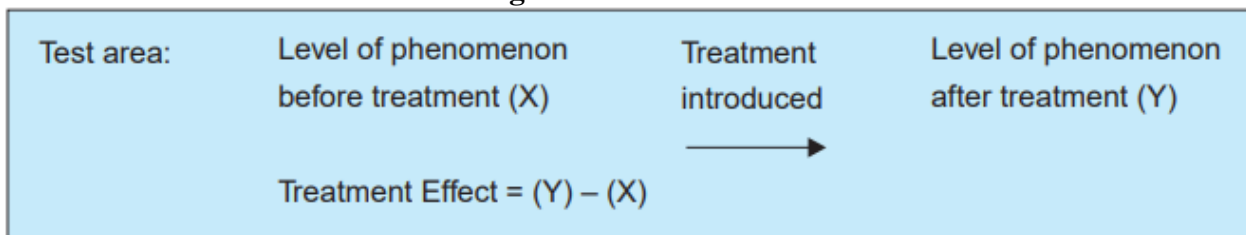
(a) Informal experimental designs:

- Before-and-after without control design.
- After-only with control design.
- Before-and-after with control design.

(b) Formal experimental designs:

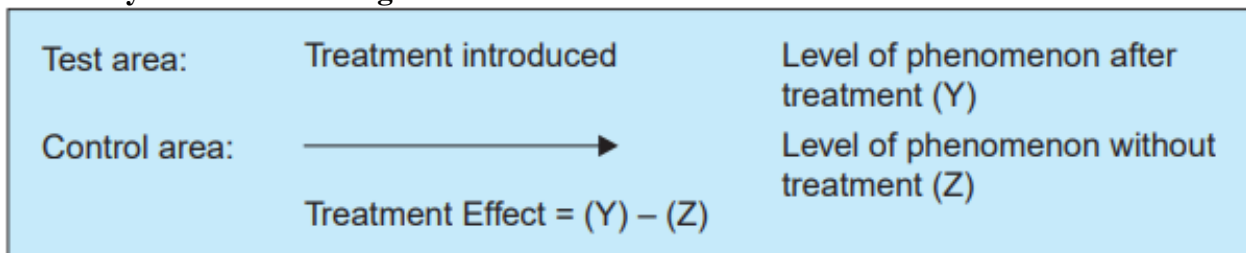
- Completely randomized design (C.R. Design).
- Randomized block design (R.B. Design).
- Latin square design (L.S. Design).
- Factorial designs.

Before-and-after without control design



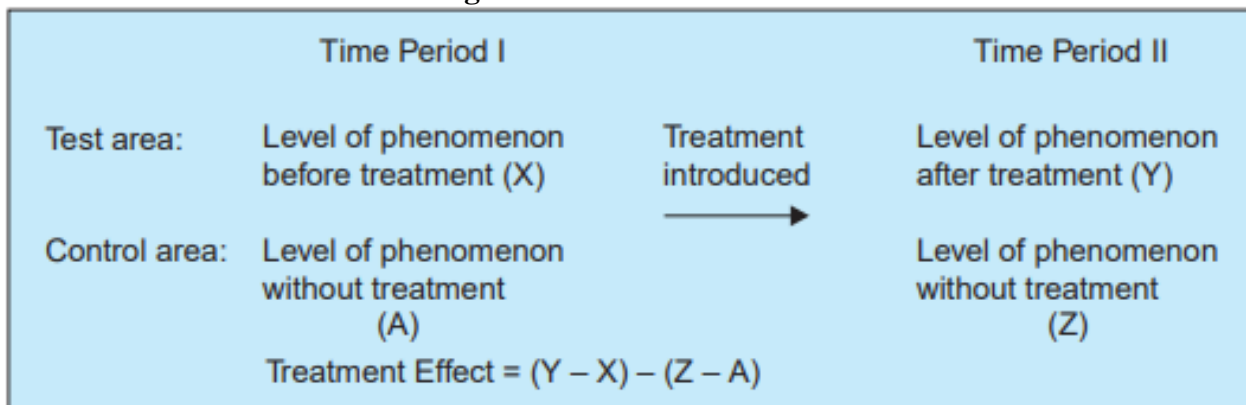
A single test group or area is selected and the dependent variable is measured before the introduction of the treatment. The treatment is then introduced and the dependent variable is measured again after the treatment has been introduced. The effect of the treatment would be equal to the level of the phenomenon after the treatment minus the level of the phenomenon before the treatment. The main difficulty of such a design is that with the passage of time considerable extraneous variations may be there in its treatment effect.

