

UNLOCKING THE SECRET OF RESEARCH FRAMEWORK

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Abstract: Welcome to the world of research! Whether you are a seasoned academic or a curious newcomer, this book is designed to help you navigate the complex and exciting landscape of research. From the basics of defining research and understanding its importance, to the intricacies of variable selection and literature review, this book will guide you through every step of the research process. Chapter One invites you to explore the boundless realm of research through an academic lens. With a masterful blend of dramatic and erudite language, this chapter serves as a portal into the intricate world of research. Chapter Two delves into the crucial role of variables in the realm of research. With variables as the fundamental building blocks of research, this chapter provides a comprehensive overview of the distinct types of variables, including their unique properties and characteristics. In Chapter Three, our voyage entails guiding you through the intricate construction of theoretical, conceptual, and research frameworks while equipping you with the ability to discern between quantitative and qualitative research methods. Chapter Four will embark on a quest to unveil the essence of literature review, elucidating its fundamental definition and purpose. We will also equip you with the necessary tools and strategies to undertake a meticulous review, while navigating through the labyrinth of common obstacles and potential pitfalls. Chapter Five stands at the threshold of innovation, illuminating the interplay between literature review and research. The intricate relationship between literature review and research is laid bare, as we delve into how literature review influences the formulation of research questions, objectives, hypotheses, and methodology. In totality, this publication endeavours to serve as a definitive and extensive handbook to research, intended to cater to researchers of all calibres, irrespective of their levels of expertise. Our aspiration is that this book will not only foster an unbridled enthusiasm for the research journey but also enable you to produce seminal research output that advances your field of study.

Keywords: Academic, comprehensive, benefit, data

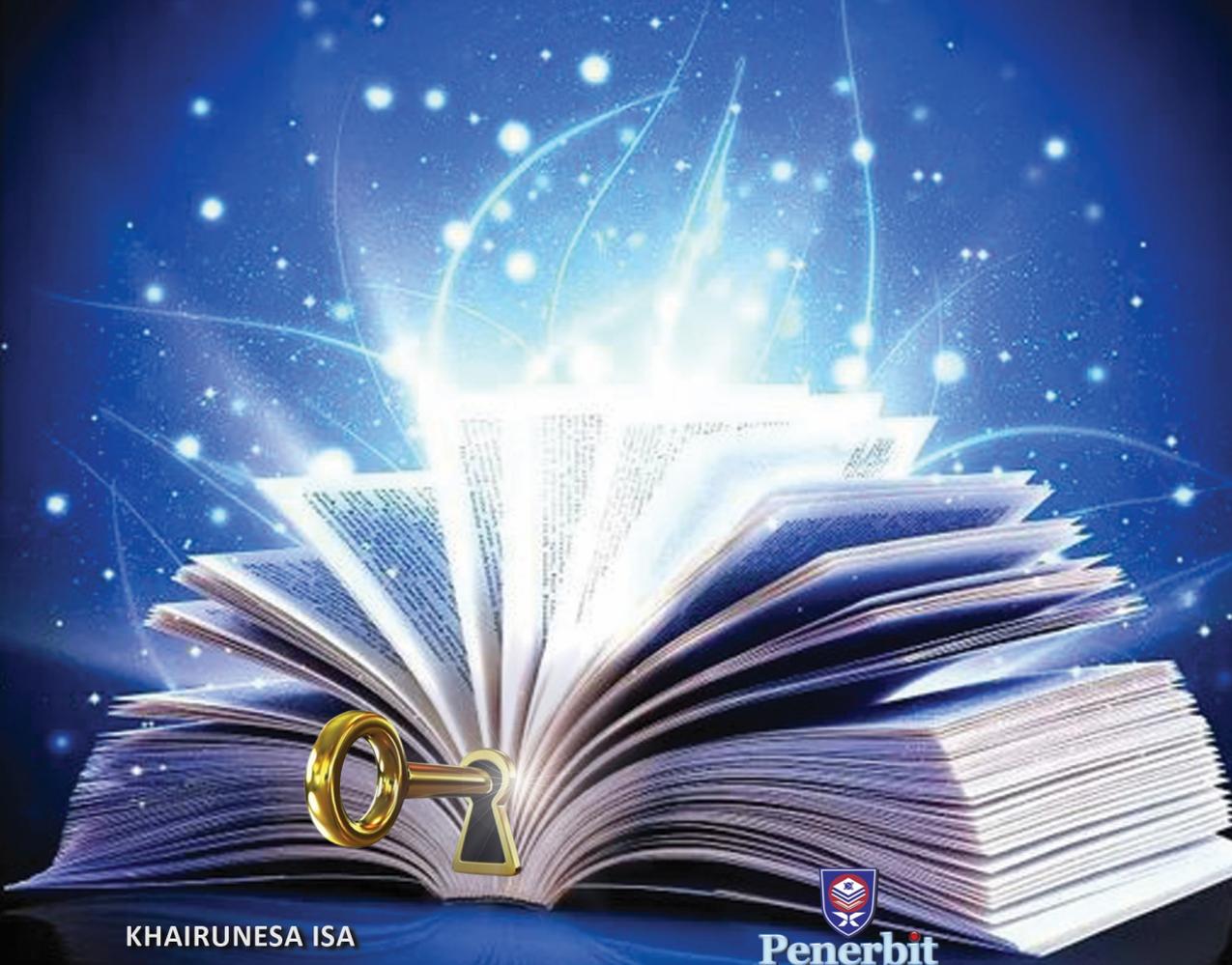
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Dedication

