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RESEARCH METHODOLOGY

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RESEARCHMETHODS

Module and Research Projects Guidelines for the Chartered Institute of Customer Management

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Objectives of this document

1) To outline the grading, awarding of points to research proposal and to the final chapters of the research report.

2) To act as a module guideline for the CICM students who are at the research stage of the studies as well as the supervisors who may be asked to work with students and assist with the final grading of the students research works.

3) To ensure that CICM approach to the research requirements for students are standardised and that the assessments are fair and acceptable.

Table of Contents

UNIT 1 INTRODUCTION TO RESEARCH

1.1 Introduction

Conducting good research requires first retraining your brain to think like a researcher. This requires visualizing the abstract from actual observations, mentally "connecting the dots" to identify hidden concepts and patterns, and synthesizing those patterns into generalizable laws and theories that apply to other contexts beyond the domain of the initial observations. Research involves constantly moving back and forth from an empirical plane where observations are conducted to a theoretical plane where these observations are abstracted into generalizable laws and theories.

1.2 What is Research?

A good working definition of academic research and writing can be given as follows: investigation and writing based upon the idea of scientific inquiry. A reader may at this point wonder if this definition sheds any light on the subject. The key here is to focus on the term "scientific inquiry". Research is a very general term for an activity that involves finding out, in a more or less systematic way, things you did not know. A more academic interpretation is that research involves finding out about things that no-one else knew either. It is about advancing the frontiers of knowledge. Research methods are the techniques you use to do research. They represent the tools of the trade, and provide you with ways to collect, sort and analyse information so that you can come to some conclusions. If you use the right sort of methods for your particular type of research, then you should be able to convince other people that your conclusions have some **validity**, and that the new knowledge you have created is soundly based.

1.3 Types of research

Research is broadly classified into two main categories which are

1) Fundamental or basic research
2) Applied research

Basic research

Basic research is an investigation on basic principles and reasons for occurrence of a particular event or process or phenomenon. It is also called theoretical research. A study or an investigation of a natural phenomenon or relating to pure science is termed as basic research.

Applied research

In an applied research one solves certain problems employing well known and accepted theories and principles. A research the outcome of which has immediate application is an applied research.

Differenced between Basic and Applied Research

BASIC	APPLIED
Seeks generalization	Studies individuals or specific cases with the objective to generalise.
Aims at basic processes	Aims at any variable which makes the desired difference
Attempts to explain why things happen	Tries to say how things can be changed.
Tries to get all the facts	Tries to correct the facts which are problematic
Reports in technical language of the topic	Reports in common language

1.4 What are the objectives of Research?

The prime objectives of research are:

1) To discover new facts
2) To verify and test important facts
3) To analyse an event or process or phenomenon to identify the cause and effect relationship
4) To develop new scientific tools, concepts and theories to solve and understand scientific and nonscientific problems
5) To find solutions to scientific, nonscientific and social problems and
6) To overcome or solve the problems occurring in our everyday life.

1.5 Unit of Analysis

One of the first decisions in any social science research is the unit of analysis of a scientific study. The unit of analysis refers to the person, collective, or objects that is the target of the investigation. Typical unit of analysis include individuals, groups, organizations, countries, technologies, objects, and such.

Understanding the unit of analysis is important because it shapes what type of data you should collect for your study and who you collect it from.

1.6 Variables

A variable is a measurable representation of an abstract construct. As abstract entities, constructs are not directly measurable, and hence, we look for proxy measures called variables.

Depending on their intended use, variables may be classified as independent, dependent, moderating, mediating, or control variables. Variables that explain other variables are called independent variables, those that are explained by other variables are dependent variables, those that are explained by independent variables while also explaining dependent variables are mediating variables (or intermediate variables), and those that influence the relationship between independent and dependent variables are called moderating variables.

1.7 Sources of Data

- *Primary Data*

Original research where the data being collected are designed specifically to answer the research question. These are data collected by the researcher and used for the purpose of the research. It could be collected using a questionnaire administered on respondents included in the sample. Such data is original.

- *Secondary Data*

Consists of studies done by others and for different purposes than for which the data are being reviewed. The exploratory phase of the research process uses secondary data to look for ways others have addressed and/or solved problems similar to the research question, and gather background information on the topic to refine the research question. Sources include: encyclopedias, textbooks, handbooks,

magazines and newspaper articles, most newscasts, web-based sources, publications complied by different organizations that collect statistical information, such as the Central Statistical Office (CSO). The research thus adopts data which may initially not have been collected for use in that particular research but for something else. Whatever source, the trick is to browse and still stay focused on the topic at hand.

