

Compulsory Readings for Research Design & Methodology

1. Practical guide to Research Design and approved style sheet *by Jide Owoeye*.
2. Approved project grading format (30/10/18).
3. Example of Acknowledgment.
4. Errors common to submitted dissertations.
5. Tips on Turabian referencing *by Philip Achimugu*.
6. An overview of a Thesis *by Kola Farinloye*.
7. Research Methodology *by Grace Oloukoi*.

Note: Item 1 is a text Book available in the University Bookshop and study materials' unit while the others are on line materials.

Lead City University

Approved Project Grading Format

Section A

1. Name of Student (Surname first)
2. Matric. No
3. Title of Essay/Project
4. Signature of Student & Date
5. Assigned Academic Staff

Section B

		Supervisor's Scores	Internal Examiner's Scores
1. Content and Style	Score		
1.1 Cover Design (initial caps) and Binding	5		
1.2 Arrangement of Title and Sections	5		
1.3 Arrangement of Footnotes or Endnotes and bibliography	10		
1.4 Language, Syntax, Spelling and Vocabulary	10		
Sub-Total	30		
2. Quality of Work			
2.1 Theoretical Content of Proposition	15		
2.2 Sequential Analysis, Logic of Argument and Relevance of Conclusion to Propositions Data Interpretation, Methods, Analysis and Results	15 OR		
2.3 Contribution to knowledge	10		
Sub-Total	40		
3. Data volume and Originality			
3.1 References (70% must be current i.e. within the last 5 years)	15		
3.2 Data Volume and Length of Research	15		
Sub-Total	30		
Grand Total	100%		

Signatures

Chief Examiner

External Examiner.....

*Suggested minimum no of Pages

B.Sc./B.A./B.Ed. - 70 pgs; PGD - 100pgs; M.Sc./MBA. - 150 pgs; MPhil/PhD - 200 pages (Typed double space)

Example of Acknowledgements

Acknowledgements

The completion of this Doctoral Thesis has been made possible by the assistance of many institutions and individuals that no adequate expressions of appreciation can be made here. I gained a lot of insight into the subject-matter of this research project from discussions with Hiroshi Memose and Akio Watanabe both Professors of International Relations at Tsuda College and Tokyo University respectively; also from June Morikawa of Tokyo University, Takashi Hisashi of National Defence College and Tatsuo Urano of Nihon Univerisity, Tokyo. I benefitted from interviews with officials in government and quasi-government establishments whose names cannot be disclosed here. My gratitude also goes to Mr. Masanori Kanda (information and cultural attaché) and Mr. Abu both of Japanese embassy, Lagos and to Mr. Hiro Moribe of Japan External organization branch office in Lagos.

I also wish to thank officials at the Nigerian Embassy in Tokyo particularly Mr. H.O. Ajomale (commercial attaché), Mr Sada (Information attaché), Mr. F.K. Oladeinde (First Secretary), and Mr. Toluhi for their assistance during the course of my highly eventful field-work in Japan.

I am highly appreciative of the services provided by the staff of the Library and Press archives of the National Diet, Tokyo; Ministry of Foreign Affairs, Tokyo; Japan External Trade Organisation, Tokyo; Osaka University of Foreign Studies, Osaka; School of Oriental and African Studies, London; Nigerian Institute of International Affairs, Lagos; and those of Hezekiah Oluwasanmi Library in Obafemi Awolowo University, Ile-Ife. Special thanks are due to my supervisor Professor Olusola Ojo and Professor Amadu Sesay, both of the department of International Relations, Obafemi Awolowo University. Also to Professors Olu Agbi, Alaba Ogunsanwo, Sam Oyovbaire and O.J.B. Ojo. Finally, to my loving wife Taiwo, I owe a debt of support that extends well past this research project.

The above mentioned persons and institutions have assisted in the completion of this thesis, but the responsibility for any errors or omissions is however mine alone.

Guidelines for Thesis Writing

1. **Approved Project Grading Format** collected from Postgraduate School as well as the book on Practical Guide to Research, Design and Methodology which is available at the study materials' unit are essential tools to promote compliance with our University's house style.
2. **Typescript:** Use initial caps all through the work.
3. **Acknowledgement** must be scholarly not journalistic or prayer meeting language. It is not an opportunity for praise singing or boot licking. Remove all non scholarly expressions. Flowery language should be avoided. Arrange the acknowledgement in the following order and place Institutions above individual:

Start with the Institutions where the research was conducted, Libraries used within and outside, research support from Librarians etc and other places relevant to the data collection.

The Academic departments where you trained that are relevant to the research work.

Supervisors, Professors etc. that looked at the work and their contributions. Lastly are the

Sponsor, Family (Just wife, children/siblings) where relevant, in one or two lines. Conclude it with a caveat like this:

“Even though the above mentioned Institutions and persons have assisted in the process of this research project, I alone stand responsible for the errors, if any, found in the work”.

4. **Abstracts** should consist summary of:

Statement of the problems

Objective of Study

Method of data collection and analysis

Major findings

Recommendation/Policy options/Projections for future research.

5. Literature Review

This should follow a thematic style. Isolate the central themes or concepts as found in the thesis title. Operational definition and review of 15-20 authors on each concept or theme. Do not write the thesis at this stage so, de-link the concepts/themes. Handle them singly as if unrelated to each other at this stage. Eliminate graphics, statistics, diagrams etc. Do not waste materials for main body of the work by utilizing them here. This is simply a chapter to indicate you are aware of previous works done in the field relevant to the proposed research you are carrying out and that you have a good grasp of the area of knowledge in which research work lies.

