

Chapter 3: Research Methodology

3.1.Introduction

This chapter outlines the investigative methods, procedures, and relationships employed in this research. It highlights the chosen research design, the target population, the scope of the sample, measurement strategies, data collection tools and techniques, as well as the validity and reliability of the study's methods. Additionally, the chapter elucidates the approach used for analysing information. Furthermore, it delineates the planned achievement of the research outcomes aligning with the research objectives.

3.2.Research design

The research design serves as the comprehensive plan outlining the elements (variables, respondents), their interrelationships, and the methods employed in the research process to ensure the generation of valid conclusions and the practical execution of the study (McCombes, 2021). It plays a crucial role in establishing a solid foundation for a study. A pivotal decision in the research design process involves choosing the research approach, which determines the method for acquiring pertinent information for analysis. The research design process encompasses various interconnected decisions. According to Sileyew (2019), descriptive research offers a detailed account of individuals, events, or situations. Salman & Hassan (2016) assert that descriptive research is suitable for demographic surveys of specific groups (such as gender, age, income, marital status), with the acquired data analyzed to assess trends over time and conduct advanced data analysis to draw correlations. This design provides researchers with a summary of distinct relevant features of phenomena from individual, organizational, and industry perspectives.

The study utilized a blend of descriptive and explanatory research methodologies. Well-constructed questionnaires were employed to address both exploratory and causal inquiries. The descriptive research phase focused on outlining the profiles of the respondents and identifying factors linked to consumer buying behaviour. The application of quantitative explanatory research, or causal research, further elucidated and tested the cause-and-effect relationships between dependent variables (DV,

representing consumer buying) and independent variables (IV, representing Green marketing). This approach facilitated an in-depth explanation of how the identified independent and dependent variables correlated and interacted in the study.

3.3.Target population

As per studies conducted by Allen (2017), the term **population** refers to the entire set of individuals (subjects or events) sharing common characteristics that are of interest to the researcher. In the context of this thesis, the study population was concentrated in four cities of South Gujarat, namely Surat, Navsari, Vapi, and Valsad.

However, considering the vast size of the population, a representative sample was chosen for the study. A sample represents a small subset of the larger relevant group or population. The fundamental idea is that by selecting specific elements from a population and focusing attention on this limited group, it becomes possible to extrapolate the study's findings to the entire population of interest. A population component denotes the individual unit within the sample upon which measurements and observations are conducted (McCombes, 2021).

In this project, a simple random probability sampling technique was employed, involving the selection of a key element in a manner that provides every component of the population an equal chance of being chosen. The sample size comprised 350 individuals from the four cities in South Gujarat, distributed as follows: Surat (100), Navsari (100), Vapi (100), and Valsad. The determination of the sample size was conducted using Slovin's formula, as defined below (Stephanie, 2020):

Slovin's formula is written as:

$$n = \frac{N}{1 + Ne^2}$$

where,

n = Sample size,

N = Total population

e = Error tolerance

At a confidence level of 95, $e=0.05$

$$n = \frac{2800}{1 + (2800 \times 0.05^2)}$$

$n=350$

3.4.Data Collection Method

The data collection method plays a crucial role in determining how researchers gather information for their studies, as outlined by Bhandari (2020). Researchers have the flexibility to use various sources and methods for data collection, as discussed in the study by Ørngreen and Levinsen (2017). Two main categories of data collection methods include primary and secondary methods, both of which are employed to address research problems. In this study, primary data collection was utilized to obtain firsthand information directly from respondents, enhancing the accuracy of data related to green marketing and consumer buying behaviour in South Gujarat, India.

To assess consumer buying behaviour for green products, the researcher employed the method of online survey questionnaires, designing and distributing them to the respondents for data collection. The choice of data collection methods is contingent upon the nature of the data being assessed, as analyzed by Wang et al. (2019).

In terms of sampling, this research opted for Non-Probability sampling, as the exact population size was unknown, and the target population was not systematically sampled. Participants were selected based on their willingness to participate, and a consent form was provided, assuring them of the confidentiality of their private information. The participants received a questionnaire, and the opportunity was given for them to ask any questions. The estimated time for students to complete the 55-item questionnaire and 5 demographic questions sheet was approximately 15-25 minutes.