1.8 Sources of Literature

· Summaries of theses and dissertations

· Indexes of research journals

· Bibliographies

· Dictionaries

· Encyclopedia

· Internet

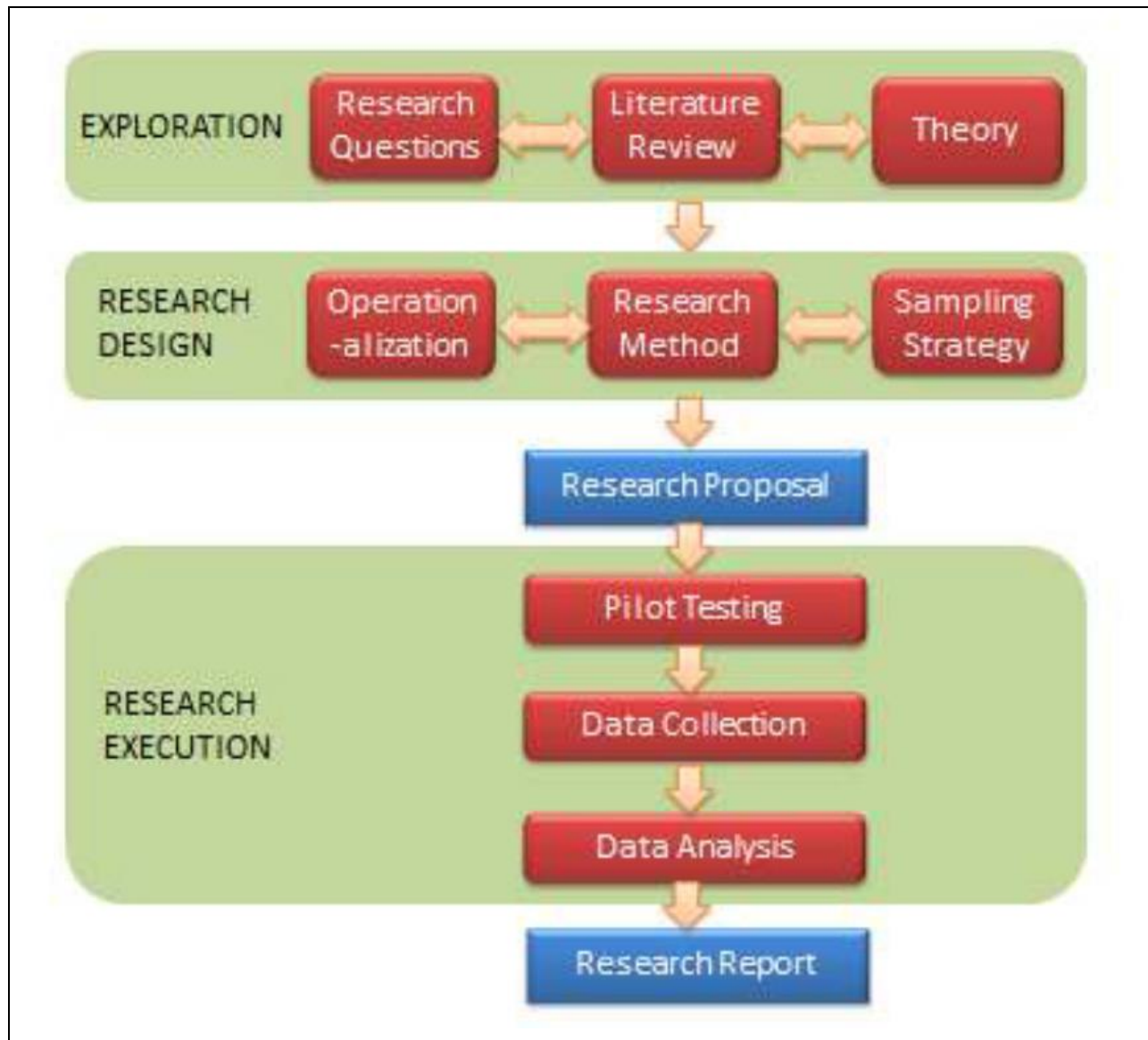· Primary documents, e.g. circulars, reports

1.9 Research Proposition

A proposition is a tentative and conjectural relationship between constructs that is stated in a declarative form. An example of a proposition is: "An increase in student intelligence causes an increase in their academic achievement." This declarative statement does not have to be true, but must be empirically testable using data, so that we can judge whether it is true or false. Propositions are generally derived based on logic (deduction) or empirical observations (induction). Because propositions are associations between abstract constructs, they cannot be tested directly. Instead, they are tested indirectly by examining the relationship between corresponding measures (variables) of those constructs. The empirical formulation of propositions, stated as relationships between variables, is called hypotheses.

1.10 Theories and Models

A theory is a set of systematically interrelated constructs and propositions intended to explain and predict a phenomenon or behavior of interest, within certain boundary conditions and assumptions. Essentially, a theory is a systemic collection of related theoretical propositions. While propositions generally connect two or three constructs, theories represent a *system* of multiple constructs and propositions. Hence, theories can be substantially more complex and abstract and of a larger scope than propositions or hypotheses.

1.11 Research process adopted by CICM

The first phase of research is exploration. This phase includes exploring and selecting research questions for further investigation, examining the published literature in the area of inquiry to understand the current state of knowledge in that area, and identifying theories that may help answer the research questions of interest.

The first step in the exploration phase is identifying one or more research questions dealing with a specific behavior, event, or phenomena of interest. Research questions are specific questions about a behavior,

event, or phenomena of interest that you wish to seek answers for in your research. Examples include what factors motivate consumers to purchase goods and services online without knowing the vendors of these goods or services.

The next step is to conduct a literature review of the domain of interest. The purpose of a literature review is three-fold: (1) to survey the current state of knowledge in the area of inquiry, (2) to identify key authors, articles, theories, and findings in that area, and (3) to identify gaps in knowledge in that research area. Literature review is commonly done today using computerized keyword searches in online databases. Keywords can be combined using "and" and "or" operations to narrow down or expand the search results. Once a shortlist of relevant articles is generated from the keyword search, the researcher must then manually browse through each article, or at least its abstract section, to determine the suitability of that article for a detailed review. Literature reviews should be reasonably complete, and not restricted to a few journals, a few years, or a specific methodology. Reviewed articles may be summarized in the form of tables, and can be further structured using organizing frameworks such as a concept matrix. A well-conducted literature review should indicate whether the initial research questions have already been addressed in the literature (which would obviate the need to study them again), whether there are newer or more interesting research questions available, and whether the original research questions should be modified or changed in light of findings of the literature review. The review can also provide some intuitions or potential answers to the questions of interest and/or help identify theories that have previously been used to address similar questions.

The next phase in the research process is research design. This process is concerned with creating a blueprint of the activities to take in order to satisfactorily answer the research questions identified in the exploration phase. This includes selecting a research method, operationalizing constructs of interest, and devising an appropriate sampling strategy.

The researcher must also decide what research method they wish to employ for collecting data to address their research questions of interest. Such methods may include quantitative methods such as experiments or survey research or qualitative methods such as case research or action research, or possibly a combination of both.

Researchers must also carefully choose the target population from which they wish to collect data, and a **sampling** strategy to select a sample from that population. For instance, should they survey individuals or firms or workgroups within firms? What types of individuals or firms they wish to target? Sampling strategy is closely related to the unit of analysis in a research problem. While selecting a sample, reasonable care should be taken to avoid a biased sample (e.g., sample based on convenience) that may generate biased observations.

1.12 Research Proposal

A research proposal detailing all of the decisions made in the preceding stages of the research process and the rationale behind each decision. This multi-part proposal should address what research questions you wish to study and why, the prior state of knowledge in this area, theories you wish to employ along with hypotheses to be tested, how to measure constructs, what research method to be employed and why, and desired sampling strategy.