Provide a link between the previous works as reviewed and the proposed work you are about to do. It is a wonderful opportunity for you to show off your knowledge of the underpinnings of your proposed research. You can also use this to acquire more volume to make the final work look impressive. Ensure like in the other chapters of the thesis that data used are relevant and recent. That is, 70% of data/references/citations etc are not more than five years old, otherwise we assume that the work is plagiarised and not original. Copy or stolen works are usually replete with old sources and data that are already dated.

6. Referencing:

Listing references at the end is not acceptable. Every chapter must have its own footnotes or endnotes. Citations should be numbered serially as used from the text done in Turabian Style. This is essential to ensure that the work is carried out by you and it is not a copied job from previously written dissertation submitted elsewhere.

7. Bibliography

Selected Bibliography must be compiled at the end of the work. It should be done in sections in the following order with authors' names in alphabetical order using surname first, Text books, scholarly Journals, Periodicals, Internet Resources, Oral Information ,etc. Again, recency of materials used is vital.

8. Biodata

A one page short bio-data of the researcher must be placed in the last section after bibliography and appendixes. This should expose his scholarship up to date.

9. Quantitative Techniques. It would appear that many students used quantitative methods even while they rarely have a good grasp of this research tool.

It is not compulsory to use quantitative methods. You can be descriptive and analytical in your approach. What is important is the logicity of your arguments and systematic arrangement of the various sections as expected in a scholarly work Supervisors cannot and should not impose quantitative methods or any other methodology on the student who is actually the owner of the work. The practice of farming out research to outsiders to help with quantitative analysis is unwholesome and should not be done. A thesis submitted for our University degree must show prime evidence of independent research. None of the processes should be hired out and the supervisor should simply play his role as a promoter and not the writer or owner of the thesis.

Turabian Referencing Style

BY:

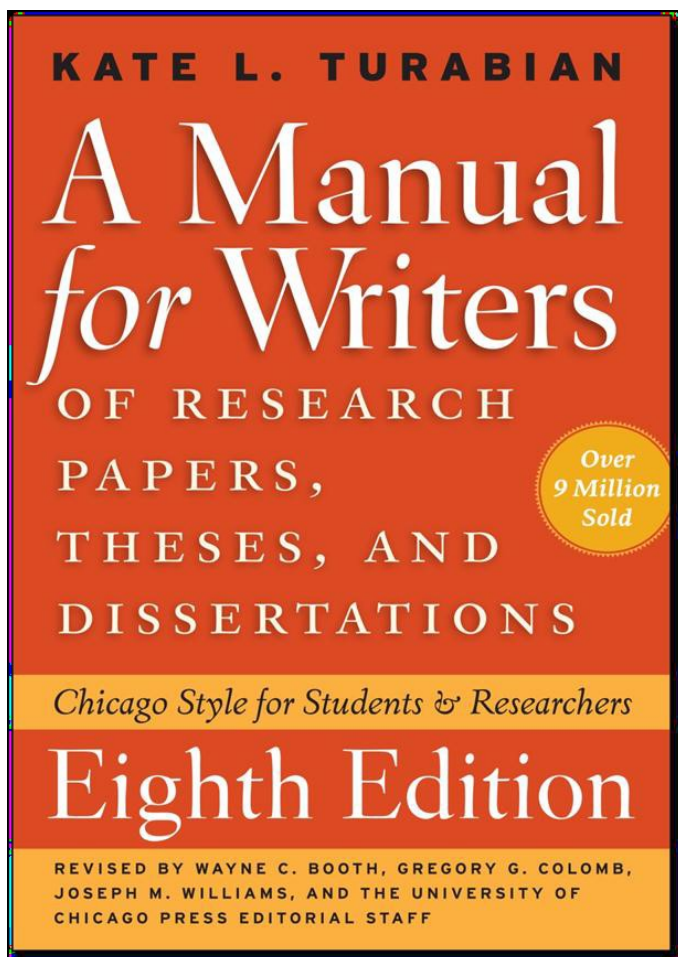
PHILIP ACHIMUGU, PhD

FIPMD, MNCS, MCPN, MITSSP, CITP

DEPARTMENT OF COMPUTERSCIENCE

LEADCITY UNIVERSITY (LCU) IBADAN

What is Turabian?



Turabian adopted at LCU

Proper Citation of Sources

At LCU, the requirement is that a dissertation be done in **Turabian style** which involves the use of properly formatted Footnotes (or Endnotes) and a Bibliography.
(or Endnotes) and a Bibliography.

Footnotes Vs Endnotes& Bibliography

- Footnotes are located at the bottom of each page.
- End notes are collection of listed sources at the end of a chapter WHILE
- Bibliography comes at the end of the dissertation after Appendixes.

Bibliography

In most cases, your bibliography should include every work you cite in your text.

You may omit the following:

- Newspaper articles
- Bible and other sacred works
- Well-known reference works (major dictionaries and encyclopedias)
- Classical, medieval, and early English literary works and (in some cases) well-known English-language plays
- Unpublished interviews and personal communications, weblog entries and comments, and postings to electronic mailing lists
- Artwork, live performances, television and other broadcast programs
- Constitutions, legal cases, and some other public documents
(It has to appear in the Endnote though!)

