Session 2023/2024

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

UNDERGRADUATE PROJECT 1

SBEU 4942

Chapter 1 - Introduction

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Innovating Solutions

UTM ALUMNI

CONTENTS

WHAT IS RESEARCH?

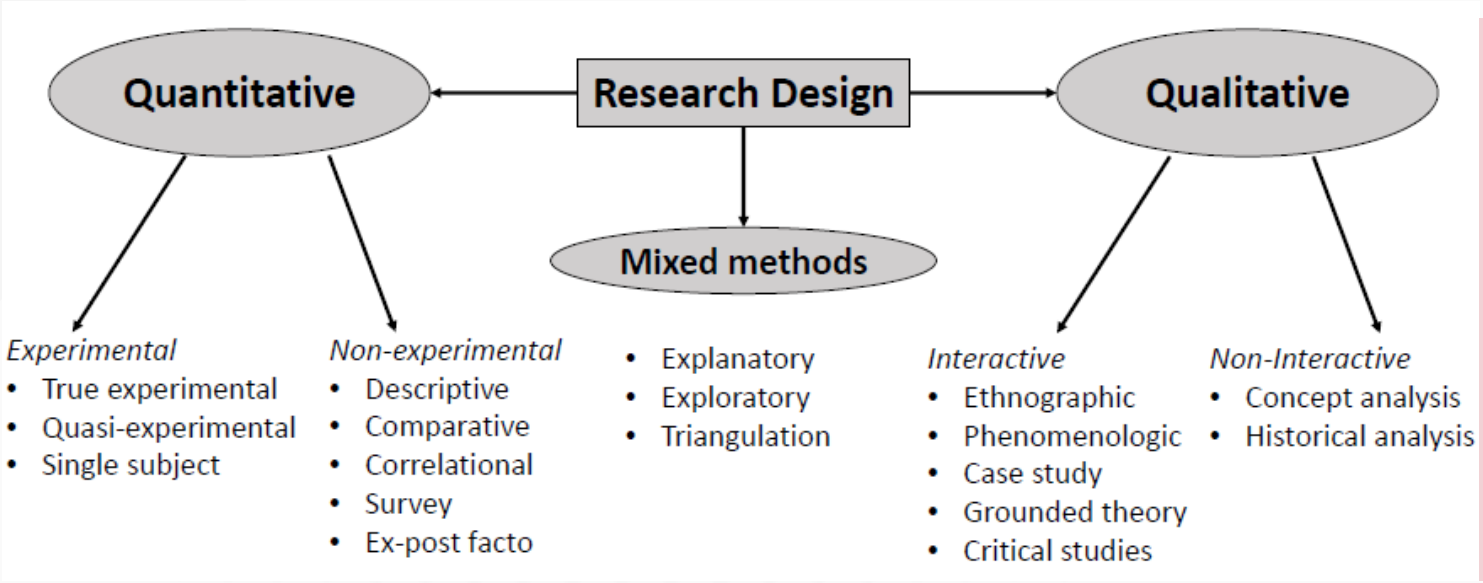
- Research is a process of systematic inquiry that entails **collection of data**; d**ocumentation** of **critical information**; and **analysis** and **interpretation** of that data/information, in accordance with suitable **methodologies** set by specific professional fields and academic disciplines.

WHY DO WE NEED TO DO RESEARCH?

- Research is conducted to:
  - Evaluate the validity of a hypothesis or an interpretive framework.
  - To **assemble a body of substantive knowledge** and **findings** for sharing them in appropriate manners.
  - To help **generate questions** for further **inquiries**.

RESEARCH METHODS

- Research methods are **processes used to collect data**. You can use this data to analyze current methods or procedures and to find additional information on a topic.



Observations: recording what you have seen, heard, or encountered in detailed field notes.

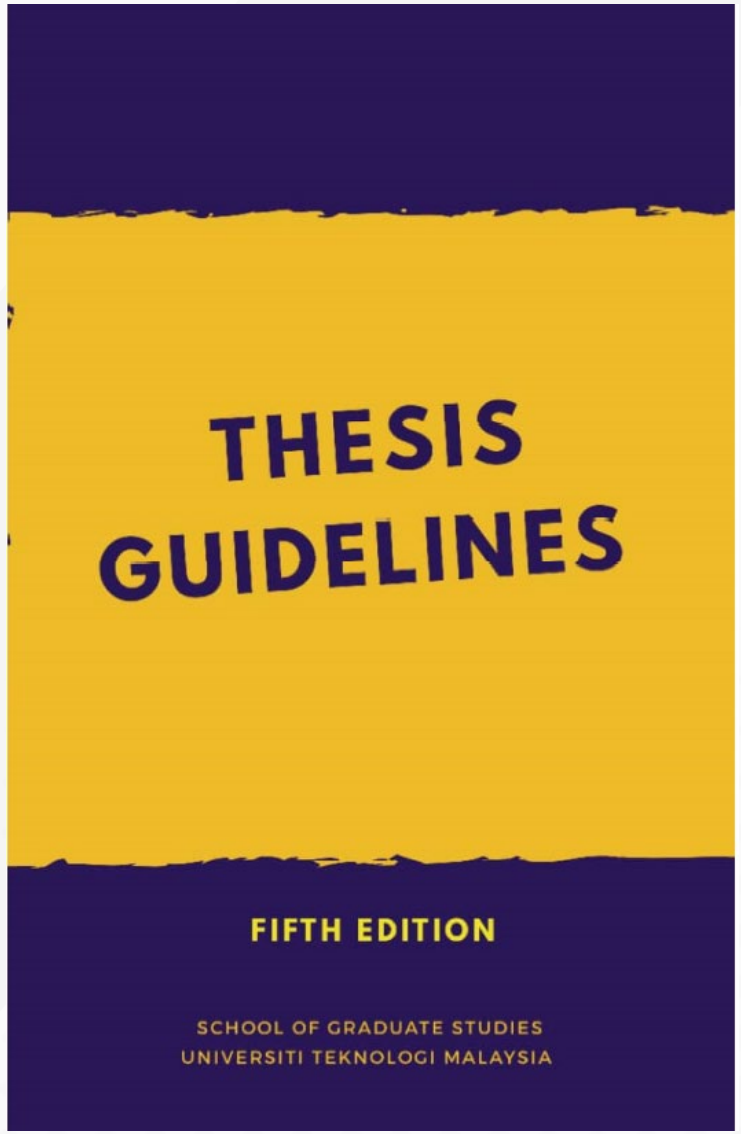
Interviews: personally asking people questions in one-on-one conversations.

