Research Design

Aug 24, 2023.

- Marketing research design is the process of developing **a plan or framework for conducting market research** to address specific research objectives.

Goals

1. The core objective of research design is to formulate **a plan or strategy for conducting research** in a comprehensive and systematic way. This design outlines the s**procedures, methods, and techniques** necessary for data gathering and interpretation, and it provides the standards for assessing the outcomes.

- The twofold purpose of research design is to confirm that the study is **reliable, valid, and generalizable** to the target population. A thoughtfully crafted research project offers crucial knowledge and perspectives beneficial for guiding decisions across diverse disciplines like marketing, psychology, sociology, and healthcare. [1]

Characteristics

Characteristics of an Effective Research Design:

1. **Clearly Defined Research Question:** The foundation of a strong research design lies in a concise and specific question or hypothesis.

2. **Appropriate Research Method:** The design should employ a suitable method, be it surveys, experiments, case studies, or observational studies, based on the research question and aims.

3. **Appropriate Sampling Method:** The chosen sampling technique should aptly represent the target audience and minimize biases. This could range from random sampling, stratified sampling, to convenience sampling.

4. **Valid and Reliable Data Collection:** Tools like questionnaires, interviews, or observation protocols should be both valid and reliable, aligning with the research method and participants.

5. **Ethical Considerations:** The design should prioritize ethics, ensuring informed consent, participant privacy, confidentiality, and the welfare of the participants.

6. **Adequate Sample Size:** The sample size should be sufficient, ensuring statistical significance and the capacity to identify impactful effects or variances.

7. **Data Analysis Plan:** The design should encompass a fitting data analysis strategy, whether it's descriptive statistics, regression analysis, or content analysis, tailored to the research method and the gathered data.

8. **Timeliness and Feasibility:** The design should be realistic, allowing for the research to be conducted within the given resources and timeframe, all while yielding substantial and credible outcomes.

An effective marketing research design helps companies to **make informed decisions**, develop **effective marketing strategies**, and **stay competitive** in the marketplace. [2]

Classifications of Research Design

Research design can be classified into several types based on various criteria. Here are some common ways to classify research design:

Based on purpose:

Research design can be classified into three main types based on their purpose:

1. **Exploratory research design**: used to **explore a research problem when there is limited or no prior knowledge** or understanding of it.

2. **Descriptive research design**: used to describe or **summarize characteristics** of a population or phenomenon, such as market trends, customer behavior, or demographic data.

3. **Causal research design**: used to establish **cause-and-effect relationships** between variables.

Based on time frame:

Research design can also be classified based on the time frame of the study:

1. **Cross-sectional** research design:

- Data is collected at a **single point in time**.

2. **Longitudinal** research design:

- Data is collected over an extended period of time, and the same sample is followed up at **multiple time points**.

Based on data collection method:

Research design can also be classified based on the data collection method:

1. **Quantitative** research design:

- used to collect **structured data** using methods such as surveys, experiments, or observational studies.

2. **Qualitative** research design:

- used to collect **non-structured or semi-structured data** using methods such as interviews, focus groups, or observations.

Based on data analysis method:

Research design can also be classified based on the data analysis method:

1. **Deductive** research design:

- used to test a specific hypothesis or theory.

2. **Inductive** research design:

- used to generate new theories or hypotheses from the data collected.

In summary, research design can be classified based on various criteria, such as purpose, time frame, data collection method, and data analysis method. The choice of research design depends on the research question, the nature of the research problem, and the goals of the research. [3]

Classifications of Research Design Based on Purpose

1. Exploratory Research Design

- **Nature**: Used when there's **limited or no prior knowledge** about the research problem.

- **Goal**: To **gain insights, generate hypotheses**, and cultivate a **deeper understanding** of the research problem.

- **Usage**: Employed **when the research issue is ambiguous, intricate, or not well-defined** to explore varied perspectives, ideas, and potential remedies.

- **Position**: Often the **initial phase** in the research journey, helping in shaping and refining questions and hypotheses.

- **Methods**: Incorporates multiple methods like **literature reviews, case studies, observations, interviews, focus groups, or surveys** based on the research problem and objectives.

- **Characteristics**: Known for its **flexibility, creativity**, and **adaptability**.

- **Data Type**: Enables the researcher to gather **both qualitative and quantitative data**, leveraging varied information sources.

- **Findings**: Results are generally **not definitive**; the primary aim is to **unearth new insights and concepts** for future research or decision-making.

2. Conclusive Research Design

- **Nature**: Seeks to **offer a final conclusion** or resolve a specific research question/problem.