Notes Vs Bibliography

In Notes: Numerical indent, first/last, commas, italics and in numerical order when listing. E.g.

1. Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: W.W. Norton and Company, 1997), 47-48.

In Bibliography: Hanging indent, last/first, periods, italics and alphabetical order when listing. E.g.

Diamond, Jared. *Guns, Germs, and Steel: The Fates of Human Societies*. New York: W.W. Norton and Company, 1997.

In both cases;

Use single-line spacing, leave blank line before and after each entry.

Why Turabian?

-It enables you avoid plagiarism with appropriate use of quotation marks, block quotes and paraphrases as shown below:

-Present a prose quotation of five or more lines as a block quotation. Single-space a block quotation and leave a blank line before and after it. Do not add quotation marks at the beginning or end but preserve any quotation marks in the original. Indent the entire quotation as far as you indent the first line of a paragraph”.

Note: To avoid plagiarism, you need to paraphrase. When paraphrasing, read the passage, look away, think about it for a moment; then, *still looking away*, paraphrase it in your own words. Then check to ensure that the meaning of your paraphrased sentence is in the same order with your source sentence.

Numbering and Formatting Notes

□ **Foot/End notes** are consecutively numbered beginning with “1.” If your report has separate chapters, restart each chapter with note “1.” Each new note must be indented; although some prefer to maintain continuous numbering throughout the dissertation.

□ **Footnotes:** Begin every footnote on the page where reference is made. Put a short line between the last line of the text and the first footnote on each page.

□ **Endnotes:** List endnotes together at the end of each chapter. Start each note on a new line, with a blank line between notes. Label the list *Notes*. If you restart numbering for each chapter, add subheadings to distinguish the notes for each chapter: “Chapter 1” and so forth.

Citation & Listing using Turabian Style

Books

□ **Note:** If a book has a translator or editor, substitute the words *trans.* or *ed.* respectively.

Endnote:

1. Author’s First and Last Names, *Title of Book: Subtitle of Book*, **ed.** Editor’s First and Last Names (Place of Publication: Publisher’s Name, Date of Publication), XX-XX.

Bibliography:

Author’s Last name, Author’s First Name. *Title of Book: Subtitle of Book*. **Edited by** Editor’s First and Last Names. Place of Publication: Publisher’s Name, Date of Publication.

-**In bibliography**, no parenthesis is required, last name comes first, periods are used rather than commas, page numbers not required; alphabetical order required.

Books Contd.

•Endnote:

•Book (author plus editor or translator)

1. Jane Austen, *Persuasion: An Annotated Edition*, ed. Robert Morrison (Cambridge, MA: Belknap Press of Harvard University Press, 2011), 311–12.

•Book (edition number)

1. John Van Maanen, *Talkes of the Filed: On Writing Ethnograby*, 2nd ed. (Chicago: University of Chicago Proess, 2011), 84.

•Book Chapter (in an edited book)

1. Ángeles Ramírez, “Muslim Women in the Spanish Press: The Persistence of Subaltern Images,” in *Muslim Women in War and Crisis: Representation and Reality*, ed. Faegheh Shirazi (Austin: University of Texas Press, 2010), 231.

•Book (electronic)

1. Philip B. Kurland and Ralph Lerner, *The Founders’ Constitution*(Chicago: University of Chicago Press, 1987), 19, accessed October 15, 2011, <http://press-pubs.uchicago.edu/founders/>.

Books Contd.

Bibliography

•Book (single author or editor)

Gladwell, Malcolm. Ed. *The Tipping Point: How Little Things Can Make a Big Difference*. Boston: Little Brown, 2000.

•Book (two or three authors)

Morey, Peter and Amina Yaqin. *Framing Muslims: Stereotyping and Representation after 9/11*. Cambridge, MA: Harvard University Press, 2011

Journals

Journal Article in Print:

Endnote:

1. Author's First and Last Names, "Title of Article: Subtitle of Article," *Title of Journal* Volume Number, Issue Number (Date of Publication): XX-XX.

Example:

1. Alexandra Bogren, "Gender and Alcohol: The Swedish Press Debate," *Journal of Gender Studies* 20, no. 2 (June 2011): 156.

Bibliography:

Author's Last Name, Author's First Name. "Title of Article: Subtitle of Article." *Title of Journal* Volume Number (Date of Publication): YY-YY.

Example:

Nayar, Pramod "Marvelous Excesses: English Travel Writing and India, 1680-1727." *Journal of British Studies* 44. No. 2 (April 2005): 213-38.

Journals Contd.

Endnotes:

Online (access date, URL/DOI/Database Name):

1. Campbell Brown, "Consequentialize Systems Products," *Journal of Good Ethics* 121, no. 4 (2016): 752, accessed August 29, 2016, <http://dx.doi.org/10.1086/660696>. 106-106.

Bibliography:

Online (access date, URL/DOI/Database Name):

Brown, Campbell. "Consequentialize Systems Products." *Journal of Good Ethics* 121, no. 4 (July 2011): 740-752. Accessed December 1, 2012. <http://dx.doi.org/10.1086/6>

Conference

Endnotes

1. Paul Hanstedt, "Computerization of Staff Records" (presentation, Annual Convention of the Conference on College Composition and Communication, San Francisco, USA, March 11-14, 2009).

Bibliography:

Hanstedt, Paul. "Computerization of Staff Records" Presentation at the Annual Convention of the Conference on College Composition and Communication, San Francisco, USA, March 11-14, 2009.