Focus groups: asking questions and generating discussion among a group of people

Quantitative research methods involve using numbers to measure data. Researchers can use statistical analysis to find connections and meaning in the data.

Qualitative research methods involve exploring information and non-numerical data. These methods also examine how people might connect meaning to their experiences and emotions.

UTM THESIS TEMPLATE



- Thesis in this manual refers to a scientific documented report of original research conducted by a student in an ethical and professional manner for fulfilment of the requirement for a postgraduate degree.
- The thesis should be presented in a manner that will reflect credit on the student, the faculty, and the University.

Download the UTM Thesis Manual Guideline:

https://sps.utm.my/wp-content/uploads/2020/05/Thesis-manual-26.5.2020_full.pdf

UTM THESIS FORMAT *(Preliminary Pages)*

Subject	Status
Front Cover Page	Compulsory
Blank Page	Compulsory
Declaration of Thesis	Compulsory
Letter regarding status classification of thesis	Compulsory
Supervisor's declaration	Compulsory
Declaration on Cooperation	Compulsory
Certification of Examination	Compulsory
Title Page	Compulsory
Author's Declaration Page	Compulsory
Dedication	Optional
Acknowledgment	Optional
Abstract	Compulsory
Abstrak	Compulsory

Subject	Status
Table of Contents	Compulsory
List of Tables	Compulsory
List of Figures	Compulsory
List of Abbreviation / Acronyms	Compulsory
List of Symbols	Compulsory
List of Appendices	Compulsory

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UTM THESIS FORMAT *(Main Body)*

Subject	Status
Chapter 1: Introduction	Compulsory
Chapter 2: Literature Review	Compulsory
Chapter 3: Methodology	Compulsory
Chapter 4: Results	Compulsory
Chapter 5: Discussion	Compulsory
Chapter 6: Conclusion	Compulsory
Note: Depending on the needs, some thesis might combine Chapter 5 & 6	

Preferable:

Chapter 1 – Introduction
Chapter 2 – Literature Review
Chapter 3 – Methodology
Chapter 4 – Results and Discussion
Chapter 5 - Conclusion

UTM THESIS FORMAT *(Supplementary)*

Subject	Status
Appendices	Optional
List of Publications and Papers Presented	Optional

The maximum number of pages for a project report/dissertation/thesis is as follows:

Bachelor Degree Project Report : 100 pages
Master's Report/Dissertation/Thesis : 200 Pages
Doctorate Thesis : 300 Pages

These limits include tables, figures and other illustrations in the text but do not include Appendices. Maximum number of pages for appendices is 50 pages.

ABSTRACT

- A short summary of the thesis/scientific paper or materials. The abstract should include the followings:

  - A brief theme sentence to orientate the reader on the overall issue
  - Aim or purpose of the research
  - The importance of the study should be explained
  - Briefly describe the methodology used in the study
  - Summarize the main findings of the study
  - Conclusion indicate the contribution made by the study

Additional Rules:

- Abstract must be bilingual.
- The abstract should be written in one paragraph and not exceed one (1) page.
- The abstract can be written using single or 1.5 spacing.

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ABSTRACT – (Brief theme)

Abstract. Tidal datums are important for calculating spatial coordinates especially the elevation relative to mean sea level and also crucial for defining the state sovereignty boundaries over maritime areas. Normally, sea level was measured by tide gauges along the coastal for tidal datums computation. However, knowledge of tides is still restricted in coastal areas. Furthermore, tidal range at offshore was simply assumed to be similar as coastal due to the difficulties installing offshore tide gauges. The launching of satellite altimeter technologies with precise orbit determination since 1993 had provided significant accuracy of sea surface height (SSH) measurements. The observed SSH from satellite altimetry can be offered as tide gauge measurements at each location globally. This study aims to derive offshore tidal datums using satellite altimetry around Malaysian seas. SSH time series from TOPEX, Jason-1, Jason-2 and Geosat Follow On (GFO) were analysed using harmonic analysis approach to estimate harmonic constants. A minimum of 19 years tidal predictions were then performed using UTide software to determine Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT). These tidal datums were interpolated into regular 0.125° grids and were assessed with ten selected coastal tide gauges. The findings showed the Root Mean Square Error (RMSE) of spline interpolation yielded better accuracy, 25.5 cm (LAT_{MSL}) and 17.4 cm (HAT_{MSL}) as compared to the RMSE of Kriging interpolation, 31.8 cm (LAT_{MSL}) and 33.8 cm (HAT_{MSL}). In conclusion, deriving offshore tidal datums can serve as input data to unify marine database with coastal areas and also can support many marine applications.

