

CHAPTER 3: METHODOLOGY

Introduction

In this chapter, the discussion is focused on detailing and justifying all methodological steps taken to complete the research project. The discussion starts with consideration of philosophical choices and then continues to detailing research approach selection. Furthermore, the chapter also presents justifications for the selection and choices of research design, sampling method, primary research data collection instrument (questionnaire), data analysis techniques and ethical considerations.

Research philosophy

In this section, the study reflects on the assumptions of the author regarding the philosophical perspective regarding research phenomenon. These are critical because all remaining choices are dependent upon the epistemological position of the author. Positivism, realism, and pragmatism are typical choices in social research process which can be used to explain how the researcher views research phenomenon from philosophical point of view. In this study the researcher adopted the positivism epistemology because as compared to others positivism provides answers to research questions with higher reliability and validity.

The reason to choose Positivism in this study is that it helps to explain the causal relationships between organisational functions such as inventory management and profitability through quantifiable observations. Since positivism uses methods and ethos of natural sciences therefore it helps to provide statistical evidence regarding the relationship between inventory management and profitability of Qatar Airways. In addition, through the use of quantitative data, positivism also minimises personal bias and maximises objectivity in the results and analyses of research questions and phenomenon.

Research approach

According to Kumar (2019) the research approach is defined as way forward for the researcher in which the study selects the strategy and design in a logical manner and defines systematic steps to choose research methods and other research choices such as data collection process and instruments, data analysis techniques and measures and the interpretation of the data. There are typically three main approaches, namely Inductive, abductive and deductive and further categories are developed and applied using these three basic research approaches. The choice of research approach is based on research questions and objectives as well as philosophical position undertaken by the researcher.

In this study the research approach selected in the deductive approach. The deductive approach was used because it suits the choice of positivism philosophy which encourages to have objective perspective and approach towards research question. The deductive approach requires development of tentative hypotheses and using methods and ethos of natural sciences and collects quantifiable observations to test the hypotheses. The deductive approach is typically used to test existing theoretical models within specific settings such as the case of this study which aims to test the importance and impact of inventory management on profitability of Qatar Airways.

Research design

Flick (2015) posited that research design can be defined as a structure comprised of different methods and techniques that are chosen by the researcher to systematically examine and integrate various steps of research process. The choice of design is critical in answering the research questions in a reliable and valid manner. There are two basic research designs, quantitative and qualitative designs.

This study is based on quantitative design. The primary reason to choose quantitative design is that it matches with previous two decisions of choosing positivism and deductive research approach. Furthermore, quantitative data is required to test the causal relationship between inventory management and profitability of Qatar Airways. As compared to qualitative design, the quantitative design increases the reliability and validity of answers to research questions because the underlying evidence is objective in nature and prevents personal bias. According to the research study conducting by Choy (2014) analysing the impact of practices of management inventories on organisational performance purports the integration of quantitative research design for collecting data and analysing collecting data through quantitative means.

Sampling method

Choy (2014) concluded that sampling method is one of the most critical choices in the research process because it affects the entire data collection process and has significant contribution in terms of reliability and validity of the results as well as answers to research questions. This study has chosen to conduct a non-probability based sampling technique because the researcher, due to time and resource constraints, lacks access to entire target population and thus is unable to provide equal chances/probability for target members to participate in the data collection step.

The target population of the research process is also important. As argued by Vamsi Krishna Jasti, and Kodali (2014) the sampling unit is defined to gather most relevant information and data for the research process. in order to gain reliable and authentic information, this study aimed to collect data from employees in Qatar Airways who are related to inventory management and spare parts management during maintenance activities. In order to have a statistically acceptable sample size and gather sufficient quantitative data the sample size for this

study was aimed to be higher than 30 members. Using questionnaire as data collection instrument the researcher was able to collect data from 70 employees in Qatar Airways.

Data Collection Process

There are two main sources of data, namely, sources for primary data and sources for secondary data. In this study both secondary and primary data have been gathered and analysed to provide answer to research questions and gain comprehensive knowledge about research phenomenon.

The primary data is defined as the fresh or first-hand data and information that is collected directly from target population through research instruments such as questionnaires and interviews. The primary data provides new and fresh insights into the research phenomenon and is considered critical to identify new and innovative ideas regarding research problem and phenomenon. In this study a self-administered questionnaire was designed to collect primary data which was conducted through emails and internet platforms.

Furthermore, this study also collected secondary data which is typically sourced from past research articles, industry reports, government publications and other sources of secondary information. The benefit of secondary data is that it helps to identify existing theories and evaluate consistency of current results with past studies.

Research Instrument

There is a variety of research instruments such as questionnaires, interviews, focus groups, observations, etc. The selection of research instrument must be done according to the research design. Since this study is based on quantitative design, therefore this study was required to identify a research instrument that provides quantitative data. Survey questionnaires are considered to be extremely time and resource efficient method of data collection in social

science community. In this study the researcher designed the questionnaire with different sections. All questions in the questionnaire were based on Likert five point scale. The first section in the instrument is focused on identifying demographic characteristics of the participants such as participant's age, education, gender, job position, and work experience. The next section in the questionnaire was aimed to gather data about research variables which in turn was used to test the hypotheses.

Data Analysis

Data collected from the questionnaire will be analysed by demographic calculations (mean, percentage, frequency, SD) and regression analysis using MS-Excel or SPSS software. In addition, bar charts and pie charts will be created to meet the results. According to Kumar (2019) interpretation of quantitative data, quantitative information can be transformed into meaningful knowledge using tabular and graphical representations. Regression analysis demonstrates to test the relation between two variables by describing the impact of an independent variable on the dependent variable.

Research Constraints

This research study will be limited to different aspects including budgetary constraints, time constraints and reliability of the collected data. In addition to this, this research study is also limited to the geographical aspects resulting in researching within the domain of Qatar Airways. In addition to this, access to limited sample size would also serve as limiting the scope of the study and assuming collected data reliable to expand the existing knowledge base.

Ethical Consideration

It is the responsibility of the researcher to implement ethics in the research process to preserve formality. Before continuing to distribute the questionnaire, the researcher will give informed

consent to participants to understand the purpose of the study. To ensure the effectiveness of the project, the first step is for researchers to provide the Ethics Committee with all the details of the study so that they can assess benefits and risk factors. If the study contains the maximum benefits and minimum risk, the researchers ensure the success of the experimental process.