With profound gratitude and deep reverence, I acknowledge the divine blessings that have enabled us to bring this book to fruition.

We extend our heartfelt appreciation to UTHM Publisher for their unwavering support and commitment to the dissemination of knowledge.

We also express our sincere gratitude to all those who have contributed to the realization of this project, directly or indirectly, through their valuable insights, support, and encouragement.

Lastly, we dedicate this book to all the budding scholars who have recently set foot in the realm of academia. May this book serve as a beacon of guidance, illuminating your path to scholarly excellence and fostering a lifelong passion for the pursuit of knowledge.

Thank you.

"Whoever treads a path in search of knowledge,
Allah will make easy for him the path to
Paradise."

- Prophet Muhammad SAW -

"The cave you fear to enter holds the treasure you
seek."

- Joseph Campbell -

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Preface

Welcome to the world of research! Whether you are a seasoned academic or a curious newcomer, this book is designed to help you navigate the complex and exciting landscape of research. From the basics of defining research and understanding its importance, to the intricacies of variable selection and literature review, this book will guide you through every step of the research process.

As you embark upon your research journey, Chapter One invites you to explore the boundless realm of research through an academic lens. With a masterful blend of dramatic and erudite language, this chapter serves as a portal into the intricate world of research. It illuminates the purpose and significance of research and distinguishes the unique features of science and social science research. By examining the various types of research, including their designs and ethical considerations, this chapter lays a strong foundation for your research aspirations. Whether you are a novice researcher or a seasoned scholar, this chapter is a must-read for anyone seeking to deepen their understanding of research and its integral role in academia and beyond.

Chapter Two delves into the crucial role of variables in the realm of research. With variables as the fundamental building blocks of research, this chapter provides a comprehensive overview of the distinct types of variables, including their unique properties and characteristics. Furthermore, this chapter also discusses the common challenges and strategies that come with selecting and defining variables in research. Through an in-depth analysis of these

topics, this chapter aims to equip readers with a comprehensive understanding of the role and significance of variables in research.

Meanwhile, in the scholarly realms of Chapter Three, we embark on a journey to fortify your research by exploring the pivotal role of literature review within research frameworks. Our voyage entails guiding you through the intricate construction of theoretical, conceptual, and research frameworks while equipping you with the ability to discern between quantitative and qualitative research methods.

Amplifying the scholarly grandeur, we present to you Chapter Four, a gateway to the art of conducting a literature review. In this section, we will embark on a quest to unveil the essence of literature review, elucidating its fundamental definition and purpose. We will also equip you with the necessary tools and strategies to undertake a meticulous review, while navigating through the labyrinth of common obstacles and potential pitfalls. Let us embark on a journey of discovery and intellectual enrichment, as we explore the nuances of this crucial research component.

In a grand culmination of this book's exploration of research fundamentals, Chapter Five stands at the threshold of innovation, illuminating the interplay between literature review and research. The intricate relationship between literature review and research is laid bare, as we delve into how literature review influences the formulation of research questions, objectives, hypotheses, and methodology. Additionally, we scrutinize the impact of literature review on various fields and industries, tracing its evolution and the momentous changes it has catalyzed. Through this chapter, readers will also be exposed to a rich repertoire of techniques and tools for conducting literature review, alongside a firm emphasis on the ethical considerations that should underpin any robust literature review.

In totality, this publication endeavours to serve as a definitive and extensive handbook to research, intended to cater to researchers of all calibres, irrespective of their levels of expertise. Our aspiration is that this book will not only foster an unbridled enthusiasm for the research journey but also enable you to produce seminal research output that advances your field of study.