- **Goal**: To validate a hypothesis or provide a resolution to a research question with high certainty.

- **Usage**: Used when a clear comprehension of the research problem exists and the aim is to test a hypothesis or solve a particular research question.

- **Nature of Data**: Primarily **quantitative**, collecting organized data through surveys, experiments, or observational studies.

- **Approach**: More regimented than exploratory research, often requiring a **larger sample size** to ensure representative findings.

- **Design Rigor**: Ensures the results are **reliable, valid,** and **generalizable** to the entire population.

- **Analysis**: Typically involves **statistical data analysis**, deriving conclusions about the tested hypothesis or research question.

- **Application**: Findings are frequently utilized for making informed decisions, devising efficient marketing tactics, or influencing public policy.

3. Differences between Exploratory and Conclusive Research Designs

- **Purpose**: Exploratory research delves into topics with **minimal or unknown information** to uncover more, while conclusive research, having a clear grasp on the issue, seeks **definite answers or conclusions**.

- **Methodology**: Exploratory research is versatile, using varied methods like literature reviews or interviews to gather diverse information. In contrast, conclusive research is structured, primarily using **quantitative methods**.

- **Sample Size**: Exploratory research often has a **smaller sample size** without the intent of generalization, whereas conclusive research requires a **larger sample size** aiming for population-level generalization.

- **Analysis**: Exploratory research aims at unfolding new insights through qualitative or descriptive analysis. Conclusive research focuses on hypothesis testing using **quantitative and statistical analysis**.

To sum it up, while exploratory research seeks to discover and form hypotheses, conclusive research aspires to provide definite answers. The former is adaptive in method and analysis, while the latter is methodical and primarily quantitative. [6]

McDonald's – Exploratory Research Design

Exploratory Research Design is about delving deep into unknown territories to uncover clues, understand patterns, and generate hypotheses for further investigation. In essence, it serves as a foundation for more conclusive, often quantitative, research that follows. Let's illustrate this using McDonald's, the iconic fast-food giant.

Scenario: Imagine that McDonald's observed a decline in their sales in a particular region. They're not sure about the underlying causes, and the current data on hand does not offer clear answers. In this case, instead of diving into a detailed quantitative study immediately, McDonald's might opt for an exploratory research design to understand the potential reasons behind the sales slump.

1. **Interviews with Customers**: McDonald's could organize one-on-one interviews or small focus groups with customers in that region. These dialogues could reveal that perhaps customers are more health-conscious, finding McDonald's offerings not aligning with their dietary preferences.

2. **Observations**: They might deploy observers to selected outlets. These observers might notice that local competition has introduced innovative menu items that are drawing customers away or perhaps the service speed at McDonald's outlets has declined.

3. **Literature Review**: An exploration of recent articles, blogs, and reviews might highlight that there's a trending dietary pattern in the region that McDonald's current menu does not cater to.

4. **Pilot Surveys**: McDonald's could roll out short surveys, perhaps digitally or in select outlets, to gauge customer preferences and pain points. They might find out that customers desire a new category of products, like plant-based burgers, which McDonald's has not yet introduced in that region.

Discussion

- The value of this exploratory research for McDonald's lies in its flexibility and depth.

- It provides a qualitative understanding of the problem, offering rich insights that can't be captured through mere numbers.

- Once these initial insights are garnered, McDonald's can then invest in a large-scale, quantitative research project to test the hypotheses formulated from the exploratory phase.

- Critically speaking, it's essential to recognize its limitations. The findings from such research are not definitive. They are **subjective**, based on a smaller sample size, and might not always be generalizable to the broader population. However, in situations of ambiguity, like sales decline of McDonald's in a specific region, the exploratory research design proves invaluable in painting a clearer picture, setting the stage for more detailed investigations.

Sub-Classification of Conclusive Research Design

Conclusive research design can be classified into two main types:

- **Descriptive research**
- **Causal research**

Descriptive research:

1. Descriptive research is used to **describe or summarize characteristics** of a population or phenomenon, such as market trends, customer behavior, or demographic data.

2. Descriptive research is used to **provide a comprehensive picture** of a research problem or issue and can be used to answer research questions related to **who, what, when, where**, and **how**.

3. Descriptive research design is typically used when the researcher wants to understand the current state of affairs or existing correlations between variables.

4. Some common methods used in descriptive research include **surveys, observations**, and **secondary data analysis**.

Sub-Sub-Classification of Descriptive research

Descriptive research can be sub-classified into two main types based on the time frame of the study: cross-sectional research design and longitudinal research design.

- **Cross-sectional research design**

1. Cross-sectional research design is a type of descriptive research design that involves collecting data from a sample of individuals at a **single point in time**.