Website

Author, title of the page enclosed in quotation marks, title or owner of the site, URL, and access date.

Example:

Endnote:

1. Evanston Public Library Board of Trustees, "Evanston Public Library Strategic Plan, 2000-2010: A Decade of Outreach," Evanston Public Library, <http://www.epl.org/library/strategic-plan.html> (accessed October 21, 2010).

Example:

Bibliography:

Evanston Public Library Board of Trustees. "Evanston Public Library Strategic Plan, 2000-2010: A Decade of Outreach." Evanston Public Library. <http://epl.org/library/strategic-plan.html> (accessed October 21, 2010).

Interview and Personal Communication

9. Andrew Macmillan, interview by author's name, Ibadan, Nigeria, March 2, 2017.
10. Maxine Greene, e-mail message to author's name, September 29, 2015.

Newspaper Articles

15. Blair Kamin, "Wrigley Building Clearly a Landmark," *Nigerian Tribune*, July 3, 2005.

Encyclopedia Article

Author First name, Author Surname. "Title of Encyclopedia". *Publication Title*. Editor, City: Publisher, Year Published.

Endnote:

1. Fortune Nigel, "Zumsteeg, Johann Rudolf," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie, London: Macmillan, 1980.

Bibliography

Nigel Fortune. "Zumsteeg, Johann Rudolf." In *The New Grove Dictionary of Music and Musicians*. Ed. Stanley Sadie. London: Macmillan, 1980.

Sound Recordings

Composer. *Title of work*. Performer, instrument or ensemble, conductor. Labelname number.

Example:

1. Kolb, Barbara. *Soundings*. L'Ensemble Intercontemporain, Arturo Tamayo, conductor. CRI CD 576.

Unpublished Sources

Theses –Dissertations –Lectures –Presentations

Turabian

This Microsoft (MS) PowerPoint (PPT) presentation includes some material used by permission from Susan Patrick.¹

Footnote/Endnotes citation:

¹Susan Hecht, "Tips on Turabian," (MS PowerPoint presented for the Writing Center Workshop for Tips on Turabian, Denver Seminary, Littleton, Colorado, 31 August 2011), 3-6.

¹Philip Achimugu, "Tips on Turabian," (Lecture Notes on Effect of Ebola Diseases in Africa, Lead City University, Ibadan, Nigeria, 31 August 2011), 3-6.

PowerPoint Bibliography:

Hecht, Susan. "Tips on Turabian." MS PowerPoint presented for the Writing Center Workshop for Tips on Turabian. Denver Seminary, Littleton, USA. 31 August 2011. 3-6.

Achimugu Philip. "Tips on Turabian." Lecture Notes on Effect of Ebola Diseases in Africa, Lead City University, Ibadan, Nigeria. 31 August 2011. 3-6.

MS Word and Citation Software

Footnotes/Endnotes in Microsoft Word

- ☐ Use the tool: “References” from the standard toolbar and “Insert Footnote” or “Insert Endnote” (ask for preference).
- ☐ But do not rely on the automated citation formatting tool which is often based on earlier editions of style manuals. (Word 2010 uses Turabian 6thed. –two editions outdated!)
- ☐ Instead, create your own footnote and Bibliography page ‘templates’ for each type of source citation and re-use your templates throughout your writing.

An Overview of a Thesis

BY

Kola FARINLOYE Ph.D

Department of Environmental Management and
Toxicology, Lead City University, Ibadan
Nigeria

INTRODUCTION

- Each student is required to write and submit a thesis at the end of the research work.
- The Executive Committee of the Postgraduate School has often frowned at the quality of some of the Ph.D thesis presented for registration.
- Therefore, this presentation (of a general outline or a brief summary of thesis) is part of the continued efforts towards improving the quality of research thesis in our university.

Structure of the Thesis

- Back cover:** Title and full name of author typed in gold on the approved colour (code 0-010) with all letters capitalized.
- Flyleaf:** For official signature of the secretary, Postgraduate school.
- Title page:** First unnumbered page; full title of work; Full name of author; qualification of author; and the degree for which Thesis is submitted.
- Biodata:** Student's Biodata should be at the back page of the thesis
- Abstracts:** Summary of the entire presentation-
Paragraph 1. Introduction (Introductory statement; statement of problem; justification; objectives);
Par. 2. Methodology;
Par. 3. Results;
Par. 4. Conclusions
- Acknowledgements:** Aid given by others to the author.
- Certification** (by supervisor)
- Table of contents**
- Lists of tables/Figures including diagrams** (Titles and pages where they appear)
- Abbreviations/Glossary/Definitions** (major acronyms with full meanings; glossary of foreign names)
- Introduction:** Introductory statement
 Statement of the problem
 Justification
 Objectives (2-4)

- Literature review:** Survey of literature or critical appraisal of related previous work put under relevant headings.

Methodology/Materials and Methods: Description of procedures and instruments used in conducting the research

- Results:** Research findings presented in tables, figures and various illustrations.

- Discussion:** Results discussed in the light of relevant or related previous works in the area of subject matter [Note: Results and Discussion could be combined as a single chapter].

- Summary and Conclusions:** Highlights of key points or key findings; Inferences drawn from the findings would form the conclusions.

Recommendations if any would form part of the conclusions [Note: This part of the Thesis could be titled “Conclusions and Recommendations”].

Recommendations are suggestions (strategies, actions, research, solutions, *etc.*) for the future.