Chapter 1

INTRODUCTION TO RESEARCH

1.0 INTRODUCTION

The world we live in is constantly changing, with new discoveries, technologies, and ideas emerging every day. But how do we know what is true and what is not? How do we separate fact from fiction, and make decisions based on reliable information? The answer, once again, lies in research. Research is not just a buzzword or a vague concept - it is a critical process that underpins all of our knowledge and understanding. From the natural sciences to the social sciences, from healthcare to education, research plays a vital role in shaping our world and improving our lives.

In this chapter, we will take a deep dive into the world of research, exploring its definition, purpose, and methods. We will learn how research is conducted, why it is important, and what ethical considerations must be taken into account. Whether you are a student, a professional, or simply someone who is curious about the world, this chapter will provide you with the foundational knowledge you need to navigate the complex and fascinating world of research. So buckle up, and let's embark on a journey

Chapter 2

VARIABLES IN RESEARCH

2.0 INTRODUCTION

As a researcher, understanding the various types of research variables is crucial for conducting rigorous and meaningful studies. Variables serve as the building blocks of research, providing the means for measuring and analyzing different phenomena. They are essential components of research design, allowing for the creation of hypotheses, the testing of theories, and the evaluation of the effectiveness of interventions.

In this chapter, we will explore the different types of research variables and their significance in research. From independent and dependent variables to extraneous and confounding variables, we will provide a comprehensive overview of the key concepts and definitions. We will also examine the ways in which variables can be operationalized, measured, and analyzed, as well as the potential sources of error and bias in research. Whether you are a student, a practitioner, or a researcher, this chapter will offer valuable insights into the complex and dynamic world of research variables.

Chapter 3

BUILDING A STRONG FOUNDATION: THE ROLE OF LITERATURE REVIEW IN RESEARCH FRAMEWORKS

3.0 INTRODUCTION

Framework in research refers to the structure and organization of a research project, including the methods, tools, and techniques used to collect and analyze data. A well-designed framework can enhance the rigor, relevance, and efficiency of a research project, leading to more meaningful and impactful findings. The development of a research framework requires careful planning and consideration of several key factors, including the research questions, the research methodology, and the data analysis methods. By defining these elements upfront, researchers can ensure that their study is focused, rigorous, and relevant to the research problem at hand.

Chapter 4

DISCOVERING NEW INSIGHTS WITH LITERATURE REVIEW: A BEGINNER'S GUIDE

4.0 INTRODUCTION

A critical component of any research is conducting a comprehensive review of the existing literature related to the research topic. The literature review serves as the foundation for developing the research framework and is a crucial step in ensuring that the study is grounded in established theory and research. The purpose of this chapter is to provide a thorough understanding of the role and importance of the literature review in the research process, particularly in developing the research framework.

This chapter will guide you through the process of conducting a literature review, including identifying relevant sources, evaluating the quality and relevance of the literature, and synthesizing the findings. Additionally, we will discuss the benefits of a well-conducted literature review, such as the ability to identify gaps

Chapter 5

CONNECTING THE DOTS THROUGH LITERATURE REVIEW

5.0 INTRODUCTION

This chapter explores the vital role of literature review in identifying knowledge gaps, controversies, and emerging trends in a particular research area, which can provide direction to the development of research questions. Furthermore, we discuss how literature review helps researchers refine research objectives by identifying relevant concepts, constructs, and variables that are critical to the research question. Additionally, we delve into the importance of literature review in the formulation of testable hypotheses that predict relationships or differences between variables. Literature review can either provide evidence for or against existing hypotheses or suggest new ones based on emerging evidence or theoretical frameworks.

Bibliography

- American Psychological Association. (2020). Social and personality psychology research. <https://www.apa.org/action/science/social>
- American Psychological Association. (2017). Ethical principles of psychologists and code of conduct. <https://www.apa.org/ethics/code/>
- Babbie, E. (2016). The basics of social research. Cengage Learning.
- Bryman, A. (2016). Social research methods (5th ed.). Oxford University Press.
- Cavanagh, S. R., Klineberg, E., Munshi, N., & McKeown, S. (2021). Social media use and mental health among young adults: A cross-sectional study. *Journal of Medical Internet Research*, 23(6), e25990. <https://doi.org/10.2196/25990>
- Charmaz, K. (2014). Constructing grounded theory. Sage publications.
- Clark, C., et al. (2020). Family Income, Parental Education and Academic Achievement in Early Childhood: Evidence from the United States. *Child Indicators Research*, 13(4), 1313-1336.
- Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage publications.
- Coghlan, D., & Brannick, T. (2014). Doing action research in your own organization (4th ed.). Sage Publications.
- Cohen, L., Manion, L., & Morrison, K. (2011). Research methods in education. Routledge.