Notes: *This abstract is extracted from scientific paper. Please refer UTM Thesis manual for the correct format.*

ABSTRACT – (Problem Statement)

Abstract. Tidal datums are important for calculating spatial coordinates especially the elevation relative to mean sea level and also crucial for defining the state sovereignty boundaries over maritime areas. Normally, sea level was measured by tide gauges along the coastal for tidal datums computation. However, knowledge of tides is still restricted in coastal areas. Furthermore, tidal range at offshore was simply assumed to be similar as coastal due to the difficulties installing offshore tide gauges. The launching of satellite altimeter technologies with precise orbit determination since 1993 had provided significant accuracy of sea surface height (SSH) measurements. The observed SSH from satellite altimetry can be offered as tide gauge measurements at each location globally. This study aims to derive offshore tidal datums using satellite altimetry around Malaysian seas. SSH time series from TOPEX, Jason-1, Jason-2 and Geosat Follow On (GFO) were analysed using harmonic analysis approach to estimate harmonic constants. A minimum of 19 years tidal predictions were then performed using UTide software to determine Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT). These tidal datums were interpolated into regular 0.125° grids and were assessed with ten selected coastal tide gauges. The findings showed the Root Mean Square Error (RMSE) of spline interpolation yielded better accuracy, 25.5 cm (LAT_{MSL}) and 17.4 cm (HAT_{MSL}) as compared to the RMSE of Kriging interpolation, 31.8 cm (LAT_{MSL}) and 33.8 cm (HAT_{MSL}). In conclusion, deriving offshore tidal datums can serve as input data to unify marine database with coastal areas and also can support many marine applications.

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ABSTRACT – (Importance of the study)

Abstract. Tidal datums are important for calculating spatial coordinates especially the elevation relative to mean sea level and also crucial for defining the state sovereignty boundaries over maritime areas. Normally, sea level was measured by tide gauges along the coastal for tidal datums computation. However, knowledge of tides is still restricted in coastal areas. Furthermore, tidal range at offshore was simply assumed to be similar as coastal due to the difficulties installing offshore tide gauges. The launching of satellite altimeter technologies with precise orbit determination since 1993 had provided significant accuracy of sea surface height (SSH) measurements. The observed SSH from satellite altimetry can be offered as tide gauge measurements at each location globally. This study aims to derive offshore tidal datums using satellite altimetry around Malaysian seas. SSH time series from TOPEX, Jason-1, Jason-2 and Geosat Follow On (GFO) were analysed using harmonic analysis approach to estimate harmonic constants. A minimum of 19 years tidal predictions were then performed using UTide software to determine Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT). These tidal datums were interpolated into regular 0.125° grids and were assessed with ten selected coastal tide gauges. The findings showed the Root Mean Square Error (RMSE) of spline interpolation yielded better accuracy, 25.5 cm (LAT_{MSL}) and 17.4 cm (HAT_{MSL}) as compared to the RMSE of Kriging interpolation, 31.8 cm (LAT_{MSL}) and 33.8 cm (HAT_{MSL}). In conclusion, deriving offshore tidal datums can serve as input data to unify marine database with coastal areas and also can support many marine applications.

Notes: *This abstract is extracted from scientific paper. Please refer UTM Thesis manual for the correct format.*

ABSTRACT – (Purpose / Objective)

Abstract. Tidal datums are important for calculating spatial coordinates especially the elevation relative to mean sea level and also crucial for defining the state sovereignty boundaries over maritime areas. Normally, sea level was measured by tide gauges along the coastal for tidal datums computation. However, knowledge of tides is still restricted in coastal areas. Furthermore, tidal range at offshore was simply assumed to be similar as coastal due to the difficulties installing offshore tide gauges. The launching of satellite altimeter technologies with precise orbit determination since 1993 had provided significant accuracy of sea surface height (SSH) measurements. The observed SSH from satellite altimetry can be offered as tide gauge measurements at each location globally. This study aims to derive offshore tidal datums using satellite altimetry around Malaysian seas. SSH time series from TOPEX, Jason-1, Jason-2 and Geosat Follow On (GFO) were analysed using harmonic analysis approach to estimate harmonic constants. A minimum of 19 years tidal predictions were then performed using UTide software to determine Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT). These tidal datums were interpolated into regular 0.125° grids and were assessed with ten selected coastal tide gauges. The findings showed the Root Mean Square Error (RMSE) of spline interpolation yielded better accuracy, 25.5 cm (LAT_{MSL}) and 17.4 cm (HAT_{MSL}) as compared to the RMSE of Kriging interpolation, 31.8 cm (LAT_{MSL}) and 33.8 cm (HAT_{MSL}). In conclusion, deriving offshore tidal datums can serve as input data to unify marine database with coastal areas and also can support many marine applications.