1.13 Pilot Testing

Pilot testing is an often overlooked but extremely important part of the research process. It helps detect potential problems in your research design and/or instrumentation (e.g., whether the questions asked is intelligible to the targeted sample), and to ensure that the measurement instruments used in the study are reliable and valid measures of the constructs of interest. The pilot sample is usually a small subset of the target population. After a successful pilot testing, the researcher may then proceed with **data collection** using the sampled population. The data collected may be quantitative or qualitative, depending on the research method employed.

1.14 Data Analysis

Following data collection, the data is analyzed and interpreted for the purpose of drawing conclusions regarding the research questions of interest. Depending on the type of data collected (quantitative or qualitative), data analysis may be quantitative (e.g., employ statistical techniques such as regression or structural equation modeling) or qualitative (e.g., coding or content analysis).

1.15 Research Report

The final phase of research involves preparing the final research report documenting the entire research process and its findings in the form of a research paper, dissertation, or monograph. This report should outline in detail all the choices made during the research process (e.g., theory used, constructs selected, measures used, research methods, sampling, etc.) and why, as well as the outcomes of each phase of the research process. The research process must be described in sufficient detail so as to allow other researchers to replicate your study, test the findings, or assess whether the inferences derived are scientifically acceptable.

UNIT 2 RESEARCH PROPOSAL

2.1 Introduction

A research proposal detailing all of the decisions made in the preceding stages of the research process and the rationale behind each decision. This multi-part proposal should address what research questions you wish to study and why, the prior state of knowledge in this area, theories you wish to employ along with hypotheses to be tested, how to measure constructs, what research method to be employed and why, and desired sampling strategy.

2.2 The Structure of the Research Proposal

0. Title page, institute, name, candidate number, year of award, submission narrative – this is then followed by the Table of Contents
1. Introduction
2. Overview of the research area
3. Background to the research study
4. Purpose of the research study
5. Statement of the problem
6. Research objectives
7. Research questions
8. Research Hypothesis
9. Significance of the research study
10. Scope
11. Delimitation
12. Limitations
13. Assumptions
14. Preliminary Literature Review
15. Research methodology
16. Proposed structure of the research report
17. Research Timetable (Gantt Chart)

18. Research Budget

19. References

UNIT 3 - RESEARCH REPORT PRELIMINARY PAGES

3.1 Introduction

The front pages of the research report are numbered using small Roman numerals and are arranged as follows:

3.2 The Title Page

This is considered to be page (i), but is left unnumbered. It shows:

· The Institution granting the degree

· Title of project (single spaced)

· Name of writer

· Purpose of research project

· Name of department

· City

· Year of award

3.3 The Release Form

This form grants the University permission to produce copies of the project and also reserves the author's publication rights.

3.4 The Approved Form

This serves as official acknowledgement and acceptance of the project as satisfactory. It is signed by the supervisor(s).

3.5 Dedication (Optional)

Serves as a tribute to a specific individual or individuals

3.6 The Abstract (Executive Summary)

This is a very brief summary of the report, used by potential readers to determine at a glance, the contents of the project. It is a concise summary of

· The statement of the problem(s)

· The purpose of the study

· The methodology used

· Summary of major findings conclusions, recommendations and suggestions for further research

This is usually written after the rest of the project is finished. It should be at most a page, but not more than two pages.

3.7 Acknowledgements

This section enables the researcher to thank persons who contributed to the successful making of the project.

3.8 Table of Contents

The table of contents outlines the components of the research report. After the preliminaries, you then list chapters and chapter headings and sub-headings showing the page(s) where these are located in the research report. Finally, the back pages materials (i.e. references and appendices), are presented.

3.9 List of Tables

Using the lower case, show the table number, its title and reference page.

3.10 List of Figures

In the lower case, show the figure number, title and reference page.

3.11 List of Acronyms

3.12 List of Abbreviations

3.13 TEXT FORMATTING

In presenting the main text of the report attention should be paid on the following specifications:

(a) Margins

The top, bottom, left and right hand margins should have the following specifications:

· 3.8 cm on the left margin to allow for binding

· 2.5 cm at the top and bottom

· 2.5 cm on the right hand

(b) Typing Rules

· Use A4 page and type on one side of the page only using font size 12 points and double line spacing

· All chapters should be numbered in Roman numerals, centered at the top of the page and typed in the upper case.

· Chapter titles should be in capitals, centered and 2 spaces below the chapter number heading.

· Sub-headings should start from the left margin and can be underlined, highlighted or done in bold, using capitals and lower case combined. When the bold font is used, do not underline.

· Sub-headings that take more than one line should be single-spaced

· Each chapter begins on a separate new page.

(c) Text Spacing

Begin 3 spaces below the last line of the chapter title. Use 2 lines to divide paragraphs or when beginning a new sub-division. Be consistent in the mode of typing.

(d) Quotations

· Long quotations should be indented (4 spaces from left and right margins), be single-spaced, in italics and be enclosed in quotation marks.

· Quotations less than 3 lines are enclosed in quotation marks and typed within the general text.

(e) Pagination

· Preliminary pages are numbered in the lower case of the Roman numerals.

· Arabic numbering is used for the rest of the project, beginning on chapter one up to the end of appendices.

· Numbering should be done at the bottom center of each page.

(f) Back Page Materials

References should come immediately after the last chapter. The references should be listed alphabetically and not numbered. They should be single spaced, leaving a line in between each reference. Use italics for titles of books and Journals. Titles of articles should be in inverted commas.

References should reflect works consulted and appearing in the text. All sources of information referenced in the report must be acknowledged and traceable. The reader must be able to verify these sources without having to contact you first. All articles cited must appear in your reference list.

The references sections should start on a separate page. If the same person is author of more than one reference in your list, then these are ordered chronologically for that person. If more than one reference is supplied for the same author for the same year, then these are labeled "a", "b", "c", etc.

(g) *Appendices* should be paged normally as an extension of the research document. Each appendix should have a title and numbered appropriately.

(h) Dissertation Length

The length of the final report/project/dissertation should be between 10 000 and 12 000 words for diploma/undergraduate level and between 12 000 and 15 000 words for MSc level. The word count tool on your computer should assist you in providing an update of the number of words and pages as you word-process your text.

