

NUTRITION LABEL

**BY
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**A Thesis Submitted in Partial Fulfillment of the Requirements
For the Degree of Bachelor of Science in The
Department of Mathematics and Computer Science**

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**Orangeburg, South Carolina
OCTOBER 2023**

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ACKNOWLEDGEMENTS

[the Acknowledgments page is optional. It is a nice place to thank the faculty, friends, and family members who have helped you reach this point in your academic career. This section should be no more than one page in length.]

THESIS STATEMENT

Within the context of advancing public health and promoting informed food choices, this thesis endeavors to create a sophisticated and user-centric nutrition label website. This website will not only facilitate the evaluation and critique of nutrition labels but also prioritize the dissemination of educational content, aimed at enhancing users' understanding of nutritional information. In pursuit of these objectives, the project will place a strong emphasis on delivering an engaging, interactive, and aesthetically appealing user experience, ultimately seeking to bridge the gap between nutritional analysis and nutritional literacy, and thereby contributing to the improvement of dietary habits and overall well-being.

ABSTRACT

Obesity and diet-related health issues have reached alarming proportions globally, necessitating innovative solutions to address the lack of nutritional awareness and informed food choices. This research study addresses the overarching problem of nutritional illiteracy and unhealthy dietary habits by proposing the development of a comprehensive nutrition label website. The primary purpose of this study is to design and implement a dynamic web platform capable of evaluating and critiquing nutrition labels, while also delivering educational content that empowers users with the knowledge needed to make healthier dietary decisions.

The significance of this study lies in its potential to bridge the gap between the information presented on food packaging and the public's understanding of nutritional data, thereby promoting better eating practices.

To achieve this goal, the research design will encompass an iterative development process involving user experience design principles, web development, and the integration of relevant nutritional databases. Data collection will involve user feedback, while data analysis procedures will focus on user engagement metrics and the effectiveness of the educational content in enhancing nutritional awareness.

In due course, this research study aspires to contribute to the enhancement of nutritional literacy and the promotion of healthier dietary choices by offering an innovative and user-friendly online resource that evaluates nutrition labels and delivers educational materials, fostering a positive impact on public health and well-being.

Once data collection is complete, add the following:

Identify the key results, one or two conclusions, and recommendations that capture the heart of the research. Conclude with a statement on the implications.

Should be in the neighborhood of 250 words in length

KEYWORDS AND ABBREVIATIONS

[if needed, list any acronyms or abbreviations you use in your text]

Think about keywords or abbreviations that are not common knowledge to the general public.

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LIST OF FIGURES

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INTRODUCTION

Describe the topic of the study, the problem statement, why the study needs to be conducted (gap), and the potential implications. Preview the major sections of the chapter. *Notes:* This introduction to the chapter should be about 1 page in length or may be shorter.

Each of the following sections contains a suggested page length; however, the length of each section should be determined by sufficiency, completeness, and the specific guidelines of our individual school.

Background of the Study

Briefly, summarize the research literature that outlines the scope of the study topic and indicates that this is a current problem. You can use this literature to trace the problem from its initiation to its current state. Describe the gap in the literature that the study will address. End the section on why the study is needed; this must go beyond just filling a gap in the literature. *Notes:* Should any questions arise while you are completing this section, consult your Research Advisor. This section should be 1-2 pages in length.

Purpose of the Study

Provide a concise statement that serves as the connection between the problem being addressed and the focus of the study. The purpose contains the study intent (indicate whether the study will describe, compare, correlate explore, and develop).

Notes: see Creswell's *Research Design*, Chapter 6, for scripts on writing purpose statements. Consult your Research Advisor for assistance with completing this section if you are unsure of its content. This section should be succinct and about a half a page in length.

Research Question(s)

State the research question(s) and/or objectives. Say:

The research question(s) guiding this study is/are:

1.

Notes: If necessary, consult your Research Advisor for assistance in completing this section. This section should be **about half a page in length but may be shorter.**

LITERATURE REVIEW

Restate the problem and the purpose in an introductory manner. Provide a succinct synopsis of the current literature that establishes the relevance of the problem.

This introduction to the chapter should be **less than 1 page in length.**

Provide a review of the current literature that can include the following information:

- Identify and describe studies related to the study topic and chosen methodology that are consistent with the scope of the study.
- Explore ways in which researchers in the discipline have approached the problem. Outline the strengths and weakness inherent in each of their approaches.
- Review and synthesize studies (under each heading) related to the key variables in order to produce a description of what is known about the study topic, what is controversial, and the remaining gaps in the literature to be studied.

Note: This section should be **3-5 pages in length.**

Summary and Conclusions

Succinctly summarize major themes outlined in the literature. Briefly summarize what is known and what is not known (this frames the gap in the literature). Directly describe how the present study fills the gap in the literature and will extend knowledge in the discipline.. *Note:* This section should be around **1 page in length, but may be shorter.**

METHODOLOGY

Restate the study purpose as described in the introduction and the research question/hypotheses. *Note:* This introduction to the chapter should be less than 1 page in length.

SOME OF THESE SECTIONS MAY NOT APPLY TO YOUR RESEARCH PROJECT. IF THEY DO NOT, THEN THEY CAN BE DELETED.

Population and Sampling Procedure

Define the target population. State target population size (if known) or approximate/estimated size. Identify and justify the type of sampling strategy. Explain specific procedures for how the sample will be drawn. Describe the sampling frame (inclusion and exclusion criteria). *Note:* This section may be about less than 1 page in length.