2. The purpose of this type of research design is to describe or **summarize characteristics of a population or phenomenon at a specific point in time**.

3. Cross-sectional research design is typically used when the researcher wants to examine the **prevalence of a particular characteristic, behavior, or attitude within a specific population**.

4. Common methods used in cross-sectional research design include surveys, questionnaires, and observational studies. [7]

- **Longitudinal research design**

1. Longitudinal research design is a type of descriptive research design that involves **collecting data** from a sample of individuals **over an extended period of time**.

2. The purpose of this type of research design is to **describe or summarize changes** in a population or phenomenon over time.

3. Longitudinal research design can be further classified into three sub-types:

- **Trend studies**: Trend studies are used to **examine changes in a variable over time**. Trend studies involve collecting data at multiple time points, and the purpose is to **identify whether a particular variable is increasing, decreasing, or remaining stable over time**.

- **Cohort studies**: Cohort studies are used to examine **changes in a specific group of individuals over time**. Cohort studies involve selecting a sample of individuals who share a common characteristic or experience, such as age, occupation, or exposure to a specific event, and following them over time to track changes in their behavior or health.

- **Panel studies**: Panel studies are used to examine **changes in the same individuals over time**. Panel studies involve selecting a sample of individuals and collecting data from them at multiple time points. The purpose is to track changes in the behavior, health, or other characteristics of the same individuals over time. [8]

Advantages and Disadvantages of Longitudinal versus Cross-Sectional research design

Longitudinal and cross-sectional research designs have different advantages and disadvantages depending on the research question and the purpose of the study. Here are some of the relative advantages and disadvantages of each design:

Advantages of longitudinal research design:

1. **Captures changes over time:** Longitudinal research design enables the researcher to capture changes in variables over time, which is particularly useful for studying the development of a phenomenon or tracking the impact of an intervention.

2. **Greater control over extraneous variables:** Since the same individuals are being studied over time, longitudinal research design enables the researcher to control for extraneous variables that may affect the outcome.

3. **More robust findings:** Longitudinal research design can provide more robust findings because the same individuals are being studied over time, which reduces the likelihood of sampling bias.

4. It allows researchers to identify factors that predict change over time, and to test hypotheses about causal relationships between variables.

Disadvantages of longitudinal research design:

1. **Expensive and time-consuming:** Longitudinal research design can be expensive and time-consuming, as data is collected over an extended period of time and requires tracking the same individuals.

2. **Attrition:** There is a risk of attrition in longitudinal studies, where participants may drop out or become lost to follow-up, which can limit the generalizability of the findings.

3. **Practice effects:** Longitudinal research design can be affected by practice effects, where participants may become more familiar with the research process over time, which may affect their responses.

Advantages of cross-sectional research design:

1. **Quick and cost-effective:** Cross-sectional research design is quick and cost-effective, as data is collected at a single point in time.

2. **Easy to implement:** Cross-sectional research design is easy to implement, and it is suitable for studying a large and diverse population.

3. **Can provide an overview:** Cross-sectional research design provides an overview of a phenomenon or population at a single point in time, which can be useful for identifying patterns and trends.

4. It provides a snapshot of a particular point in time, which can be useful for identifying trends and patterns.

Disadvantages of cross-sectional research design:

1. **Cannot capture changes over time**: Cross-sectional research design cannot capture changes in variables over time, which limits its usefulness for studying the development of a phenomenon or tracking the impact of an intervention.

2. **Prone to sampling bias**: Cross-sectional research design can be prone to sampling bias, as the sample may not be representative of the population of interest.

3. **Cannot control for extraneous variables**: Cross-sectional research design cannot control for extraneous variables that may affect the outcome, which limits its usefulness for causal inference. [9]

McDonald's – Descriptive Research Illustration

Descriptive research, nestled within the broader umbrella of conclusive research, seeks to depict and explain the characteristics of variables within a dataset, usually without influencing them. It's akin to capturing a snapshot at a given time and using that image to discern patterns, behaviors, and attributes.

Let's explore this concept using the McDonald's brand for clarity.

Scenario: Suppose McDonald's wants to comprehend the breakfast consumption habits of its customers across different age groups in a particular city.

1. **Surveys and Questionnaires**: McDonald's might deploy structured surveys across various outlets during breakfast hours. This tool could probe into customers' favorite breakfast items, the frequency of their breakfast visits in a week, and their preferred time for breakfast. Through these surveys, McDonald's could identify that, for instance, millennials predominantly prefer the Egg McMuffin, while the older age group might lean towards the Hotcakes.