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ABSTRACT – (Method and Data)

Abstract. Tidal datums are important for calculating spatial coordinates especially the elevation relative to mean sea level and also crucial for defining the state sovereignty boundaries over maritime areas. Normally, sea level was measured by tide gauges along the coastal for tidal datums computation. However, knowledge of tides is still restricted in coastal areas. Furthermore, tidal range at offshore was simply assumed to be similar as coastal due to the difficulties installing offshore tide gauges. The launching of satellite altimeter technologies with precise orbit determination since 1993 had provided significant accuracy of sea surface height (SSH) measurements. The observed SSH from satellite altimetry can be offered as tide gauge measurements at each location globally. This study aims to derive offshore tidal datums using satellite altimetry around Malaysian seas. SSH time series from TOPEX, Jason-1, Jason-2 and Geosat Follow On (GFO) were analysed using harmonic analysis approach to estimate harmonic constants. A minimum of 19 years tidal predictions were then performed using UTide software to determine Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT). These tidal datums were interpolated into regular 0.125° grids and were assessed with ten selected coastal tide gauges. The findings showed the Root Mean Square Error (RMSE) of spline interpolation yielded better accuracy, 25.5 cm (LAT_{MSL}) and 17.4 cm (HAT_{MSL}) as compared to the RMSE of Kriging interpolation, 31.8 cm (LAT_{MSL}) and 33.8 cm (HAT_{MSL}). In conclusion, deriving offshore tidal datums can serve as input data to unify marine database with coastal areas and also can support many marine applications.

Notes: *This abstract is extracted from scientific paper. Please refer UTM Thesis manual for the correct format.*

ABSTRACT – (summary of main findings)

Abstract. Tidal datums are important for calculating spatial coordinates especially the elevation relative to mean sea level and also crucial for defining the state sovereignty boundaries over maritime areas. Normally, sea level was measured by tide gauges along the coastal for tidal datums computation. However, knowledge of tides is still restricted in coastal areas. Furthermore, tidal range at offshore was simply assumed to be similar as coastal due to the difficulties installing offshore tide gauges. The launching of satellite altimeter technologies with precise orbit determination since 1993 had provided significant accuracy of sea surface height (SSH) measurements. The observed SSH from satellite altimetry can be offered as tide gauge measurements at each location globally. This study aims to derive offshore tidal datums using satellite altimetry around Malaysian seas. SSH time series from TOPEX, Jason-1, Jason-2 and Geosat Follow On (GFO) were analysed using harmonic analysis approach to estimate harmonic constants. A minimum of 19 years tidal predictions were then performed using UTide software to determine Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT). These tidal datums were interpolated into regular 0.125° grids and were assessed with ten selected coastal tide gauges. The findings showed the Root Mean Square Error (RMSE) of spline interpolation yielded better accuracy, 25.5 cm (LAT_{MSL}) and 17.4 cm (HAT_{MSL}) as compared to the RMSE of Kriging interpolation, 31.8 cm (LAT_{MSL}) and 33.8 cm (HAT_{MSL}). In conclusion, deriving offshore tidal datums can serve as input data to unify marine database with coastal areas and also can support many marine applications.

Notes: *This abstract is extracted from scientific paper. Please refer UTM Thesis manual for the correct format.*

ABSTRACT – (Conclusion)

Abstract. Tidal datums are important for calculating spatial coordinates especially the elevation relative to mean sea level and also crucial for defining the state sovereignty boundaries over maritime areas. Normally, sea level was measured by tide gauges along the coastal for tidal datums computation. However, knowledge of tides is still restricted in coastal areas. Furthermore, tidal range at offshore was simply assumed to be similar as coastal due to the difficulties installing offshore tide gauges. The launching of satellite altimeter technologies with precise orbit determination since 1993 had provided significant accuracy of sea surface height (SSH) measurements. The observed SSH from satellite altimetry can be offered as tide gauge measurements at each location globally. This study aims to derive offshore tidal datums using satellite altimetry around Malaysian seas. SSH time series from TOPEX, Jason-1, Jason-2 and Geosat Follow On (GFO) were analysed using harmonic analysis approach to estimate harmonic constants. A minimum of 19 years tidal predictions were then performed using UTide software to determine Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT). These tidal datums were interpolated into regular 0.125° grids and were assessed with ten selected coastal tide gauges. The findings showed the Root Mean Square Error (RMSE) of spline interpolation yielded better accuracy, 25.5 cm (LAT_{MSL}) and 17.4 cm (HAT_{MSL}) as compared to the RMSE of Kriging interpolation, 31.8 cm (LAT_{MSL}) and 33.8 cm (HAT_{MSL}). In conclusion, deriving offshore tidal datums can serve as input data to unify marine database with coastal areas and also can support many marine applications.