(i) THE MAIN RESEARCH REPORT

This refers to chapters one to five and constitutes the main research report. The main of the project is written in the *past tense*, using reported speech.

Each chapter should begin with an introduction and end with a summary. The *introduction* gives the researcher the opportunity to spell out in brief the main concerns and focus of the chapter. The introduction must be clear, concise and to the point. Avoid generalizations. The *chapter summary* provides a brief summary of the chapter at the same time providing a statement to prepare the reader for the next chapter.

UNIT 4 RESEARCH REPORT CHAPTER ONE

CHAPTER I – INTRODUCTION AND BACKGROUND (Structure of the Chapter)

1.1 Introduction

1.2 Overview of the research area

1.3 Background to the research study

1.4 Purpose of the research study

1.5 Statement of the Problem

1.6 Research objectives

1.7 Research questions

1.8 Research hypothesis

1.9 Significance

1.10   Scope

1.11   Delimitations

1.12   Limitations

1.13   Assumptions research study variables

1.14   Operational terms and definitions

1.15   Structure of the Research Report

1.16   Summary of Chapter

(a) Purpose of the Chapter

This sets the foundation of your study by providing background information, which enables others to understand your research. After introducing the chapter, the main sub-headings are arranged as follows:

(b) Background to the Study

This should situate the research into relevant context, from general to specific. In the final analysis, you should identify the gap that must be filled by the present study.

(c) Statement of the Problem

Provide a brief and clear statement of the problem to be solved. The problem statement should be clear, without the use of idioms. It is important to separate symptoms from problems and focus on the problem. The problem should be researchable, carefully fitting into the broader context of current theory and relevant research and clearly and logically related to its sub-problems/research questions or hypotheses.

(d) Purpose of the Study

Clarifies the aims or objectives of the study, what the study sought to accomplish. The objectives flow naturally from the problem statement, providing concrete, and achievable goals. The research objectives are crucial as they provide the basis for judging the remainder of the final report.

(e) Research Questions/Sub-problems

Research questions must be developed from the research problem and study objectives and should yield responses, which can be reconstituted, to make up a complete answer to the main research question or problem. They are foundations for creating the research data collection instrument. The research questions must be *precise* and must *specify variables*. [Variables in research may be classified as objects or properties. *Objects* include the things of ordinary experience, such as tables, people, books, and cars. They also include things that are not as concrete, such as genes, attitudes, neutrons, and peer-group pressures. *Properties* are the characteristics of the objects. A person's physical properties may be stated in terms of weight, height, and posture. Psychological properties include attitudes and intelligence. Social properties include leadership ability, class affiliation, or status]. In general, research questions should be positive statements which are capable of being proven or not proven. This is why research questions can be stated in the format of hypotheses. Each research question must be stated as explicitly as possible. It should be sufficiently specific to enable both the methodology and data collecting techniques relevant to the methodology to be formulated (Birly and Moreland, 1998).

As the research project proceeds, is always useful to return periodically to the research question(s), asking yourself "why am I doing this and what am I trying to find out?"

(f) Statement of Hypotheses

These are tentative answers to research questions (or sub-problems). A *hypothesis* is a *proposition* that is formulated for empirical testing. (a proposition is a statement about concepts that may be judged as true or false).

The role of a hypothesis is to

· Guide the direction of the study

· Identify facts that are relevant and those that are not

· Suggest which form of research design is likely to be most appropriate

· Provide a framework for organizing the conclusions that result

They should be stated in a testable format and can be written in null or alternate form. Hypotheses should be related to the principal problem and sub-problem. Hypotheses can be relational, correlational or explanatory (causal).

A **null hypothesis** is an assumption of a neutral (non-causal) or interactive relationship between items – e.g. one might with to examine if there is any difference between rural and urban households in their consumption patterns.

The null hypothesis might therefore be:

There is no difference between urban and rural households in terms of their consumption patterns.

A hypothesis guides the direction of the study, identifies facts that are relevant and those that are not, suggests which form of research design is likely to be appropriate, and provides a framework for organizing the conclusions from the results.

If the researcher is not quite confident of statistical testing of hypotheses, research questions can be used instead.

Important points regarding research questions and/or statements of hypotheses

· A statement which is value judgment will not do.

· Similarly, a statement for which empirical evidence could not be obtained would not be suitable.

· A research question/hypothesis which presupposes the result would also not be appropriate.

(g) Significance of the Study

This section allows the researcher to indicate how the solution to the problem or the answer to the research questions can influence theory and practice. There is need to demonstrate why it was worth the time, effort, and expense involved to carry out the research, who would benefit from the study and how?

(h) Assumptions

These are statements of what the researcher believes to be fact but cannot be verified. For you to be able to carry out the study you should hold certain facts about the study as given. The assumptions should be clear and defensible.

(I) Definition of Terms (if not part of preliminaries)

Define all important terms in order to avoid any misinterpretations. These terms should be employed consistently throughout the report. Dictionary meanings do not serve adequately in defining terms of a research project.

(i) Scope (Delimitation) of the Study

This section specifies conceptual and practical (physical) boundaries of the study. It gives the researcher the opportunity to focus on the main concerns of the study at the same time clearly pointing out what it did not focus on.

(j) Limitations

The researcher should state those conditions beyond his/her control that inhibited his/her ability to conduct the research as planned, thus affecting his/her ability to interpret findings and make conclusions on the study. The researcher should also suggest compensatory factors that assisted in making the research valid and   reliable.

UNIT 5 RESEAERCH REPORT CHAPTER TWO

CHAPTER TWO – LITERATURE REVIEW (structure of the chapter)

2.1 Introduction

2.2 Definition of terms

2.3 Theoretical analysis

2.4 Theoretical framework

       2.4.1 Theory I

       2.4.2 Theory II

2.5 Empirical Literature Review

2.6 Conceptual framework

2.7 Conceptual Literature Review

2.8 Gap in Theory and Practice

2.9 Implications of to the research study

2.10 Summary of Chapter

(a) Purpose

This chapter discusses theoretical and empirical literature within the area of study in a comparative and argumentative form. The following thesaurus of the word review provide clues as to what a literature review means – analysis, perusal, discussion, study, judgement, writing, round up, criticism, theme Investigation, breakdown, recount, exploration and summary

In summary, the above words provide three aspects to what literature review means.