- References:** Citation of works used or referred to in the work.

- Turabian style** is the approved University format.

- Appendices:** Original computer programmes; too large data files; pictures and diagrams of results; and research instruments.

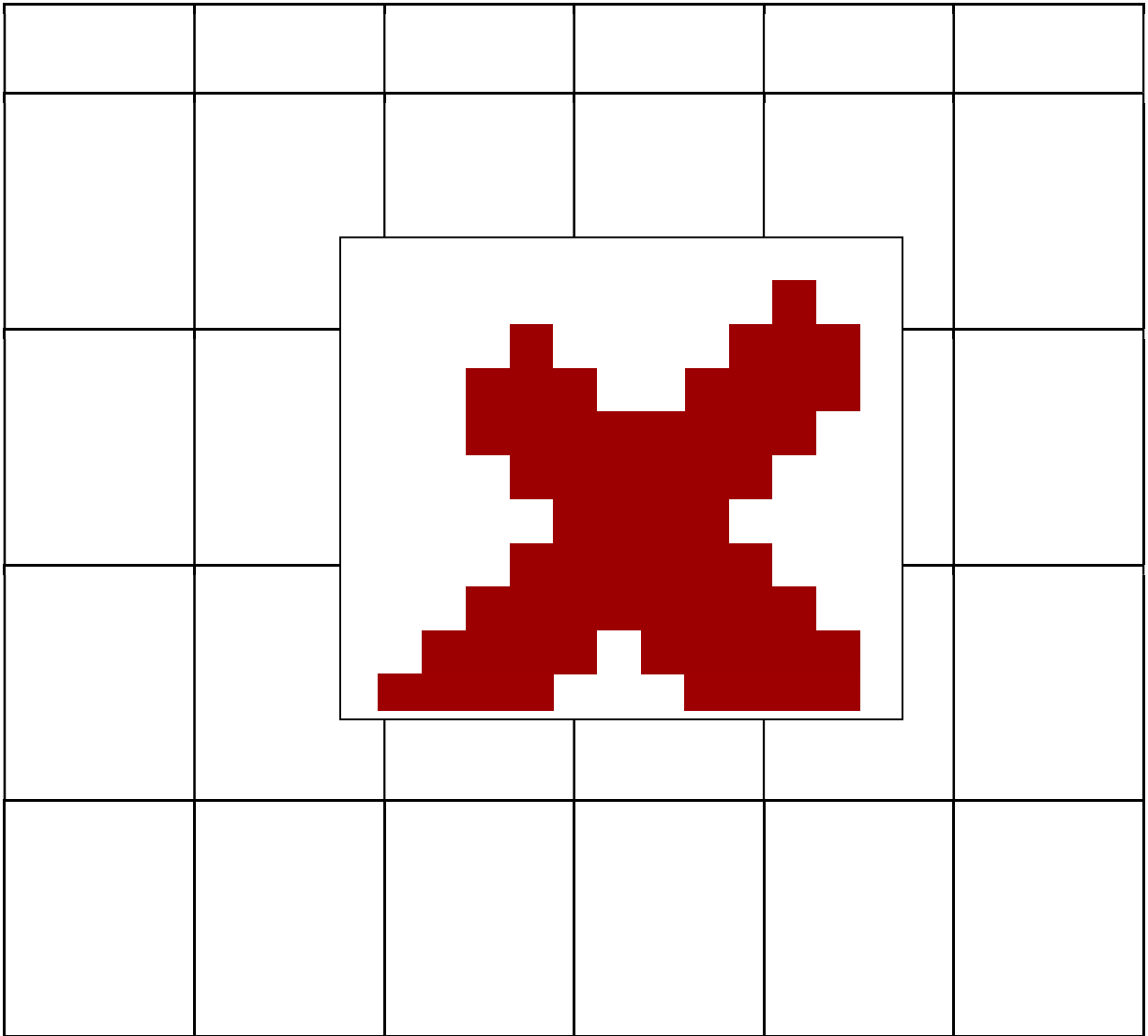
PRESENTATION OF TABLES

- Titles of tables should be complete in themselves; and put at the top.
- Source should be at the bottom of a table.
- Present only relevant data. Use acceptable units and avoid irregular presentation (e.g. decimal points). Present only what you can explain.
- Acknowledge modifications of tables [Adapted from Ajayi, 1975].
- Use simple Table format (No vertical and horizontal lines in the middle. Two lines housing the headings and one line at the end of the table (see next slide).

Table 1: Organizational Change in Solid Waste Management in Ibadan (1972 – 1999)

Period	Management Agency
1972	Ibadan City Council (Ibadan Municipal Government)
1973 – 1978	Ibadan Waste Deposal Board
1984 – 1989	Department of Sewage and Refuse Matter/Environmental Task Force/IMG/Private Firms
1989 – 1991	IMG/Private Firms/Environmental Protection Commission
1991 – 1007	Ibadan Urban Sanitation Committee/Environmental Protection Commission/Private Firms

Source: Agbola (2001).



PRESENTATION OF FIGURES

- Titles of figures (Maps, charts or graphs) should be complete in themselves; and put at the bottom thereof.
- Source should be at the bottom of a figure below the title.
- Present only relevant figures. Present only what you can explain. Provide keys where appropriate. Maps should have cardinal points and scale.
- Acknowledge modifications of figures [Adapted from Faturoti, 2000].
- All adjustment should be dimensional.
- Figures or tables too large to be reduced satisfactorily may appear on several pages.