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ABSTRACT – (PSM 22/23)

ABSTRACT

Sea Surface Temperature (SST) has been recognized as one of the major global climate variables and varies by time as well as location. To analyse and predict the trends accurately, high-density coverage of SST data is acquired to improve the limited coverage over in-situ data from weather buoy observation. Thus, this study aims to interpret and validate the accuracy of multi-mission satellite altimetry data of sea surface temperature over Malaysian seas. The satellite altimetry missions of ERS-1, TOPEX, ERS-2, GFO-1, JASON-1, ENVISAT, JASON-2, CRYOSAT-2, SARAL, JASON-3, and SENTINEL 3A will be used in this study where the data cover from 1993 to 2022. The altimetry data will be retrieved by using Radar Altimeter Database System (RADS) then processed with MATLAB software to interpret its model pattern over the period of 29 years. In this study, the data will be interpolated and visualized its trend as a SST model to study its interaction with the weather system, climatic phenomenon and changes such as El Nino-Southern Oscillation (ENSO) as well as sea level rise. The reliability of the SST model derived from multi-mission satellite altimetry will be assessed by comparing it with the in-situ data obtained from the Conductivity, Temperature, Depth (CTD) Sensors. It is expected that Root-Mean-Square-Error (RMSE) of sea surface temperature differences are below 1.00°C. In conclusion, sea surface temperature measured from the multi-mission satellite altimetry is suitable to be employed to predict Malaysia climate change as well as weather events based on the long term and near real-time along track observations.

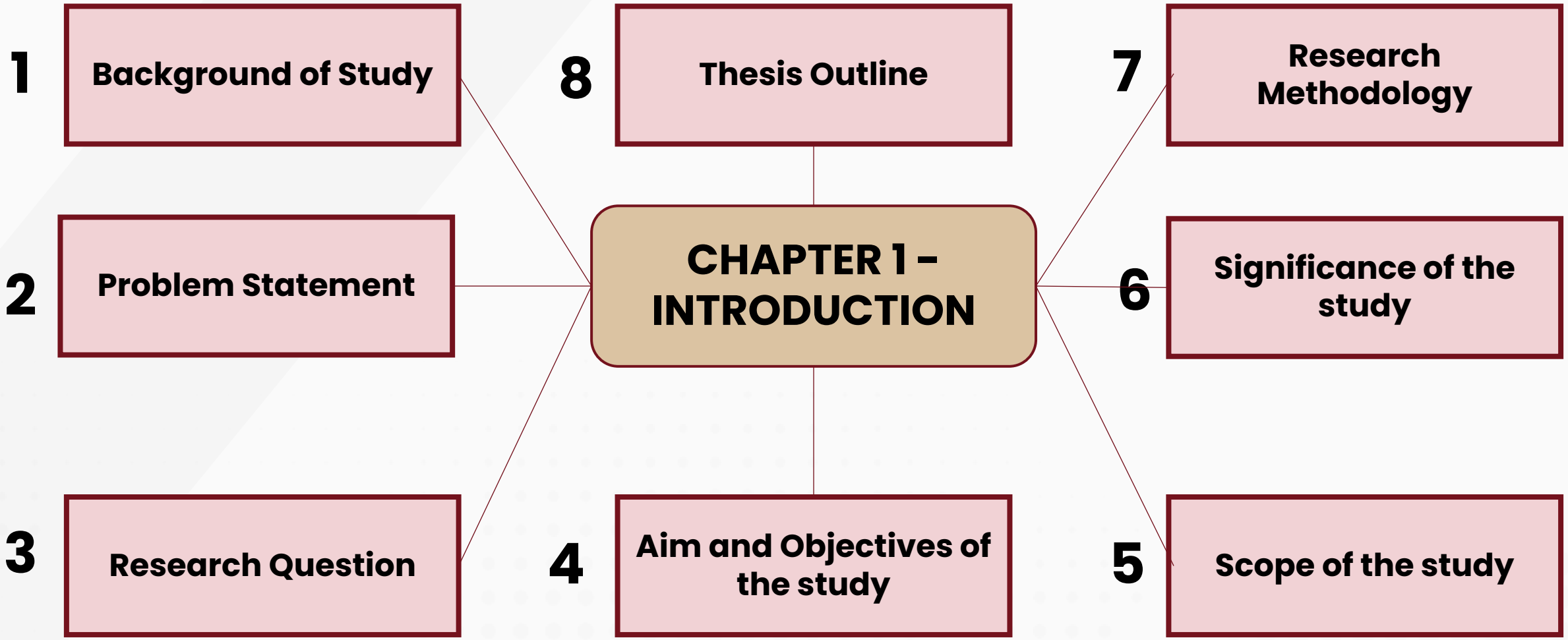
Pin (2023)

CHAPTER 1 – INTRODUCTION

- **Introductory chapter** is very important when writing a thesis. This chapter is critical as it is the **first thing that the examiner will read**, and it is therefore **important** to **make a good first impression**.

- A **good introduction chapter** should **incite the reader** to **read the rest of the thesis** by establishing the context of your topic, the motivation for undertaking your work and the importance of your research.

CHAPTER 1 – INTRODUCTION



Background of the Study

- The purpose is to help you **to prove the relevance** of your thesis **question** and to further develop your thesis.

- It should **cover all the critical aspects** that **lead to the formulation** of the **problem statement** and your **hypothesis** (if any).

- It includes **a review of the area** being researched, current information surrounding the issue, previous studies on the issue, and **relevant history** on the issue.