3.4.1. Data collection Instrument

C.R. Kothari (2020) underscores the significance of collecting data once a research problem is identified and the research design is planned. When deciding on the data

collection method, it is crucial to differentiate between the two types of data: primary data and secondary data.

The survey questionnaire serves as a valuable research tool, aiding the researcher in gathering information from respondents through written interviews, as highlighted by McLeod (2018). For the current study, the survey questionnaire was chosen as the research tool, as it encompasses all the variables and defines the area of interest to be examined by the researcher. Self-administered questionnaires were employed to collect data for this research, as detailed in Appendix IV. These questionnaires were distributed to participants via email, and responses were electronically returned after completion. The survey questionnaire consisted of five sections (Section A to Section E), encompassing 55 close-ended questions and three open-ended questions. The close-ended questions followed a Likert scale format, where responses were categorized from 1 (strongly disagree) to 5 (strongly agree).

In the first part (Section A), respondents provided demographic data such as age, gender, occupation, income, and city, utilizing the Likert scale format to express their opinions on green marketing technology. Sections B to D presented statements to gather information on participants' opinions regarding green marketing, consumer buying behaviour, and green products. Section E included a couple of open-ended questions. The researcher collected and analyzed the responses using quantitative methods, a crucial step in obtaining meaningful results.

3.4.2. Survey administration

The research was conducted using the Google Forms Online Survey platform, which facilitates the collection of information through surveys and automatically stores the gathered data in a spreadsheet. Each respondent received the questionnaire via email, and the data collected was securely stored on the researcher's password-protected computer. Survey administration was a crucial step in addressing the research problem and obtaining accurate data for the study. The survey was meticulously designed, considering the variables present in the study, and successfully elicited responses from the participants based on these research variables.

3.4.3. Pilot testing

The initial phase of data collection involves conducting a pilot analysis with a limited sample using planned techniques. This step serves to test the researcher's approach and identify any issues that need resolution before proceeding with the main data collection process (Malmqvist et al., 2019). In this research, a pilot testing phase was implemented to evaluate the potential consistency of the obtained data, including checking for possible typographical errors. It was essential to review each completed questionnaire to ensure participants comprehended the expectations, that statements were clear and unambiguous, and that all questions were answered without significant issues. Participant feedback from the pilot testing phase was carefully considered to make necessary adjustments to the questionnaire before its distribution to all respondents. The wording of questions was particularly crucial, and modifications were made based on the feedback received during the pilot testing conducted on Google Forms with responses from 10 participants.

3.4.3.1. Description in section B, C, D and E

To enhance clarity, I found it necessary to include a brief description under each section, as five participants indicated that the subheadings were unclear and seemed vague and ambiguous to them.

3.4.3.2. Missing response in Section C statement 4

One response option, strongly agree, was absent in the statement **Green advertising does increase my knowledge and understanding towards green products**. I had to make edits to include this response option.

3.4.3.3. Missing order of sections in questionnaire

Following the completion of section A by respondents, they were erroneously directed to section D instead of section B. I identified this mistake on the form and made the necessary correction.

3.4.3.4. No compulsion to answer each statement

Respondents were not obligated to answer each statement, leading to some respondents leaving certain statements unanswered. To address this, I made it mandatory to answer each item in the Google form before proceeding to the next one.

3.4.4. Scale for each Variable

3.4.4.1. Green marketing instrument

This study incorporated the green marketing instrument based on research conducted by Tarafdar et al. (2007), encompassing the comprehensive green marketing construct. The inferential model of the green marketing construct includes sub-constructs for green marketing creators (Ragu-Nathan et al., 2008; Tarafdar et al., 2007) that measure variables such as Green Advertising, Green Price, Green Product Availability, Green Product & Brand, and Eco Labels. Green Advertising is assessed using 5 items, Green Price with 3 items, Green Product Availability with 3 items, Green Product & Brand with 5 items, and Eco Labels with 2 items. Responses to all items were collected using a 5-point Likert scale, ranging from 1= Strongly Disagree to 5= Strongly Agree.