(1) *To review* means to peruse or provide a round up. This implies that a literature review should be:

    ➤ *Comprehensive*

    ➤ *Relevant*

(2) A literature review should involve critical study and investigation. This implies that it should be

➤ An accurate *account* of each separate piece of literature, noting its good and bad features, and particularly its relevance to the research concerns that have been identified

➤ *Compare and contrast* the different books and articles both with each other and with your own perspectives on your topic of investigation

➤ Involve *judgments* of literature, mainly in terms of your own concerns and needs

(3) A literature review should aim to be a *comprehensive summary* of the relevant literature. This implies that it should:-

- Be *focused*

- Be inclined to pithiness

- Provide *a roundup* of literature with some connection to your own research

- Clearly identify any literature that may have been relevant but could not be obtained during the completion of the research process.

(b) The purposes of literature review are:

❖ To sharpen and deepen the theoretical framework of the research.

❖ To familiarize the researcher with the lasted developments in the area of research. The researcher must be acquainted with the problems, hypotheses and results obtained by previous research in order not to duplicate efforts but to widen and deepen them and to use research as a starting point for new research.

❖ To identify gaps in knowledge, as well as weaknesses in previous studies. To determine what has already been done and what is yet to be studied or improved.

❖ To discover connections, analogies (similarities) or other relations between different research results by comparing various investigations and to highlight points of divergence or convergence among the different authors.

❖ To identify variables that must be considered in the research, as well as those that prove irrelevant. This finding is often a result of the comparison of different investigations.

❖ To study the definitions (conceptual [theoretical} and operational), as well as the characteristics of the population/samples if applicable, used in previous work with the aim of adopting them for the new research.

❖ To study the advantages and disadvantages of the research methods used by other researchers. The researcher can copy or improve the method.

❖ To find a link between your study and the accumulated knowledge in your field of interest.

❖ Helps you to limit your problem or research questions and to clarify and define concepts of the study

❖ Provides insights into useful methodologies

❖ Helps avoid unintentional replication of previous studies.

❖ Puts the researcher in a better position to interpret the significance of his/her results.

(c) *Warning*

o The researcher may be influenced by the results of previous research.

o The researcher may accept without criticism the characteristics and explanations and fail to remain objective and to discover new possibilities.

o The researcher may develop the tendency to work within an already established framework, instead of exploring new approaches.

(d) Sources of Literature

- Summaries of theses and dissertations
- Indexes of research journals
- Bibliographies
- Dictionaries
- Encyclopedia
- Internet
- Primary documents, e.g. circulars, reports

(e) General Hints

- Always begin with the most recent publication, working back to earlier publications
- The sub-topics should be well-structured and show logical sequence of ideas
- Always refer to the original source to avoid errors of interpretation or transcription
- The literature review should address relevant methodological issues. Highlight the weaknesses of the design and show how your study would avoid similar problems.

- Pay attention to correct methods of referencing. Avoid academic dishonesty and cheating by continuously acknowledging authors.

- Paraphrase information and be precise. Use your own words to explain what the author is saying.

- Use short directional quotations where necessary. Avoid long quotations unless otherwise

- To be relevant, literature review must focus on:

    - The theory from which the research topic is derived

    - Stated problem, hypotheses and/or research questions

    - Identifying the gap in research to be filled by the study

    - Avoid outdated literature

    - At the end of the literature review you need to highlight in brief how your study

UNIT 6 RESEARCH REPORT CHAPTER THREE

CHAPTER 3 – RESEARCH METHODOLOGY (Structure of the chapter)

3.1 Introduction

3.2 Research Philosophy

3.3 Research Design

3.4 Research Strategy, Type a,d Approach

3.5 Population

3.6 Sampling frame

3.7 Sample size

3.8 Sampling size

3.9 Types of Data – primary and secondary

3.10 Data Collection Methods – direct and indirect methods

3.11 Data Collection Instruments

- Questionnaires
- Interviews
- Observations
- Experiments

3.12 Instrument Design and piloting

3.13 Reliability and Validity

3.14 Ethical Procedures

- Avoidance of harm
- Informed consent
- Confidentiality
- Capturing of names
- Procedures if report is to be published
- Anti-plagiarism (maximum 15%)

3.15 Data Presentation and Analysis

- Qualitative data analysis
- Quantitative data analysis

3.16 Chapter Summary

(a) Research methodology

Research methodology describes how the study was carried out. It focuses on methods/techniques used in conducting the research, the logic behind the methods employed, and justifications for each of the approaches/techniques. The review of related literature should have assisted in deciding on the suitable methodology for the study. The chapter is concerned with research design, research instruments, data collection procedures, data presentation and analyses plans.

(b) Research Paradigm/philosophy

A perspective based on a set of assumptions, concepts, and values that are held by a community or researchers. A theoretical model within which the research is being conducted, and organizes the researcher's view of reality. There are 3 research paradigms:

Quantitative research – relies primarily of collection of quantitative data, focuses on measuring, can be positivism or empiricism.

Qualitative research – relies on collection of qualitative data and focuses on issues.

Mixed research – involves mixing quantitative and qualitative methods or paradigm characteristics.

(c) Research Design (Plan)

The design constitutes the blueprint for the collection, measurement, and analyses of data, it is the plan and structure of investigation so conceived as to obtain answers to the research questions.

The researcher should justify the chosen paradigm and method by providing the advantages and disadvantages.

(d) Population and Sampling Procedures

The target population and sample used in the study should be described. The sampling techniques used should be clearly defined.

A *population* is the total collection of elements about which we wish to make inferences. A *census* is a count of all elements in the population. It is feasible when the population is small and necessary when the elements are quite different from each other. The basic idea of *sampling* is that by selecting some of the elements in a population we may draw conclusions about the entire population.