COMMON MISTAKES

- Background that is too long or too short.
- Do not be ambiguous
- Discuss unrelated themes
- Disorganize

1000-2000 words;
3-4 paragraphs;

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Problem Statement

- The purpose is **to identify the issue** that is **a concern** and focus it in a way that **allows it to be studied** in a **systematic way**.
- **Summarize the current issues** and where **a lack of knowledge** may be presenting a problem that needs to be investigated
- Defines the ***problems/concerns/issues*** – source(s) -> proposes a way to research a solution, or demonstrates why further information is needed.
- It is the best to write hypothesis after discussing the problem statement.

GOOD PROBLEM STATEMENT

- Be concise – the simpler your problem statement, the clearer the outcome

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PROBLEM STATEMENT

Thesis: 7-8

1. Vertical Component

- *DGNSS seldom meets the vertical component accuracy required in ERS hydrography (Ligteringen et al., 2014).*

Implement **GNSS carrier phased-based technique** for ERS hydrography

Research Question

- A research question is the question around which you center your research.
- Be *clear*, *focused*, *concise*, *complex* and *arguable*.
- It helps writer focus their research by providing a path through the research and writing process.

Example...

1.3 Research Question

In fulfilling the aim of this research, the following specific questions will be answered as follow:

i. How to retrieve the groundwater storage in Peninsular Malaysia from GRACE data (level 3)?.
ii. What are the similarity of the groundwater storage derived from GRACE with the tube well and rainfall data?.
iii. How can the variation of weather and seasonal influence the change of the groundwater storage in Peninsular Malaysia?.

Aim and Objectives

- ***Research Aim*** - a broad statement indicating the general purpose of your research project.
- ***Research Objectives*** - specific statements that define measurable outcomes
- Each objectives normally related to the research questions.

Example...

1.4 Research Aim and Objectives

This research study aims to evaluate groundwater storage changes in Peninsular Malaysia using satellite Gravity Recovery and Climate Experiment (GRACE) data. To achieve the aim of the research, the following objectives need to be fulfilled:

i. To derive the groundwater storage using satellite GRACE from the year 2002 until 2017.
ii. To correlate the groundwater storage derived from GRACE data with the tube well and rainfall data.
iii. To analyse groundwater storage pattern, magnitude, and rate in Peninsular Malaysia

Scopes of the Study

- It refers to the boundaries within which your research project will be performed.

- **It explains the in which the research area will be explored in the work and specifies the parameters to be used within the study**. Basically, this means that you will have to define what the study is going to cover and what it is focusing on.

- Be clear on the **research parameters** that you will and won't consider.

Information of Research Scopes

- Study area
- Data to be used
- Software / Hardware
- Data Interpretation and Analysis

Significance of the Study

- It presents **the importance of your research**
- To prove the **study's impact on your field**. The new knowledge contribute, and the readers or **people will benefit** from it.
- It is important to explain to your readers **how exactly your research will be contributing** to the literature of the field you are studying.

General Research Methodology

- It **describes the general** or **overall workflow of the study** in order to achieve the objectives.
- Basically, the workflow illustrates or **carry out in term of phases**.
- Each phases need to be **explained briefly** and concisely.

Example...