2. **Observational Studies**: Researchers might be stationed at select McDonald's outlets to note the flow of customers, specifically observing which age groups are more likely to consume breakfast at McDonald's. Observationally, it might be discerned that the outlets are busiest with younger clientele between 7 am to 8 am, perhaps before they head to work or college.

3. **Usage of Existing Records**: McDonald's could mine its sales data, examining which breakfast items sell the most during specific hours and to specific customer demographics, if that data is available. From this, they might discern that sales of coffee surge post 8:30 am, possibly indicating a second wave of customers seeking a caffeine fix.

Critically evaluating, while descriptive research provides a rich depiction of the current state, it's confined to the "what" and not the "why." For McDonald's, while they'll discern what breakfast items are popular and when, they won't necessarily grasp why those particular items are preferred or why some age groups visit at certain times. This distinction is vital; for deeper comprehension, they'd need to delve into causal or experimental research.

Moreover, the accuracy of descriptive research heavily relies on the tools used. For instance, surveys might suffer from biases based on how questions are framed or the honesty of respondents.

Causal research:

1. Causal research is used to establish **cause-and-effect relationships** between variables.

2. Causal research is used to **determine whether a change in one variable causes a change in another variable**, and is typically used when the researcher wants to understand the underlying mechanisms of a phenomenon.

3. Causal research design typically involves **experimental designs**, where the researcher manipulates one variable **(independent variable)** and observes the effect on another variable **(dependent variable)**, while controlling for extraneous variables.

4. Causal research is **typically more rigorous and time-consuming** than descriptive research, but it can provide more definitive answers to research questions.

Causal research typically involves the following steps:

1. Identifying the research problem and formulating a research question or hypothesis.

2. Reviewing the literature to identify relevant theories, concepts, and previous research.

3. Identifying the variables of interest and defining them operationally.

4. Designing the study, including selecting the research method, participants, and measures.

5. Conducting the study, including collecting and analyzing data.

6. Interpreting the results, including determining whether there is a causal relationship between the variables.

Sub-classification of Causal Research

1. **Explanatory Research:** This type of research is used to explain the causal relationship between variables. Explanatory research typically involves conducting experiments or quasi-experiments in which the researcher manipulates one variable to determine its effect on another variable, while controlling for extraneous variables that may affect the results. Explanatory research is often used in fields such as psychology, sociology, and economics to determine the causes of behavior, social phenomena, and economic trends, respectively.

2. **Predictive Research:** This type of research is used to predict the effect of a variable on another variable. Predictive research typically involves analyzing data from past events to identify patterns and relationships between variables. Predictive research is often used in fields such as marketing, finance, and epidemiology to forecast consumer behavior, stock prices, and disease outbreaks, respectively.

3. **Prescriptive Research:** This type of research is used to identify the best course of action to achieve a desired outcome. Prescriptive research typically involves analyzing data from past events to identify the most effective interventions or treatments for a particular problem. Prescriptive research is often used in fields such as medicine, education, and public policy to identify the most effective treatments for diseases, teaching methods, and policy interventions, respectively.

Causal research can be conducted using a variety of research methods, including experiments, quasi-experiments, and longitudinal studies. In experiments, researchers manipulate one or more variables to determine their effect on another variable, while controlling for extraneous variables that may affect the results. Quasi-experiments involve manipulating a variable that cannot be randomly assigned, such as gender or age. Longitudinal studies involve collecting data over a period of time to determine whether changes in one variable are related to changes in another variable. [10]

McDonald's – Causal Research Illustration

Causal research, a cornerstone of conclusive research, is concerned with understanding cause-and-effect relationships between variables. It tries to discern not just if two variables are related, but if one actively causes changes in the other.

Scenario: McDonald's notices a surge in sales every time they launch a new advertisement campaign for their signature burger, the Big Mac. They aim to determine whether the new advertisements directly cause the spike in sales.

1. **Controlled Experiments**: McDonald's could conduct an experiment where two similar regions (or demographically matched groups) are selected. One region (the experimental group) is exposed to the new advertisement campaign, while the other region (the control group) is not. After a designated period, if the region exposed to the ads shows a significant surge in Big Mac sales compared to the control region, it could indicate a causal relationship between the advertisement and sales.

2. **Field Trials**: Instead of a controlled environment, McDonald's could run the advertisement in a particular city and observe the sales patterns, comparing it with historical data or with cities where the advertisement hasn't been broadcasted.

3. **Longitudinal Studies**: McDonald's might also track sales over an extended period, noting every time a new advertisement campaign is launched and mapping this against sales volume. A recurring pattern of sales spikes after ad campaigns might further evidence the causal link.

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