After-only with control design



Two groups or areas (test area and control area) are selected and the treatment is introduced into the test area only. The dependent variable is then measured in both the areas at the same time. Treatment impact is assessed by subtracting the value of the dependent variable in the control area from its value in the test area. The basic assumption in such a design is that the two areas are identical with respect to their behavior towards the phenomenon considered. If this assumption is not true, there is the possibility of extraneous variation entering into the treatment effect.

Before-and-after with control design



Two areas are selected and the dependent variable is measured in both the areas for an identical time-period before the treatment. The treatment is then introduced into the test area only, and the dependent variable is measured in both for an identical time-period after the introduction of the treatment. The treatment effect is determined by subtracting the change in the dependent variable in the control area from the change in the dependent variable in test area. This design is superior to the above two designs for the simple reason that it avoids extraneous variation resulting both from the passage of time and from non-comparability of the test and control areas. But at times, due to lack of historical data, time or a comparable control area, we should prefer to select one of the first two informal designs stated above.

8. Explain the exploratory research design with example

Exploratory research design is a type of research design used to investigate a topic or issue that is not well understood or lacks sufficient prior research. It aims to explore and gain initial insights into a phenomenon, generate hypotheses, or identify research questions for further investigation. Exploratory research is often conducted when the researcher has limited prior knowledge of the topic or when the topic is complex and multifaceted.

Features of exploratory research design include:

1. **Qualitative Methods:** Exploratory research often utilizes qualitative research methods, such as interviews, focus groups, observations, or case studies. These methods allow researchers to explore the topic in depth, gather rich and detailed data, and uncover underlying motivations, attitudes, and behaviors.
2. **Flexible and Open-ended Approach:** Exploratory research design typically adopts a flexible and open-ended approach, allowing researchers to adapt their methods and research questions as they delve deeper into the topic. It encourages exploration and discovery, rather than testing specific hypotheses or theories.
3. **Small Sample Size:** Exploratory research often involves a small sample size, which allows researchers to focus on depth rather than breadth. By studying a small group of participants or cases in detail, researchers can gain nuanced insights into the topic and identify patterns or themes that may inform further research.
4. **Exploratory Nature:** The primary goal of exploratory research design is to explore and generate hypotheses or research questions rather than to test existing theories or hypotheses. It is particularly useful in the early stages of research when little is known about the topic or when the research is exploratory by nature.

Example of Exploratory Research Design:

Let's consider an example of exploratory research design in the field of marketing:

A marketing researcher is interested in understanding consumer perceptions and attitudes towards a new product category that has recently emerged in the market. Since there is limited prior research on this topic, the researcher decides to conduct exploratory research to gain initial insights.

The researcher employs qualitative methods, such as in-depth interviews with consumers and focus group discussions, to explore consumer perceptions, preferences, and usage patterns related to the new product category. Through these interviews and focus groups, the researcher uncovers a range of attitudes, motivations, and concerns among consumers regarding the new product category.

Based on the exploratory findings, the researcher identifies several potential factors influencing consumer acceptance and adoption of the new product category, such as price sensitivity, product features, brand reputation, and perceived benefits. These insights serve as the basis for formulating hypotheses and research questions for further investigation in subsequent studies.

In this example, the exploratory research design allows the researcher to explore a relatively unknown topic, generate hypotheses, and identify key factors influencing consumer behavior. The findings of the exploratory study can inform the development of future research studies, marketing strategies, and product development initiatives in the new product category.