3.4.4.2. Consumer buying green products

The measurement of consumer buying behaviour for green products was conducted using the job satisfaction survey scale outlined by Nortje (2021). The Consumer Buying Green Products scale comprises 12 items, and all responses were rated on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

3.5. Reliability and Validity of data

Reliability, often associated with consistently yielding the same results across multiple uses, is a crucial consideration for researchers when discussing their research instruments (Mohanjan & Haradhan, 2017). Hamed (2016) defines reliability as the

consistency of a concept's measure. Liu et al. (2020) note that reliability statistics offer an estimate of the questionnaire's reliability.

60 The reliability of the questionnaire in this study was assessed using the Cronbach's alpha test. Widely applied to Likert questions in a questionnaire, Cronbach's alpha is used to determine the reliability of a measurement (Olaniyi, 2019). Generally, an alpha value of 0.6-0.7 indicates an acceptable level of reliability, while 0.8 or higher indicates a very good level (Ursachi et al., 2015). The tables below depict the testing of data consistency.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.916	.918	23

Table 3.1: Reliability analysis for Green Marketing

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha based on Standardised Items	N of Items
.934	.934	13

Table 3.2: Reliability Analysis of Consumer buying behaviour

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha based on Standardised Items	N of Items
.719	.743	3

Table 3.3: Reliability of Environment Knowledge

As depicted in Table 3.5.1, the green marketing variable exhibits a Cronbach's alpha value of .916. Similarly, the subsequent tables reveal Cronbach's alpha values of .934 and .719 for the consumer buying behaviour and environment knowledge variables, respectively. Hence, all three variables have values exceeding 0.7, signifying good reliability.

3.6.Ethical considerations

During the research process, emphasis was placed on maintaining the integrity of the research method and ensuring the well-being and self-esteem of the research subjects. This involved maintaining balanced subjectivities, providing accurate research

accounts, and adhering to ethical norms to foster the necessary expertise. Additionally, attention was directed towards addressing the considerations outlined by McCombes (2021), encompassing various pertinent issues.

i. **Ensuring participants were given informed consent**

The concept of informed consent underscores the importance of informing participants about the nature of the research study. Survey participants were granted informed consent when they demonstrated a comprehensive understanding of the study's purpose, including time commitments, activities involved, covered subjects, and associated risks. Informed consent involved the following aspects:

- Participants possessed the cognitive capacity and psychological maturity to comprehend their involvement in the study.
- Participants independently decided to participate in the study.
- Participation in the study was entirely voluntary.
- Participants were aware of the nature and specifics of the ongoing research.
- Participants were conscious of their right to withdraw from the research study.
- Transparent communication with participants about the study type was crucial.
- Participants were not coerced or pressured into participating in the study.

ii. **Ensuring no harm comes to participants was another priority**

Participants were safeguarded against physical, psychological, and overall work-related harm, and measures were taken to prevent any potential danger to them. The potential positive outcomes of the research were not deemed sufficient to justify any potential negative consequences on participants.

iii. **Ensuring confidentiality and anonymity**

All information obtained from participants was handled with confidentiality, including restrictions on access to raw data, secure data storage, reporting outcomes in a manner that prevents participant identification, and obtaining approval for any subsequent use of the data. Any insights gained about participants during their participation in the study were held in the strictest confidence.

iv. **Ensuring that permission was obtained**

Approval for the study was obtained from the organization, and the formal request for permission is included in the appendix.

3.7.Data Analysis (tools and techniques)

In this study, the Statistical Package for Social Sciences (SPSS) was utilized for the analysis of quantitative data. The adoption of this tool is crucial for the researcher, as it ensures an analysis free from human error, as mentioned by Omgreen and Levinsen (2017). Demographic data will be analyzed using measurements such as frequencies, percentages, and means. Furthermore, correlation tests and tests for differences will be employed to validate hypotheses and evaluate the relationship between independent variables and dependent variables.

3.8.Conclusion

This research process encompasses the entire strategies and framework, spanning from problem formulation to problem validation, encompassing all parameters. It establishes a foundation for how the research methodology is devised and structured. The data collected from administered questionnaires will be analyzed and interpreted in the subsequent chapter.

