

The Main Stages of the Research Process - A Review of the Literature

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ABSTRACT

The review about the main stages of the research process discusses the significance and relevance of every step and explains the cyclical process of the research from the problem identification up to writing of research report. The research process can be challenging, but it is also a rewarding experience. By following the steps outlined in this review, researchers can conduct high-quality research that will contribute to knowledge in any field.

Keywords: research, stages, process

the nature of the problem under study, the types of data to collect, approaches adopted for data analysis or techniques employed to come up with research conclusion. Despite this variety in approaches, there are main stages that at least every research should go through in its entire process. They are as follow: identify the problem; review of the literature; setting the research questions, objectives, and hypotheses; choosing the study design; deciding on the sample design; collecting data; processing and analyzing data; and finally writing the report. Here below, is the diagram indicating the main stages of the research process.

INTRODUCTION

Different authors proceed in variety of ways when it comes to conducting research, and they opt for a research process depending on

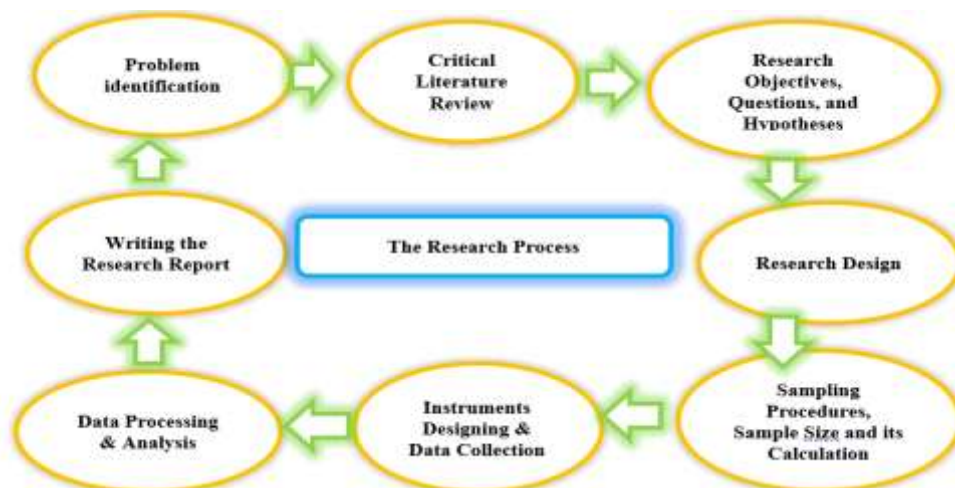


Figure 1: The Research Process- Student Self-Design

LITERATURE REVIEW

The Research Process in detail

a. Problem identification

According to Rubestein et al. (2020), problem identification is the foundation of the entire research. If there is no problem, there is no need to conduct research. In

other words, research is a problem driven action. The identification, description, analysis, relevance, and the definition of the problem highlights the need and the *raison d'être* of conduction of research for finding solution to such problem. Logically speaking, if the problem is not very well formulated, and described through the distinction of its purpose and relevance, the research process will end by failing.

As Muthukrishna and Henrich (2019) have critically argued, the problem to be studied in the entire research process is generated from the researcher's investigation through readings, attended seminars, conferences, workshops, as well as from peer, and collegial exchanges. A very well stated problem through tangibles evidence leads to the clear need to be investigated. In addition, a very well identified and defined problem allows the clear formulation of the research title or topic. In this, the literature search is very fundamental in finding out the problems that merit investigation, and solutions.

b. Critical Literature Review

Critical literature helps to situate the research under study from the past investigated research (Nashruddin & Mustaqimah, 2020). It helps to critically analyse what other scholars have found out *vis-à-vis* the current study either in similarity or in opposition regarding the problem statement (Vaughn & Jacquez, 2020). Writing an effective literature review gives foundation to the entire research to stand on a stone very well-tailored. A very well and critically reviewed literature bases on the prior research, it justifies the research through its relevance and originality, and shows the researcher's preparedness (Alvesson & Sandberg, 2021). Wee and Banister (2016) assert that reviewing literature helps to find out whether the research to be investigated may not be a duplication of another research already conducted.

c. Research Objectives, Questions, and Hypotheses

The research objectives justify a strong reason why such research is worth doing. Research objective should reflect the solution of the problem. If you cannot state the problem, you cannot state the objectives. Objectives are intentions or purposes stated in specific measurable terms (Kothari, 2004). An objective is a clear statement of something that needs to be accomplished over a period. They can be general or specific. They must be smart. Objectives of the study should be characterized by expectations to be achieved. They are formulated into action verbs which are measurable, and they should not be unrealistic (Pandey & Pandey, 2021). Objectives are achieved in a very well-defined time frame. Research questions and research hypotheses are formulated from the research objectives and are respectively drawn into interrogative form and assumptions statement. As Ryan (2023) put it, appropriate formulation of the research objectives in a clear manner is one of the most important parts of any research. They provide the scope, depth, and overall direction of the research.

d. Research Design

The research design provides the architect or the structural engineering of the entire research. The design of the research gives direction to the methods, approaches, and types of data to collect to finally draw appropriate conclusion of the research. Asenahabi (2019) considers the research design as a glue that holds all the elements of the research together to ensure that all the undertaken steps are following the same path and are interconnected keeping in mind the overall goal of the research. When constructing a building, there is no reason to order materials or set critical dates for completion of project stages until the builder knows what sort of building is being constructed. The first decision is whether there is a need for a high-rise office building, a factory for manufacturing

machinery, a school, a residential home, or an apartment block. Until this is done, the builder cannot sketch a plan, obtain permits, work out a work schedule or order materials. Similarly, as Kazdin (2021) argued, research needs a design or a structure before data collection or analysis can commence.