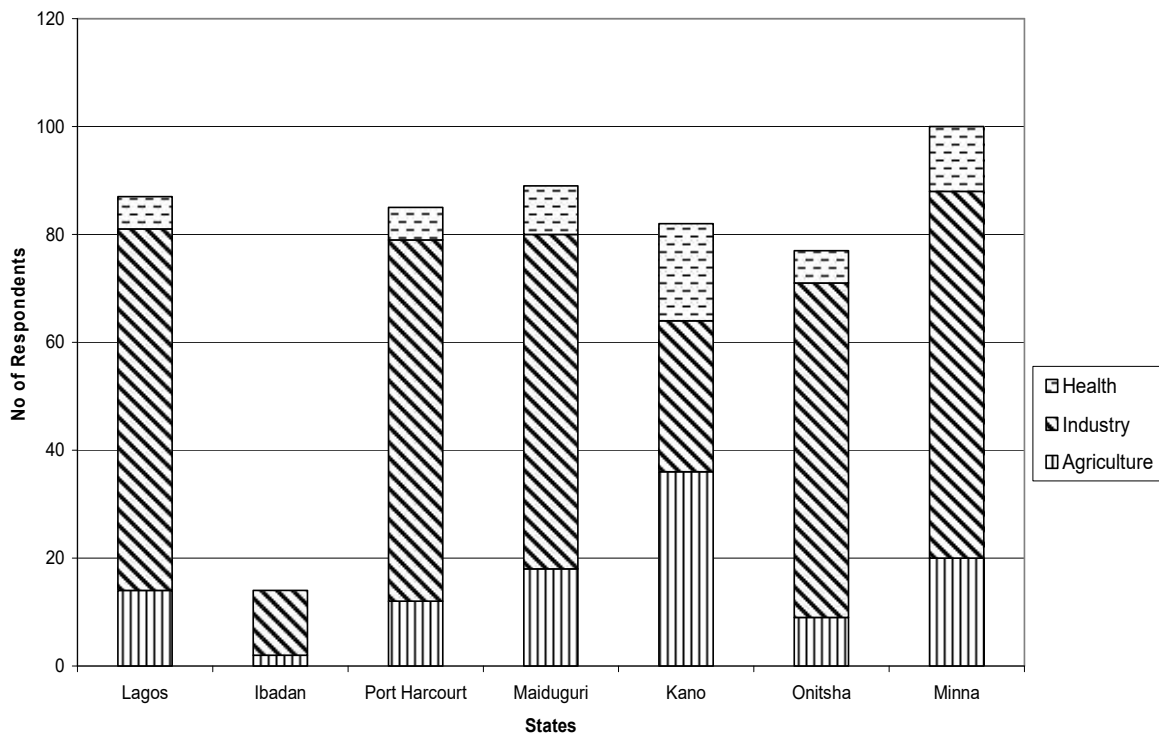


Fig 4.3: Distribution of Respondents by Sampled States and their Involvement in Waste activities by Sector



Figure 1: The Political map of Nigeria showing state and international boundaries.

Source: www.mapsofworld.com, 2012.

PRESENTATION OF PLATES

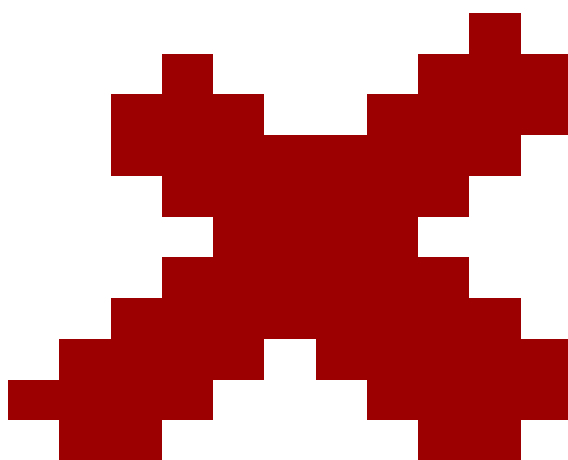
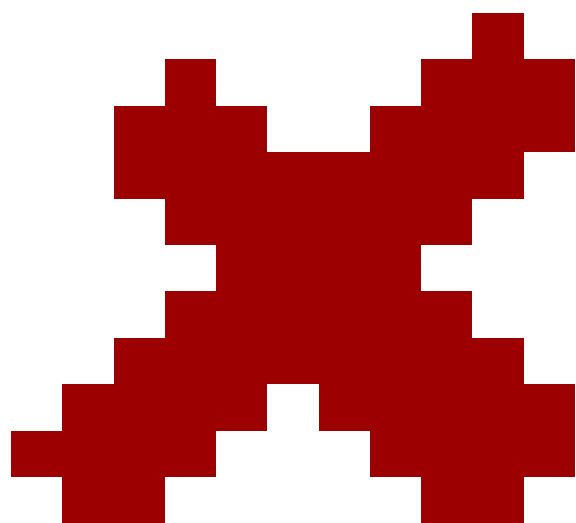
- Titles of plates (Pictures) should be complete in themselves; and put at the bottom thereof.
- Source should be at the bottom of a plate, below the title.
- Present only relevant plates. Present only what you can explain. Plates should have magnifications except when taken with ruler or an object of known size.
- Acknowledge modifications of plates [Adapted from Falaye, 2002].
- All adjustment should be dimensional.