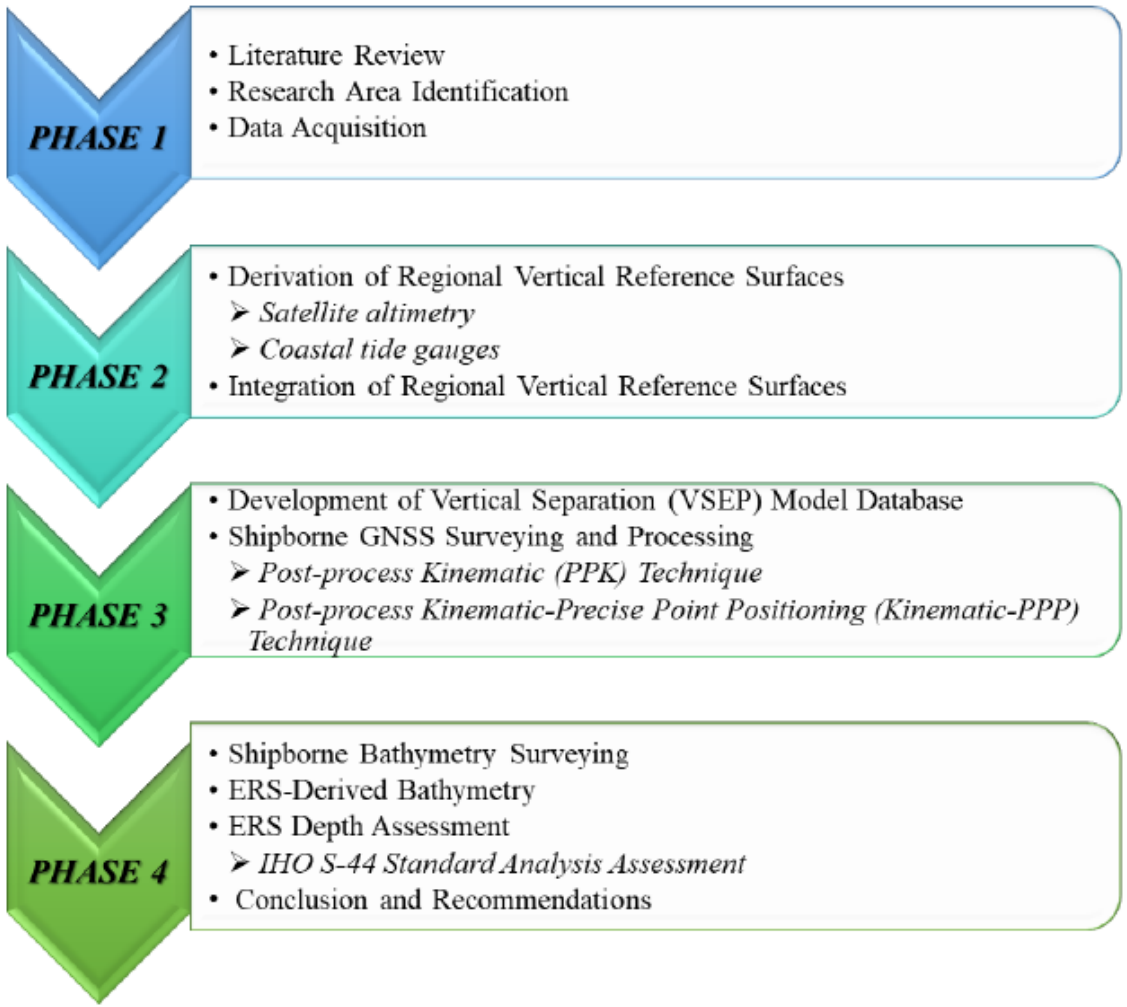

Figure 1.5 Research Methodology Framework

Example…

1.8 Thesis Outline

This research is divided into five chapters. All chapters in this study are dependent with one another. This means, the previous chapter must be understandable before proceeding with the new chapter. The outlines for each chapter are discussed below:

Chapter 1 (Introduction) - Focuses more about the overall background of this research work. This chapter will also focus more on the aim and objectives of this study.

Chapter 2 (Literature Review) - This chapter will focus on several topics such as conventional bathymetric survey, vertical positioning, separation model development and satellite altimeter technology. Simply, this chapter will discuss and explain more about the main theories that need to be understood as well as highlight on previous study from other researchers in relation to the topic.

Chapter 3 (Research Methodology) – This chapter will explain about the methods or techniques that are used for bathymetric data acquisition. The methodology is set out properly in order to achieve the objectives of the research. Besides, it will also explain about the software that will be used for post-processing and also for analyzing the data.

Chapter 4 (Preliminary Result) - The preliminary result will be shown and act as a proof for part of the proposed methodology. It is expected that the aim and the objectives of the research are to be achieved

Chapter 5 (Conclusion and Recommendation) - This chapter is more concerned about summarizing the results and discussion. It also includes a list of the most important findings of the study. This chapter also provides a statement about the possibility of future study.

Thesis Outline

- The **most critical early steps** in the writing process.
- It facilitates **to organize the ide**as and **provide a roadmap** in deciding what kind of research will be taken.
- Focus on **chapter outline** – to inform the readers about the organizational structure of your thesis.
- Chapter outlines also known as a reading guide or summary outline.

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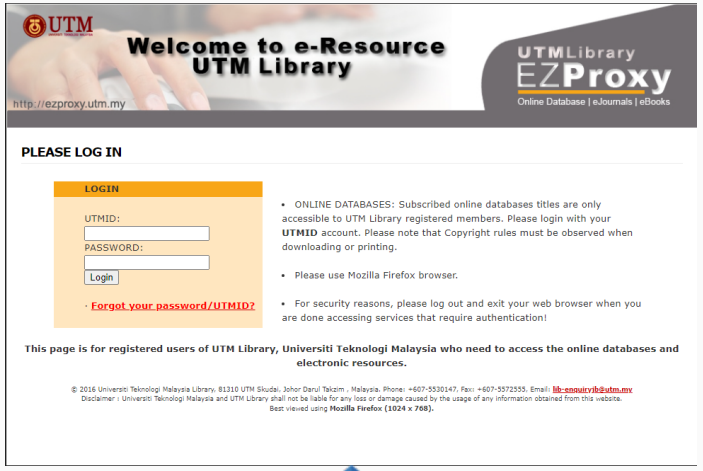
SOURCE OF DATABASES / REFERENCES

1. PSZ Online Database: https://login.ezproxy.utm.my/login
2. Google Scholar: https://scholar.google.com/
3. Ebook: https://www.pdfdrive.com/
4. Sci-Hub: https://www.sci-hub.se/
5. Any related website
6. Discussion/ interview with lecturers or postgraduate students
7. PSZ & Zarith Sofea Library
8. Online thesis (worldwide) - http://oatd.org/
9. UTM Thesis Manual & Template