(e) Data collection methods

Many of these data collecting methods have alternative forms. Observations, for instance, may be participant or non-participant, while interviews may be structured, semi-structured or unstructured. Despite this variety there are some basic principles which apply to all data collecting methods. The identified research instruments should be appropriate for the study and should be clearly described so as to bring out their strengths and weaknesses as a way of justifying their selection and suitability to the research. Measures taken to control the weaknesses identified should be spelt out so as to ensure the validity and reliability of these instruments and the data to be collected. The chosen instruments should reflect variables in the problems.

(f) Basic Principles of Data Collection

(1) Any method must produce data that is relevant to the research question(s), and able to provide answers or illumination on the topic.

(2) The technique must be convenient and relatively easy to use in the circumstances; for the researcher has to be sure that the expenditure of time (and resources) is warranted by the project.

(3) Most importantly, issues of *validity* and *reliability* of the research techniques used should be observed. The person undertaking the research needs to be sure that the data collecting instrument is both valid and reliable.

(g) Validity

If the research technique is valid it is "sound, cogent, well grounded, justifiable, or logically correct" (Schwandt, 1997). In simple terms, validity ensures that data sets collected or items used are pertinent or relevant to the research. There are different types of validity. Miller and Wilson (1983) list the following forms of internal validity:

- Face

- Concurrent

- Content

- Predictive

- Criterion related

- Construct

- Convergent

- Discriminant

- In the main, validity can be:

- *Internal* or *face validity* (the techniques directly relate to the intended outcomes and concerns of the research)

- C*oncurrent validity* (the data collected is valid for the much wider population from which that sample is drawn)

- *Predictive validity* (provides data that is useful for making predictions about the future behaviour of the research subjects in a causal or co relational manner).

In validity the main concern should be to reduce the amount of interference by non-relevant or non-valid aspects, such as language used. In research techniques such as interviews and questionnaires the language should not be overly complex and arcane, or hinder understanding and answering (responses).

(h) Ways of ensuring validity are:

- Carrying out an initial investigation (a pilot study) using intended data collecting instrument to check authenticity and relevance of the data produced.

- A panel of experts can be used to assess that the planned instrument really does measure what it is supposed to be measuring.

- Where a valid test or instrument already exists, it is open to the researcher to use the existing instrument. It is not necessary to reinvent the wheel all the time!

- Factor analysis can be employed to check validity (Oppenheim, 1992 and Kline, 1994)

- The researcher can use a convenient approach known collectively as *triangulation*. Here the researcher repeats the (pilot) study using alternative:

- Data collecting techniques

- Investigators

- Methodologies

- Units of analysis

- Theoretical perspectives.

(i) Reliability

Miller and Wilson (1983) define reliability as - *"The extent to which a test would give consistent results if applied more than once to the same people under standard conditions".*

(j) Methods of checking or assessing reliability are:

- Using the ***"Test-retest" method*** - This involves using an instrument (eg interview schedule) with a group on two separate occasions and analyzing how closely the two sets of results conform to each other (provided the two occasions are not separated by an excessive time-scale). A significant correlation should be observed between the two sets of results, with minor differences as respondents are likely to change.

- Split the results of a test or questionnaire into two halves and then measure how well the one correlates with the other. There are computer packages that carry out this procedure, such as SPSS, which as Cronbach's Alpha which works on the above principle.

Problems may still arise, however, for a test can be reliable but not valid. It is possible that a test may measure something other than what it is believed the test is measuring, in which case it is reliable but not valid because it would not be measuring what the researcher supposed it to be measuring.

(k) Ease of Use

It is important that the data collecting instruments are easy to administer. One can have an instrument that is valid and reliable but, if a single researcher is unable to use it because of its complexity, the results yielded may still be suspect. Examples are structure observation schedules which involve complex activities and interactions.

(l)   Questionnaires and Interview

Two of the most commonly use data collecting techniques are questionnaires and interviews. Some of the advantages and disadvantages that may help a researcher decide which method is more appropriate in a given instance are as follows:

Questionnaires	*Interviews*
Useful for simple topics	Useful for more complex topics
Possible to have large numbers of respondents	Time consuming
Anonymous	Not suitable for embarrassing issues
Often poor response rate	Usually good response rate
Emphasis on writing ability	Less emphasis on writing ability.

(m) Sampling strategies

Probability	Non-probability
Representation Basis	Representation Basis
Element Selection - Probability	Element Selection – Non probability
Unrestricted Simple random	Unrestricted - Convenience
Restricted Complex random	Restricted - Purposive
Systematic	Judgment
Cluster	Quota
Stratified	Snowball
Double (Sequential, Multiphase)	

(n) The probability sampling techniques

Non-Probability Sampling consists of convenience, purposive and snowball techniques.

i.   *Convenience Sampling* is a low-cost but less reliable non-probability sampling technique where element selection is unrestricted or left to those elements easily accessible by the researcher. It is often used to test ideas or even gain ideas about a subject of interest and can be used in the early stages of exploratory when you are seeking guidance.

ii.   *Purposive Sampling* consists of judgment sampling and quota sampling.

iii. *Judgment sampling* occurs when a researcher arbitrarily selects sample members/elements to conform to some criterion. It is appropriate in early stages of an exploratory study and when one wishes to select a biased group for screening purposes.

iv. With *quota sampling* relevant characteristics are used to stratify the sample in an attempt to improve the representativeness of the sample. Although there is some danger of systematic bias, quota sampling can be satisfactory in cases where predictive validity has been checked (e.g. election polls).

v. *Snowball sampling* is a non probability sampling procedure in which initial sample elements, which may or may not have been chosen by probability techniques, refer to additional sample elements based on similar characteristics. In the initial stage individuals are discovered and may or may not be selected through probability methods. This group is then used to locate others who possess similar characteristics and who, in turn, identify others. This design is useful in applications where respondents are difficult to identify and are best located through referral.

(o) Important Points Regarding Samples and Sampling

❖ A good sample has both accuracy and precision. An accurate sample is one in which there is little or no bias or systematic variance. A sample with adequate precision is one that has a sampling error that is within acceptable limits for the study's purpose.

❖ The specifications of the researcher and the nature of the population determine the size of a population sample.

❖ The greater the dispersion or variance within the population, the larger the sample must be to provide estimation precision.

❖ The greater the desired precision of estimate, the larger the sample must be

❖ The narrower the interval range, the larger the sample must be.