Research Design and Data Collection Procedures

Thoroughly describe your research plan. It should be laid out like a recipe that anyone can pick up, follow and recreate. Things to think about: Describe any recruiting procedures and particular demographic information that will be collected. Describe how participants will be provided informed consent. Describe how data will be collected. Explain how participants exit the study (for example, debriefing procedures, etc.). Describe any follow-up procedures (such as requirements to return for follow-up interviews, treatments, etc.).

Describe the procedure for gaining access to the data set. Describe necessary permissions to gain access to the data (with permission letters located in an appendix.) If historical or legal documents are used as sources of data, demonstrate the reputability of

the sources and justify why they represent the best sources of data. *Note:* This section may be 1-2 pages in length.

Instrumentation (if applicable)

If you are planning to use a survey, this is that section.

For published instruments, provide:

- Name of developer(s) and year of publication
- Appropriateness to the current study

For all researcher instruments provide:

- Basis for development (literature sources or other bases for development such as a pilot study).
- Establish sufficiency of instrumentation to answer research questions.

Operationalization. For each variable describe:

- Its operational definition.
- How each variable is measured or manipulated.
- How the variable / scale score is calculated, what the scores represent, and an example item.

Note: This section may be 1 pages in length.

Data Analysis Plan

How will you collect the information gathered from your project and assess it regarding your questions. Identify software used for analyses. Provide an explanation of data cleaning and screening procedures as appropriate to the study. Restate the research questions and hypotheses.

Describe in detail the analysis plan including the elements below.

- Statistical tests that will be used to test the research question(s)/hypothesis(es)
- Procedures used to account for multiple statistical tests, as appropriate
- How results will be interpreted (e.g., key parameter estimates, confidence intervals and / or probability values, odds ratios).
- Assumptions related to the selected hypotheses

Note: This section may be about 1 page in length.

Limitations

Think about your research projects design flaws. Describe limitations of the study related to design and / or methodological weaknesses (including issues related to limitations of internal and external validity, construct validity, and confounding variables.) Describe any biases that could influence study outcomes and how they are addressed. Describe reasonable measures to address limitations. *Notes:* For further guidance on this section, consult your Senior Research Associate or Statistician. This section should be less than 1 page in length.

Ethical Procedures

Any agreements to gain access to participants or data. Describe the treatment of human participants:

- Ethical concerns related to recruitment materials and processes and a plan to address them.
- Ethical concerns related to data collection/intervention activities (these could include participants refusing participation or early withdrawal from the study and response to any predictable adverse events) and a plan to address them.

Describe treatment of data (including archival data), including issues of:

- Whether data are anonymous or confidential and any concerns related to each.
- Protection for confidential data (data storage procedures, data dissemination, who will have access to the data, and when the data will be destroyed).

Other ethical issues as applicable (these issues could include doing a study within one's own work environment; conflict of interest or power differentials, and justification for use of incentives). *Note:* This section should be about 1 page in length.

Summary

Summary of design and methodology of the method of inquiry. *Note:* This section should less than 1 page in length.

RESULTS

Review briefly the purpose, research questions, and/or objectives. *Note:* This introduction to the chapter should be less than 1 page in length.

Study Results

Report findings, organized by research questions and/or objectives. Include tables and figures to illustrate results, as appropriate, and per the current edition of the *Publication Manual of the American Psychological Association*.

For statistical analyses include:

- Exact statistics and associated probability values.
- Confidence intervals around the statistics, as appropriate
- Effect sizes, as appropriate.

Report results of post-hoc analyses of statistical tests, if applicable. Report any additional statistical tests of hypotheses that emerged from the analysis of main hypotheses, as appropriate for the study.

Note: This section should be about 5-7 pages in length, or as many needed to present the results.

DISCUSSION AND CONCLUSIONS

Summarize the problem and purpose with similar language to what you used in the introduction. Summarize the methodology. *Note:* Consult your Research Advisor for further assistance with any of the sections in this chapter. This introduction to the chapter should be less than **1 page in length**.

Summary of the Findings

This is where you will summarize the findings in your own words. Organize it by the research questions and/or objectives. This is where you are discussing how your results either answer or do not answer your research question (or support your research objective). Think of how you would describe your study findings to an interested colleague or family member. Keep the writing scholarly, but not overly technical or statistically heavy. Describe in what ways findings confirm, refute, or extend knowledge in the discipline by comparing them to the literature featured in your literature review.

Note: This section can be at **minimum 1-2 pages in length**, but the length of this section varies depending on the study and design.

Recommendations

Describe recommendations for further research that are grounded in the strengths and limitations of the current study as well as the literature reviewed in earlier sections.

This is where you can bring a bit of yourself into the research. Think of ways that, in hindsight, you may have approached the study to elicit different results.

Ensure recommendations do not exceed study or ethical boundaries. *Note:* This section should be **less than 1 pages in length**.

Conclusions

Close with a strong “take away” message where you capture the key essence of the study for your reader. Be sure to mention the Significance of the Study as described in terms of (a) advancing theory, (b) advances in practice, and/or (c) filling a gap in the literature. **Why did this study matter.** *Note:* This section should be less than 1 page in length.

REFERENCES

Follow APA 7th edition formatting when listing your references.

Your reference list and your in-text citations should align!

Appendix A: Title of Appendix

If you are using a survey or particular documents, you can list them as an appendix.