CHAPTER 4: HYPOTHESIS AND RESEARCH METHODOLOGY

DATA ANALYSIS & INTERPRETATION

4.1 Introduction
With the advancement of technology, customers’ expectations have changed, they want to be aware of everything that’s happening with their health on one click, to keep up with the pace of customers’ requirements that includes not only the doctors and the patients but all the stakeholders involved. Pharma companies have upgraded to digital marketing strategies from the earlier traditional strategies. In the traditional strategy all the activities moved around the Medical representative and the doctor. Medical Representative is the one representing the Pharma company and promoting the medicines to the doctors, with the support of promotional inputs and strategies planned by the marketing department. Traditional marketing strategies have limitations that encouraged the research for digital marketing strategies getting used in the Pharma Industry as studied in the following research. Various methods including the primary and secondary data collection techniques are used to collect proper data and support the selected topic.

4.2 Research strategy
The research strategy is said to be the overall plan of a study. It acts as the guideline of the research. Research strategy comprises of different methods to collect the appropriate data for the study (Bryman, 2015). The choice of the strategy depends on the requirement of the study. Research strategy consists of research design and approach, data collection methods, research paradigm, sampling techniques, sample size, research process, accessibility issues, ethical considerations, and data analysis tools etc.

The research approach, research design, research paradigm, data collection methods, sampling techniques, sample size, data analysis tools chosen for this study have been described below. Further the ethical considerations for the study are mentioned below.
4.3 Research design
The research design is the complete strategy of a research work and ensures that the identified research problem has been addressed appropriately (Cohen et al., 2013). It acts as the road map regarding collecting the required data and analyze the same. As a result, the researcher can meet the research objectives properly. There are mainly four types of research designs used in a research work (Creswell, 2013). These are- descriptive, exploratory, explanatory, and experimental.

Chosen design
Exploratory research design is usually chosen to get a better grasp over the problem and does not offer conclusive proof. This study is regarding the changing Pharma scenario in India due to the advent to technology; hence exploratory is the best research design to get insights into this transforming scenario. Furthermore descriptive research design is useful for depicting the opinions for a particular group as accurately as possible. The research has chosen exploratory and descriptive research designs for the following study with which the researcher has tested the developed hypotheses and formed a valid conclusion regarding the relationship between the independent and dependent variables.

4.4 Research Paradigm
This is a set of norms used in the research work and helps in understanding the reality. Different assumptions are considered in the qualitative and quantitative research methods as per the research done by the researcher (Creswell, 2012). Ontology is such a paradigm, which finds the reality based on the research topic. Thesis further divided into main sections that are positivism and interpretivism being used in a study.

Chosen paradigm
The researcher has chosen positivist paradigm for the following study so that the factual information can be collected along with the measurement. This helps in gathering the research findings in an observable and quantifiable manner. The researcher has collected quantifiable data with this paradigm which helped in supporting the research hypothesis.
4.5 Research approach
The research approach is said to be the plan or process of the research which consists of various steps to collect, analyze and interpret data (Flick, 2015). This is based on the research problem and is divided into two main sections that are data collection approach and reasoning approach.

4.5.1 Data collection approach
The data collection approach is classified as qualitative and quantitative data. Qualitative data is also known as exploratory research helps in gaining an insight into the research problem to test the hypothesis (Hennink et al., 2010). The data in qualitative evidence is collected through interviews or focus groups or observations etc. But, on the other hand, quantitative research enumerates the research problem by collecting the numerical data which are later transformed into the statistical ones in the form of charts, images or graphs (Jackson, 2015). This is collected with the help of online surveys, face to face surveys and mobile surveys etc.

Chosen approach
The researcher has chosen the quantitative data collection approach for the study. The quantitative data has been collected with the help of surveys to understand the perceptions of the respondents regarding the strategies used in digital marketing to promote Pharma products. The researcher, here, has distributed two sets of questionnaires among two populations (doctors and patients) to collect the required data regarding the study. The following approach has been chosen in order to collect the quantifiable data from the market and present it in a graphical manner so that the readers can understand the results properly.

4.5.2 Reasoning approach
Reasoning approach in a research study is divided into three main section. These are inductive, deductive and mixed approaches (Mackey & Gass, 2015). Three of them hold significance regarding collecting the relevant data for the study and analyze the same to meet the research objectives.
Chosen approach
The researcher has chosen a deductive approach for the study to test the hypotheses and analyze whether the statements are confirmed or rejected. This is also associated with the scientific observations to read the existing theories based on the similar topic of research.

4.6 Data collection technique
Research data is the primary asset of the study. The data collection techniques are classified into two main parts that are primary and secondary data (Bryman, 2015). Both, the data help meeting the research aim.

Chosen technique
The researcher has chosen both the data collection techniques to cover the research objectives. The primary data has been collected using the quantitative data collection method as discussed earlier. The researcher has distributed two sets of close ended questionnaires on the basis of Likert scale for easy conversion of the data in the quantitative research. On the other hand, the secondary data has been collected using the different secondary resources like books, journals, articles and websites as per the study is concerned.

4.7 Data analysis tools
Data analysis tools help in analyzing the collected data and present it either in the form of graphs or charts or a logical manner. Regarding qualitative data, the researcher analysed the data using the thematic analysis, content analysis or human interpretations techniques (Cohen et al., 2013). But, in the quantitative data, the data is analyzed using the different data analysis tools like chi-square test, ANOVA, linear regressions, correlations, multiple regressions or factor analysis etc.

Chosen tool
In the present research, the researcher has selected chi-square test as the statistical tool to analyze the quantitative data and has been transformed using
SPSS as the software so that the data can be presented in the form of graphs or charts. This has helped in presenting the information explicitly and has further assisted in analyzing the same.

4.8 Sampling technique
Sampling helps in identifying the target respondents of the study from which the researcher collects the primary data of the study (Creswell, 2013). Sampling is divided into two main parts probability and non-probability sampling techniques as per the quantitative and qualitative study. They are further divided into subparts.

Chosen sampling
In the following study, the researcher has chosen random sampling technique under quantitative research to choose the samples randomly and collect the data. The targeted respondents have been selected in a random manner as per the requirements of the study.

4.9 Sample size
This denotes the number of respondents chosen for the study and is known as the samples of the research work (Creswell, 2012). In the present study, the researcher has chosen hospitals of Mumbai region for collecting data by approaching the doctors and patients. This is essential for studying the impact of digital marketing services on customer purchasing behavior. Therefore, the residential doctors of the hospitals and the patients visiting the institutions during the data collection procedure were chosen as the samples. In this manner, all total 200 doctors and 400 patients have been chosen for the study.

4.10 Ethical considerations
Ethical considerations of the study decide the norms and conditions following which a research study is conducted. The researcher in the following study has followed the rules to complete the study ethically (Flick, 2015). The researcher has taken the permission of the respondents before collecting primary data from
them. The collected data has been used in the academic purpose and not in commercialization. The data has been stored in a secure place so that third party access can be denied (Henninket et al., 2010). The respondents were permitted to withdraw at any point in time if they want to.