PART V

9. Explain what is meant by sampling. List and discuss the various sampling Techniques

Sampling is the process of selecting a subset of individuals, cases, or elements from a larger population to be included in a research study. The goal of sampling is to gather data from a representative sample that accurately reflects the characteristics of the population of interest. Sampling allows researchers to study a manageable portion of the population rather than attempting to study the entire population, which may be impractical, time-consuming, or cost-prohibitive.

Various sampling techniques are used in research, each with its own advantages, disadvantages, and appropriate applications:

Probability Sampling Techniques:

a. Simple Random Sampling:

In simple random sampling, every member of the population has an equal chance of being selected for the sample. This is typically achieved through random selection methods such as lottery or random number generation. Simple random sampling is straightforward and ensures each member of the population has an equal probability of selection, but it may be impractical for large populations or when a sampling frame is unavailable.

b. Stratified Random Sampling:

Stratified random sampling involves dividing the population into subgroups or strata based on certain characteristics (e.g., age, gender, income) and then randomly selecting samples from each stratum. This ensures that the sample is representative of the population across different subgroups. Stratified sampling improves precision and allows for comparisons between subgroups, but it requires knowledge of population characteristics and may be complex to implement.

c. Systematic Sampling:

Systematic sampling involves selecting every n th member from a list of the population. The interval (n) is calculated by dividing the population size by the desired sample size. Systematic sampling is simple and efficient but may introduce bias if there is a periodic pattern in the list.

d. Cluster Sampling:

Cluster sampling involves dividing the population into clusters or groups, randomly selecting some clusters, and then sampling all members within the selected clusters. Cluster sampling is useful when it is difficult or impractical to obtain a complete list of the population, but it may introduce cluster-level bias if clusters are not homogenous.

Non-probability Sampling Techniques:

a. Convenience Sampling:

Convenience sampling involves selecting individuals who are readily available and accessible to the researcher. This method is quick, easy, and inexpensive but may introduce bias if the sample is not representative of the population.

b. Purposive Sampling:

Purposive sampling involves selecting individuals who meet specific criteria or characteristics of interest to the researcher. This method is useful for studying unique or hard-to-reach populations but may lack representativeness.

c. Snowball Sampling:

Snowball sampling involves selecting initial participants who then refer additional participants to the study, who in turn refer others, creating a "snowball" effect. This method is useful for studying hidden or marginalized populations but may result in a biased sample.

d. Quota Sampling:

Quota sampling involves selecting individuals based on pre-defined quotas or proportions to ensure that the sample reflects certain characteristics of the population. Quota sampling is similar to stratified sampling but does not involve random selection within strata.

Each sampling technique has its own strengths and limitations, and the choice of technique depends on factors such as the research objectives, the characteristics of the population, the availability of resources, and the desired level of precision and generalizability. Researchers must carefully consider these factors when selecting an appropriate sampling technique for their study.

10. Describe about the census survey vs sample survey

Q.3. Distinguish between census method and sampling method.		
Answer:		
Parameters	Census Method	Sampling Method
(1) Nature of enquiry	The extensive enquiry is conducted at each and every unit of the population.	The limited enquiry is conducted as only a few units of the population are studied.
(2) Economy	More Time, Money, and Labour It requires a large amount of money, time, and labour.	Less Time, Money, and Labour Relatively less money, time, and labour are required.
(3) Suitability	It is more suitable if the population is heterogeneous in nature.	It is more suitable if the population is homogeneous in nature.
(4) Reliability and Accuracy	The results are quite reliable and accurate under the census method.	The results of the sampling method are less reliable because a high degree of accuracy is not achieved.
(5) Organisation and Supervision	It is very difficult to organise and supervise the census method.	The sampling method is comparatively easy to organise and supervise.
(6) Verification	Under this method, the results of the investigation cannot be verified.	Under this method, the results can be tested by taking out another small sample.
(7) Nature of method	The census method is an old method of investigation and not a very scientific method.	The sampling method is a new and practicable method. It is a scientific method.