- Cooper, H. (2017). *Research synthesis and meta-analysis: A step-by-step approach*. Sage publications.
- Cooper, H. (1988). Organizing knowledge syntheses: A taxonomy of literature reviews. *Knowledge in Society*, 1(1), 104-126.
- Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications.
- Fink, A. (2014). *Conducting research literature reviews: From the internet to paper*. Sage publications.
- Fryer, L. K. (2018). Developing a conceptual framework in educational research. *Journal of Educational Research and Practice*, 8(3), 176-184.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Kessler, R. C., Green, J. G., Gruber, M. J., Sampson, N. A., Bromet, E., Cuitan, M., Zaslavsky, A. M. (2005). Screening for serious mental illness in the general population with the K6 screening scale: Results from the WHO World Mental Health (WMH) survey initiative. *International Journal of Methods in Psychiatric Research*, 14(1), 21-35. <https://doi.org/10.1002/mpr.6>
- Khoury, M. J., Gwinn, M., Yoon, P. W., Dowling, N., Moore, C. A., & Bradley, L. (2018). The continuum of translation research in genomic medicine: how can we accelerate the appropriate integration of human genome discoveries into health care and disease prevention? *Genetics in Medicine*, 10(10), 665-674.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International.

- Khairunesa Isa & Sarala Thulasi Palpanadan (2022). A Guided Template for Proposal Writing in Social Science Disipline.
- MIT Technology Review. (2020). Top 10 breakthrough technologies. <https://www.technologyreview.com/2020/02/26/905652/top-10-breakthrough-technologies-2020/>
- National Science Board. (2018). Science and Engineering Indicators 2018. Retrieved from <https://www.nsf.gov/statistics/2018/nsb20181/report/sections/research-and-development-performance-and-outcomes/research-and-development-performance-and-outcomes-by-country-or-region>
- National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). The Belmont report: Ethical principles and guidelines for the protection of human subjects of research. U.S. Government Printing Office.
- National Science Foundation. (2018). Why research matters. https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=245357&org=NSF
- Nobel Prize. (n.d.). The discovery of insulin. <https://www.nobelprize.org/prizes/medicine/1923/summary/>
- Panahi, S., Watson, J., & Partridge, H. (2018). Towards a theoretical framework for literature reviewing in information systems. *Journal of Information Technology*, 33(3), 212-227.
- Park, H. W., & Leydesdorff, L. (2010). Longitudinal trends in networks of university–industry–government relations in South Korea: The role of programmatic incentives. *Research Policy*, 39(5), 640-649.
- Phipps, D., & Shapson, S. (2009). Knowledge mobilization: An overview of research findings. *Canadian Journal of Library and Information Practice and Research*, 4(2), 1-20.

- Reason, P., & Bradbury, H. (Eds.). (2008). *The Sage handbook of action research: Participative inquiry and practice* (2nd ed.). Sage Publications.
- Rocco, T. S., & Plakhotnik, M. S. (2009). Literature reviews, conceptual frameworks, and theoretical frameworks: terms, functions, and distinctions. *Human Resource Development Review*, 8(1), 120-130.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson Education Limited.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Seneviratne, W. S., Abeylath, S. C., Hettiarachchi, S. D., & Athukorale, P. V. (2018). Nanotechnology based drug delivery systems for cancer treatment: An overview. *Journal of Nanomaterials*, 2018, Article ID 6972405. <https://doi.org/10.1155/2018/6972405>
- Sharma, S., et al. (2021). A Phase 3 Randomized Trial of Nusinersen in Spinal Muscular Atrophy. *New England Journal of Medicine*, 384(2), 915-923.
- United Nations. (2021). Air pollution. <https://www.un.org/en/sections/issues-depth/air-pollution/>
- United Nations Development Programme. (2020). Poverty reduction. <https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-1-no-poverty.html>
- UNESCO Institute for Statistics. (2021). Research and development. https://data.uis.unesco.org/?querytype=indicator&indicatorId=RD_EXPENDITURE_GDP

- UNESCO Science Report: The Race Against Time for Smarter Development (2015). Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000232737>
- Wong, S. L. (2016). Writing a research proposal. In *Writing for Publication in Nursing and Healthcare* (pp. 57-76). Springer.
- World Bank. (2021). Research and development expenditure (% of GDP). Retrieved from <https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS>
- Zhang, S., Xia, J., Lin, X., Wang, Y., Zhang, H., & Wang, X. (2021). A new type of superlattice with tunable bandgap and band edges. *Nature*, 594, 54-59. <https://doi.org/10.1038/s41586-021-03535-5>

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