Note: Photographs should be glossy not silk finish. Thematic appraisal of centre concepts of themes underpinning the body of knowledge relevant to the proposed work.

- Thematic appraisal of centre concepts of themes underpinning the body of knowledge relevant to the proposed work.



Plate 1: An adult Giant land snail (*Achatina marginata*).



THE KATE TURABIAN STYLE

The Kate Turabian style is an improvement over the method of footnoting at every bottom of a page.

This is to allow for smooth understanding of ideas and to remove typing problems associated with having the footnote at every page.

Advantages of Kate Turabian style

1. It helps students to read widely and extensively
2. It assists in eliminating tautology
3. It largely reduces plagiarism
4. It gives more authenticity to the author of the thesis

CITATION using Kate Turabian Style

- Kate Turabian states the author's first name or initials first and their last name come last.
- At Lead City University, the Kate Turabian style is encouraged as a way of standardizing the format of dissertations/thesis in the institution

Example A

Journal referencing

1. Jide Owuoye, "The Post Apartheid Super-State in South Africa. Implication for regional security Stability", *The Journal of International Studies* (Tokyo) No. 31, July 1993, pp. 19-33.
2. Nnamdi M. Asika, "Strategic Planning in University Organization". *Nigerian Journal of Management*, (1970). Vol 2, No. 3, pp 50-58

Example B

Textbook Referencing

1. Goke Popoola, *Elements of Banking & Finance* (Ibadan: College Press Ltd., 1999) p. 62.
2. Michael Johnson, *Diplomatic History of Japan* (Tokyo: Heinemann, 1998) p. 16-24.

Example C

Oral Interview, Participant observation, etc

- 1. Discussion with Mr. Pasca Dozie on "government policy and commercial banking in Nigeria" ON 6 December, 1999.
- 2. News talk by Dele Emmanuel on "Fraud in banking Industry" Radio Lagos (Lagos) 14 October, 2000

Example D

Unpublished Document References

- 1. Nigerian Constitution, (1979), Lagos, Federal Government Press, pp245.
- 2. Address by H.E. President Olusegun Obasanjo at the 10th annual conference of the Nigerian Labour Congress, Monday 14 September 1999.
- 3. Report of the “world Conference on Negotiations” held in Lagos, december 13-15, 1990.
- Citations should be represented by Numerical Connotations written in Superscript
- Endnotes should be numbered according to the order of appearance of authors in the body of the work.
- Citations cannot and should not stand alone.
- Every statement of fact should be accompanied with relevant citation.
- Works within the range of ten years are preferable. However, there are exceptions to this rule.

PAPER, TEXTURAL PRESENTATION AND BINDING

- Paper Quality: $\geq 80\text{g/m}^3$
- A4 (21.0cm x 29.7cm) except for drawings and maps
- Margins: Left (3.7cm); Top, right and bottom (2.5cm)
- First page of chapter (5cm above headings).
- Only one side of paper; photocopies must be permanent.
- Quality of illustrations - clear, readable and larger print; redraw or retype where necessary.
- Deletions - Not allowed. Just retype
- Insert pages - Belated insert pages not acceptable (retype surrounding pages to incorporate material, possibly with larger margins such that inserted pages is not noticeable).
- Font size 12 (Times New Roman) except for cases where special characters and fonts (e.g. mathematical equations) are required and appropriate.
- Footnotes and endnotes - Times New Roman 10
- Titles- Headings and Sub-headings should not be more than Roman point 15.
- Pagination- All pages before chapter one (Roman numerals) but title page would not carry ‘i’; Other pages (Arabic numerals).
Page number – bottom; centre.
- Chapter/ Section headings- Capitals; bold; centralised.
- Sub-headings- Initial capital; margin headings.
- Quotation- Single line spacing.
- Main text- Double line spacing.
- British spellings and punctuations are preferred.
- Binding- Gold inscription; bold letters along the spine of thesis from bottom to top (10-12mm letters) indicating Degree, Date and Name of author.

Research Methodology

Grace OLOUKOI, Ph.D

(oreofeadeniji@yahoo.com; oreofeadeniji91@gmail.com)

**Presentation made at the In-House Training for Graduate Supervisors at the International Conference Centre.
Lead City University, Ibadan
May 24, 2018.**

Research Problem.

- Identify the gap in the literature in terms of:
- The context: the same methods in different context eg. Climate vulnerability at regional level?
- The methods/approach: what are other ways of doing it?

e.g:

Qualitative methods: Humanities and social sciences

Quantitative: Life and Earth Sciences, Natural Sciences and Social Sciences

Methodological triangulation is the use of two or more different kinds of methods in a single line of inquiry

Defining the research problem and selecting appropriate methods

- What are the major patterns in the observations? (Refer to spatial and temporal variations)
- What are the relationships, trends and generalizations among the results?
- What are the exceptions to these patterns or generalizations?
- What are the likely causes (mechanisms) underlying these patterns resulting predictions?

Defining the problem from literature review

Author	Content & context	Data type	Observed gap(s)
Ajayi et al 2017	Legalization of abortion in Africa	Perception of medical doctors and lawyers	Too general, large scale>>> The gender perspective is not captured The adolescents is not represented Hence, the need for a study on adolescents' perception at a micro scale (e.g a LGA)

What belongs in the "methods" section of a scientific paper?