❖ The higher the confidence levels in the estimate, the larger the sample must be.

❖ The greater the number of subgroups of interest within a sample, the greater the sample size must be, as each subgroup must meet minimum sample size requirements.

❖ If the calculated sample size exceeds 5 percent of the population; sample size may be reduced without   sacrificing   precision.

UNIT 7 RESEARCH REPORT CHAPTER FOUR

CHAPTER 4 – PRESENTATION, ANALYSIS, INETERPRETATION AND DISCUSSION OF RESULTS

4.1 Introduction

4.2 Response rate

4.3 Demographic analysis

4.4 Each feedback from the questionnaire to be separately presented, analysed, interpreted and discussed.

4.5 Presentation of the major findings

4.6 Hypothesis testing

4.7 Summary of findings

4.8 Summary of Chapter

(a) Data Presentation and Analysis

Before the data is presented it goes through the following process

❖ **Data preparation**, which includes *editing, coding* and *data entry*

These activities ensure the accuracy of the data and their conversion from raw form to reduced and classified forms that are more appropriate for analysis.

❖ **Preparing a descriptive statistical summary** leading to an understanding of the collected data

❖ **Summarize the data using tables, graphs, figures, etc**. Always choose the form that provides a clear presentation of your data. Always refer to the table or figure that you are discussing and do not leave a table or figure "hanging". Tables and figures should be numbered and labeled.

❖ *Editing,* the first step in data analysis, detects errors and omissions, corrects them when possible, and certifies that minimum data quality standards are achieved. The editor's purpose is to guarantee that data are:

- Accurate

- Consistent with intent of the question and other information in the survey

- Uniformly entered

- Complete

- Arranged to simplify coding and tabulation

❖ *Coding* involves assigning numbers or other symbols to answers so the responses can be grouped into a limited number of classes or categories. Coding can be *alphanumeric* (when numbers are combined with symbols) or *numeric* (when numbers are used exclusively). Coding helps the researcher to reduce several thousand replies to a few categories containing the critical information needed for analysis.

❖ *Data entry* converts information gathered by secondary or primary methods to a medium for viewing and manipulation. *Keyboarding* remains a mainstay for researchers who need to create a data file immediately and store it in a minimal space on a variety of media. Other programs available are *optical scanning* instruments, *voice recognition* and response systems or the *bar code.* A full-screen editor, where an entire data file can be edited or browsed, is a viable means of data entry for statistical packages like *SPSS,* or *SAS.* The same software makes accessing data from databases, spreadsheets, data warehouses, or data marts effortless. For large projects, *database* programs serve as valuable entry devices. For data that need organizing, tabulating, and simple statistics, spreadsheets provide an easy-to-learn mechanism.

(b) *Descriptive Statistical Summaries* provide ways of describing the data. The tools used to clean the data and summarize distributions include: m*easures of location or central tendency* (mean, median, and mode), *measures of spread or dispersion* (variance, standard deviation, range, inter quartile range, and quartile deviation), and *measures of shape* (skewness or kurtosis). The discovery of miscoded values, missing data, and other problems in the dataset are enhanced with descriptive statistics.

(c) *Techniques used for displaying data* include: frequency tables, bar charts, pie charts; histograms; stem-and-leaf displays; and box plots. Process control systems make use of control

charts. The evaluation of relationships involving categorical variables employs *cross-tabulation* and this can be made more efficient with the use of computer packages such as Minitab, SAS, and SPSS.

(d) Simple Quantitative Data Analysis

There a number of statistical data analysis techniques with which researchers ought to be familiar. There are two ways that researchers can draw conclusions from quantitative data.

➢ Data may be used to describe the situation using *descriptive* statistics.

➢ The researcher may wish to infer something about the much wider population from which that sample was drawn. In this case one would require the help of *inferential* statistics.

(e) Discussion of Results (or Findings)

This is where you interpret the meaning of the research results. Tie your results to literature review, showing the points of similarity and departures with theory and previous research findings on the topic. Where there are deviations give reasons for such deviations and suggest the modifications that are needed, and if possible, suggest a new theoretical framework. If the study was set up to test hypotheses, the outcome of each hypothesis should be reported. The statistical test used must also be appropriate.

- Ensure that all the results of the sub-problems/sub-questions and/or hypotheses are discussed.
- Practical implications of your results should always be stated.
- In terms of language and expression, be definite about the data and statistics, but be tentative about interpretations and conclusions.
- The chapter summary should highlight the main findings of the study, and prepare the reader for the next chapter.

(f) Hypothesis Testing

The purpose of hypothesis testing is to determine the accuracy of your hypotheses due to the fact that you have collected a sample of data, not a census. Two kinds of hypothesis are used in classical tests: the *null hypothesis* and the *alternative hypothesis.* The null hypothesis is used for testing. It is a statement that no difference exists between the parameter and the statistic being compared to it. If we reject a null hypothesis, then we are accepting the alternative hypothesis.

Hypothesis testing can be viewed as a six-step procedure:

- State the null hypothesis.
- Choose the statistical test.
- Select the desired level of significance.
- Compute the calculated difference value.
- Obtain the critical value.
- Interpret the test.

There are two general classes of significance tests: *Parametric* or *nonparametric.* Parametric tests are more powerful because their data are derived from interval and ratio measurements. Nonparametric tests are used to test hypothesis with nominal and ordinal data.

UNIT 8 RESEARCH REPORT CHAPTER FIVE

CHAPTER 5 – SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

5.2 Summary of the Research study

5.3 Summary of the findings of the research

5.4 Conclusions

5.5 Recommendations

5.6 Suggestion for further research study

5.7 Summary Chapter

(a) Summary

This gives a brief summary of the research problem, methodology, and implications of findings in terms of research objectives. Revisit your original objectives that you set out to achieve in chapter one and show how these have been achieved.

(b) Conclusions

These are summed up answers to the sub-problems/research questions and are drawn directly from data reported in chapter 4. Conclusions should be based on the findings. It is important to note that: while findings state facts; conclusions represent inferences drawn from the findings. There is also need to indicate whether hypotheses are accepted or rejected. Whether or not your conclusions agree with the theory or previous researches, you have to report them as they are. Do not "doctor" your findings to suit your preconceived ideas.