e. Sampling Procedures, Sample Size, and its Calculation

A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Nanjundeswaraswamy & Divakar, 2021). When dealing with people, it can be defined as a set of respondents (people) selected from a larger population for the purpose of a survey. Sampling is the act, process, or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining parameters or characteristics of the whole population. Samples are very important because it is quite complex and challenging from both a strategic and a resource perspective to study all the members of a population for a research project. The sample size calculation may derive from different formulae as suggested for instance by Krejcie and Morgan (1970); O'Leary (2004); Research Advisors (2006) and Cohen, Manion and Morrison (2007).

f. Instruments Designing & Data Collection

The nature of the data to be collected determines the types of research instruments to be designed (Rahi et al., 2019). It also depends on the types of variables under study and the ways the collected data will be analysed. Instruments may vary from administered questionnaire, self-administered questionnaire, observation, interview, focus group discussion, and laboratory-based analysis. The designed instruments must be valid, and reliable to ensure they measure what they are supposed to measure and nothing else. Elyazgi (2018), insists on the necessity to evaluate

the target population under study to determine the appropriate research instrument to be used during the process of data collection.

g. Data Processing & Analysis

This part of the research process is very critical as when it is not very well performed, it may provide misleading results. An analysis of data is made by showing predominance of results and explaining the possible causes of it or factors behind collected results. Data processing requires a very well-structured data presentation via charts, tables, and graphs. In addition, data analysis requires appropriate techniques depending on the nature of the variables under study (qualitative or quantitative variables). In qualitative data analysis, the choice of which technique to use will depend on the specific research question being asked and the type of data that is being collected. For example, if you are interested in identifying the most common words or phrases used in a set of interview transcripts, then content analysis would be a good choice. If you are interested in understanding how people make sense of their lives, then narrative analysis would be a good choice. In quantitative data analysis, the choice of which quantitative data analysis technique to use depends on the specific research question or problem that is being addressed. For example, if the goal is to simply describe the data, then descriptive statistics may be sufficient. However, if the goal is to make inferences about a population or to identify patterns in data, then inferential statistics or data mining techniques may be more appropriate.

h. Writing the Research Report

The last stage of writing the research report will attract readers or not. This stage requires critical, logical, and analytical academic writing, respecting the referencing styles both inside the text and in the reference list. Appropriate language is key to writing a good report. Clarity, focus,

conciseness, and accuracy are key factors to write an effective report.

A quality research report is one that is well-written, well-organized, and informative. It should be clear, concise, and easy to follow. The report should also be accurate and objective, and it should cite its sources properly. Tijaiya (2023) argues that writing a quality research report takes time and effort, but it is a valuable skill that can help you to succeed in your academic and professional career.

CONCLUSION

The research is an endeavor which is not performed in vague, unprepared, and surprising way. Rather, it is an activity that requires a very well-defined process, structure, and prior plan. The research process is a systematic and organized way of gathering information and evidence to answer a research question or solve a problem. It is a cyclical process that begins with the identification of a research question and ends with the presentation of the findings. The research process is a complex and challenging process, but it is also a rewarding one. By following the steps outlined above, you can conduct high-quality research that will contribute to knowledge in any field.

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REFERENCES

1. Alvesson, M., & Sandberg, J. (2021). Re-imagining the research process: Conventional and alternative metaphors. Sage.
2. Asenahabi, B. M. (2019). Basics of research design: A guide to selecting appropriate research design. *International Journal of Contemporary Applied Research*, 6(5), 76-89.
3. Cohen, L., Manion, L., & Morrison, K. (2007). Observation. *Research methods in education*, 6, 396-412.
4. Elyazgi, M. (2018). Review of gathering data instruments and methods in children research.
5. Kazdin, A. E. (2021). *Research design in clinical psychology*. Cambridge University Press.
6. Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
7. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
8. Muthukrishna, M., & Henrich, J. (2019). A problem in theory. *Nature Human Behaviour*, 3(3), 221-229.
9. Nanjundeswaraswamy, T. S., & Divakar, S. (2021). Determination of sample size and sampling methods in applied research. *Proceedings on engineering sciences*, 3(1), 25-32.
10. Nashruddin, W., & Mustaqimah, H. A. Z. (2020). Critical literature review in TEFL research: Towards interdisciplinary study. *ELT Echo Journal*, 5(2), 1-5.
11. O'leary, Z. (2004). *The essential guide to doing research*. Sage.
12. Pandey, P., & Pandey, M. M. (2021). *Research methodology tools and techniques*. Bridge Center.
13. Patel, M., & Patel, N. (2019). Exploring research methodology. *International Journal of Research and Review*, 6(3), 48-55.
14. Rahi, S., Alnaser, F. M., & Abd Ghani, M. (2019). Designing survey research: recommendation for questionnaire development, calculating sample size and selecting research paradigms. *Economic and Social Development: Book of Proceedings*, 1157-1169.
15. Rubenstein, L. D., Callan, G. L., Neumeister, K. S., & Ridgley, L. M. (2020). Finding the problem: How students approach problem identification. *Thinking Skills and Creativity*, 35, 100635.
16. Ryan, E. (2023, May 31). *Research Objectives / Definition & Examples*. Scribbr. Retrieved July 7, 2023, from <https://www.scribbr.com/research-process/research-objectives/>
17. Tijaiya, G. (2023). *Social Science Research Reporting: A Manual For Beginners* (No. 29).
18. Vaughn, L. M., & Jacquez, F. (2020). *Participatory research methods—Choice*

- points in the research process. *Journal of Participatory Research Methods*, 1(1).
19. Wee, B. V., & Banister, D. (2016). How to write a literature review paper? *Transport reviews*, 36(2), 278-288.

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