- Information to allow the reader to assess the believability of your results.
 - Information needed by another researcher to replicate your experiment.
 - Description of your materials, procedure, theory.
 - Calculations, technique, procedure, equipment, and calibration plots.
 - Limitations, assumptions, and range of validity (not by the supervisor or 'experts').
- Pilot survey is used in the social sciences**
- Description of your analytical methods, including reference to any specialized statistical software.

Methodology

- The methodology section must provide understanding of how each objective will be achieved
- What variables are concerned and what data types will be sourced?

The methods section should answering the following questions and caveats:

- Could one accurately replicate the study (for example, all of the optional and adjustable parameters on any sensors or instruments that were used to acquire the data)?
- Could another researcher accurately find and reoccupy the sampling stations or track lines?
- Is there enough information provided about any instruments used so that a functionally equivalent instrument could be used to repeat the experiment?
- If the data are in the public domain, could another researcher lay his or her hands on the identical data set?
- Could one replicate any laboratory analyses that were used?
- Could one replicate any statistical analyses?
- Could another researcher approximately replicate the key algorithms of any computer software?

Writing for an Audience??

- Researchers working in analogous field areas elsewhere in the world (i.e. other strike-slip faults, other deep sea fans).
- Researchers working in your field area, but with different techniques.
- Researchers working on the same interval of geologic time elsewhere in the world.
- All other researchers using the same technique you have used .
- If your study encompasses an active process, researchers working on the same process in the ancient record.
- Conversely, if your study is based on the rock record, people studying modern analogs.
- People writing a synthesis paper on important new developments in your field.
- People applying earth science to societal problems (i.e. earthquake hazard reduction, climate warming) who will try to understand your paper)
- Potential reviewers of your manuscript or your thesis committee.

Quantitative methods:

- Statistics is all about quantification
- A difficult subject???
- It is always seems **impossible** until its done

Statistics is all about quantification

- Data: measures of behavior, attributes, quality or numerical presentation of idea, events and phenomenon.
- Variable/parameters: an attribute of an object, event which varies from place to place or from time to time
- Constant: a characteristic that does not change or vary
- Observation: the value assigned to each item under investigation represented . E.g. X_i meaning X subscript i

Why do we use quantitative methods in social sciences

1. Providing understanding to trend and patterns of occurrence of event
2. Sampling
3. Test of hypothesis: providing explanation for answering research questions
4. Generalization of occurrence of a phenomenon
5. Dealing with uncertainties in social sciences
6. Application of scientific procedure for explanation of relationships between variables, studying the cause and effects among variables
7. Forecasting and prediction
8. To aid theorizing

Understanding common errors in the use of quantitative methods

- A **type I error** (
- A **type II error** (or **error of the second kind**)

Others include:

- ✓ error of context
- ✓ error of bias
- ✓ error of generalization
- ✓ inadequate sample size
- ✓ experimental error, missing values,
- ✓ human error (mis-recording, miscoding etc)

**Beware: Lying
with statistics???**

Qualitative methods

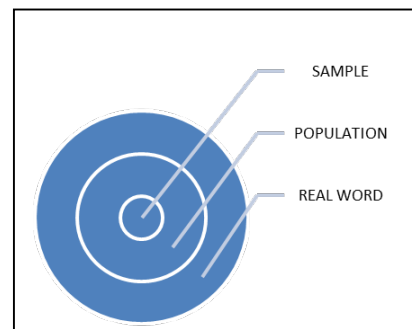
- A qualitative study seeks to learn why or how, so the writer's research must be directed at determining the what, why and how of the research topic. Therefore, when crafting a research question for a qualitative study, the writer will need to ask a why or how question about the topic.
- Categories:
 - ✓ Participant Observation
 - ✓ Direct observation
 - ✓ Unstructured Interviewing (KIIs/ Experts' opinion)
 - ✓ Case Studies
 - ✓ Focus Group Discussion

Quantitative methods: categories

- Correlational studies: A correlational study is non-experimental. The research question for a correlational study may look like this:
“What is the relationship between long distance commuters and eating disorders?”
- Experimental studies: An experimental study is experimental in that it requires the writer to manipulate and randomly select the subjects of the research. The research question for an experimental study may look like this:
“Does the consumption of fast food lead to eating disorders?”

Types of quantitative analysis

- **Inferential statistics:** this includes testing hypotheses and deriving estimates/making projections. Examples: Chi-Square, ANOVA, MANOVA, Factor Analysis, Student t test, correlation and Regression analysis etc. define **the Dependent (DV)** and **Independent variables (IV)**
- **Descriptive statistics:** “is designed to provide a picture of a situation as it naturally happens”. Use tables and charts
- it aims at summarize a sample, rather than use the data to learn about the population
- **Measures of central tendency include;**
 - mean, median, mode, standard deviation
 - (or variance),
 - the minimum and maximum values of the variables,
 - kurtosis and skewness.



Triangulation methods

- Triangulation is a method used by qualitative researchers to check and establish validity in their studies by analyzing a research question from multiple perspectives.
- The goal of triangulation is to arrive at consistency across data sources or approaches; in fact, such inconsistencies may be likely given the relative strengths of different approaches (Patton, 2002).

Types of triangulation are:

- Data triangulation: primary vs secondary data; qualitative vs quantitative
- Investigator triangulation
- Theory triangulation: (sustainable development vs economic growth models)
- Methodological triangulation (Remote sensing vs hydrological survey)
- Environmental triangulation (spatial comparison)