(c) Recommendations

In the light of the conclusions drawn by the study, the researcher should clearly state recommendations on actions that should be taken to solve problems identified. In addition, suggestions for future research on the study should be made. Finally, the chapter summary should tie the whole study together into a neat and comprehensive package.

UNIT 9 REFERENCING STYLES

REFERENCES BOTH IN-TEXT AND FULL CITATION

(a) Referring to others in the text

In the Harvard system which is recommended for CICM at every point in the text at which reference is made to other writers the name of the writer and the year of publication should be included. If the surname of the author is part of the sentence, then the year of publication will appear in brackets, e.g.: Chirisa (2008) describes this….

If the name of the author is not part of the sentence then both the surname and the year of publication are in brackets, e.g. In a recent study (Chirisa, 2008) it is described as……

If there are two authors then both family names should be given, e.g. Chirisa and Moyo (2008) suggest that….

If there are three of more authors the first author's family name should be given, followed by *et al.*, e.g. Chirisa *et al* (2008) suggest that…..

If the same author has published two or more works in the same year then each work should be referred to individually by the year followed by lower case letters (a, b, c, etc). (These different references should be included in the bibliography). For example: Chirisa (2008a) shows how….

When you need to refer to two or more different parts of a work or are quoting directly you should include the page numbers after the year of publication - Chirisa (2008, p112) gives a model to explain…..

(b) Presentation of the Bibliography/References

The bibliography comes at the end of your project report or dissertation. The citations are listed as either bibliography or references, which are then arranged alphabetically by authors' names and then, where necessary, by date. Single-author books and articles appear before co-authored articles and books by the

same author, with the earliest dated first. Where there is more than one reference for one author in any one year, the order is alphabetical by title, and lower case letters added to denote more than one publication in that year. The presentation should be:

Author's family name, comma, initials of first name(s), year of publication in brackets, title of the book in upper and lower case in italics, comma, edition (if applicable followed by comma), publisher, comma, place of publication, full stop. e.g. Wegner, T (1999) *Applied Business Statistics* (1999), Juta & Co, Ltd,, Cape Town

Books and articles by more than two authors should be given in the order presented by the authors themselves, linked by the work "and" for the last name. e.g. Campbell, J Y, Lo, A W and MacKinlay, A C (1997) *The Econometrics of Financial Markets,* Princeton University Press, Princeton, New Jersey.

(c) Citing Articles in Journals

The author's family name, comma, initials of the first name(s), comma, year of publication in brackets, title of contribution in upper and lower case and in quotation marks, comma, title of the periodical or journal in italics, comma, volume number in bold type, issue number, comma, the page numbers of the article prefaced by pp, full stop.

Clare, A D and Thomas, S H (1995) "The Overreaction Hypothesis and the UK Stock Market", Journal of Business Finance and Accounting, **22** 7, pp961-73

(d) Citing Contributions in Books

Where books are made up of contributions from a variety of authors, cite the author's surname, comma, initials of first name(s), comma, year of publication in brackets, then the title of the contribution in upper and lower case and in quotation marks, comma, followed by "in", the editor's surname followed by a comma, the initials then (ed), the title of the book in upper and lower case underlined or in italics, comma, publisher, comma, place of publication, comma, page numbers, full-stop.

Chirisa, W (2005) "Short-Run forecasting of Stock Prices", in Jones, P A (ed) *Investment Management,* NUST Press, Bulawayo, pp47-63

(e) Government Publications

Name of the responsible department, year of publication in brackets, title of the publication, in upper and lower case underlined or in italics, comma, publisher, comma, place of publication. If there are official series codes these should be cited after the title, and if there is a chairperson then this name should be included at the end. E.g.Theses

Author's surname, comma, initial(s), year of award in brackets, title in upper andlower case underlined or in italics, comma, degree awarded followed by Thesis, comma and the name of the awarding institution, e.g.

James, P J (2004) *Approaches to Active Portfolio Management, with Reference to Zimbambwe,* PhD thesis, National University of Science and Technology.

(f) Mimeographed Materials

Mimeographs refer to duplicated materials, such as papers presented to conferences but not formally published. Cite the name of the author(s) and initials, the date, the title of the paper, the circumstances under which the paper was presented, and the fact that it was mimeoed (duplicated). The title of the paper is in quotation marks and has initial capitals, e.g. Johnson V G (2003), "The Effects of Relaxing Trade Barriers on the Zimbabwean Economy", paper presented to the 2003 Annual Conference of the World Customs Organisation, mimeo.

Appendix I : ASSESSMENT OF RESEARCH REPORTS
Name of Student: ……………………………………………Programme……………………………………………

AREA		POSSIBLE MARKS	ACTUAL MARKS	COMMENTS/JUSTIFICATION
CHAPTER I	**INTRODUCTION AND BACKGROUND**	**10**		
	Introduction/title suitability			
	Background			
	Problem statement			
	Research objectives			
	Research hypothesis			
CHAPTER 2	**LITERATURE REVIEW**	**20**		
	Relevance of theory			
	Theoretical analysis			
	Empirical literature analysis			
	Conceptual frameworks			
	Gap in literature			
	Technical Knowledge			
CHAPTER 3	**RESEARCH METHODOLOGY**	20		
	Research design			
	Population			
	Sampling Procedures			
	Instrument Design			
	Validity and Reliability			
CHAPTER 4	**PAID**	**30**		
	Response rate			
	Demographics			
	Presentation of findings			
	Analysis of findings			
	Interpretation of findings			
	Discussion of findings			
CHAPTER 5	**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**	10		
	Summary of findings			
	Conclusions			
	Recommendations			
GENERAL	**ORGANISATION/ LAYOUT**	**10**		
	Table of contents			
	Sequencing/clarity			
	Paragraphing			
	Headings/subheadings			
	Original work			
	Examples			
Final	**Total Marks**	**100**	_____%	**Grade:**

Grading Criteria: 75 – 100% Distinction (D), 70 – 80% Merit (M), 60 – 70% credit (C) , 50 – 60% Pass (P) and 0 – 49% Fail (F)

Recommendation

Research Supervisor…………………………………………Date Signature……………………………………………………

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