Google Scholar

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Theses and Dissertations

PDF DRIVE

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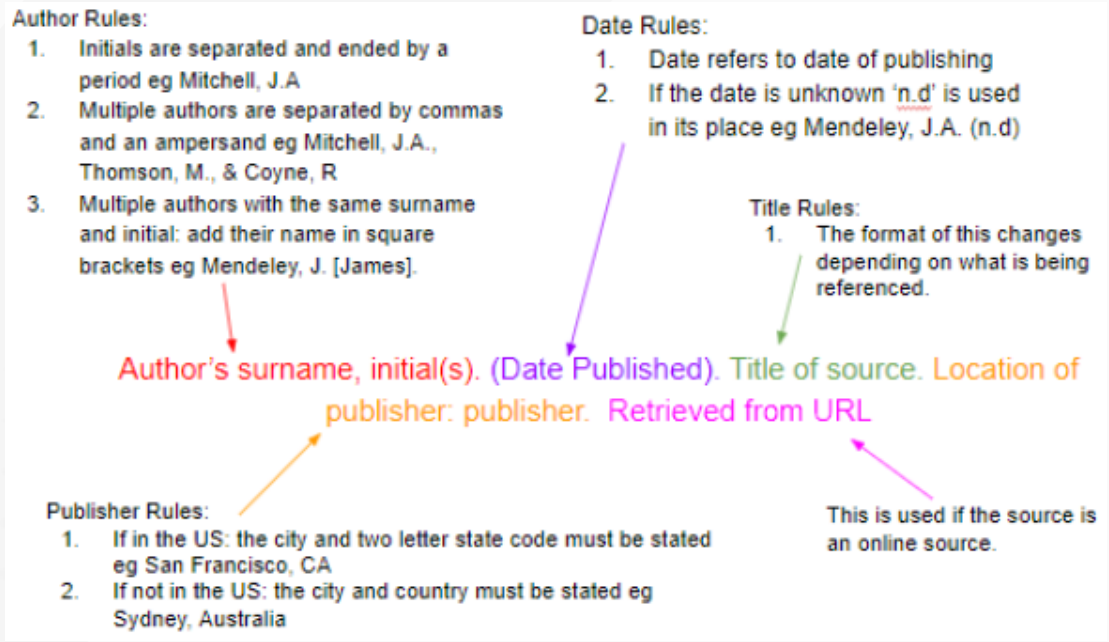
SUMMARY TABLE AND RESEARCH GAP

Researcher	Aim	Study Area	Data Gathering	Data Input	Data Processing	Analyzing Approach
NAHRIM, 2010	Sea level rise projection	Malaysian Seas	Altimeter (Tx, J1) & Tide Gauge	Sea level anomaly & Tidal	Altimeter: Global Model	- Normal Linear Trend (Sea level projection) - Altimeter only
Din et al., 2009	Sea Level rise (93 - 08)	Malaysian Seas	Altimeter(Tx, J1, e1, e2, n1) & Tide Gauge	Sea Level Anomaly & Tidal	Altimeter: Analyze on ocean tide model only	- Normal Linear Trend (Sea level rate) - Altimeter only
AVISO, 2012	Global sea level rise	Global	Altimeter (Tx, J1, J2)	Sea level anomaly	Altimeter: Global Model	- Normal linear trend (Sea level rate) - Altimeter only
Hooper, 2006	Volcano and land subsidence	Galapagos and Netherlands	ERS and EnviSat (PS InSAR)	Vertical land motion	Localized to the study area	Normal linear trend (VLM)
Willis, 2008	Crustal motion	West and East Antartica	GPS	Horizontal and vertical land motion	Localized to the study area	Normal linear trend (Horizontal and vertical)
This Study	*Sea level rise (93- 11)*	*Malaysian Seas*	*Altimeter (Tx, J1, J2, e1, e2, n1), Tide Gauge, GPS and PS InSAR*	*Sea level anomaly, tidal data, vertical land motion from GPS, PS InSAR & "SALT minus TG"*	- *Altimeter: Apply the best model for each correction* - *Altimeter: Data filtering and gridding (using Gaussian Weighting Function)* - *PS InSAR & GPS: Localized*	- *Robust fit technique (Sea level & VLM rate)* - *Altimeter + tide gauge (absolute)*

REFERENCES STYLE

- Please refer UTM Thesis manual for reference style
- Preferable to use APA Reference Style



Mendeley

https://www.mendeley.com/

EndNote

https://software.utm.my/soft/4VB

References

Hamden, M. H., Din, A. H. M., Wijaya, D. D., Yusoff, M. Y. M., & Pa'suya, M. F. (2021). Regional mean sea surface and mean dynamic topography models around malaysian seas developed from 27 years of along-track multi-mission satellite altimetry data. Frontiers in Earth Science, 9, 665876.

Citation Text

Hamden et al. (2021)

GANTT CHART

graphical depiction of a project schedule

GANTT CHART											
TITLE	:										
NAME	:										
PROJECT START	:										
PROJECT END	:										
TASK		SEMESTER 1 - 2023/2024					SEMESTER 2 - 2023/2024				
		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
Proposal Preparation	Topic Determination										
	Study Area Identification										
	Problem Statement										
	Literature Review										
	Study Methodology										
	Expected result and analysis										
	Proposal Paperwork										
	Proposal Defense										
Result and Analysis	Data Acquisition										
	Data Processing										
	Result and Analysis										
Thesis Submission and Viva-voce	Preparation of Thesis										
	Prepation for Viva-Voce										
	Viva-Voce										

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THANK YOU

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Kerana Tuhan untuk Manusia