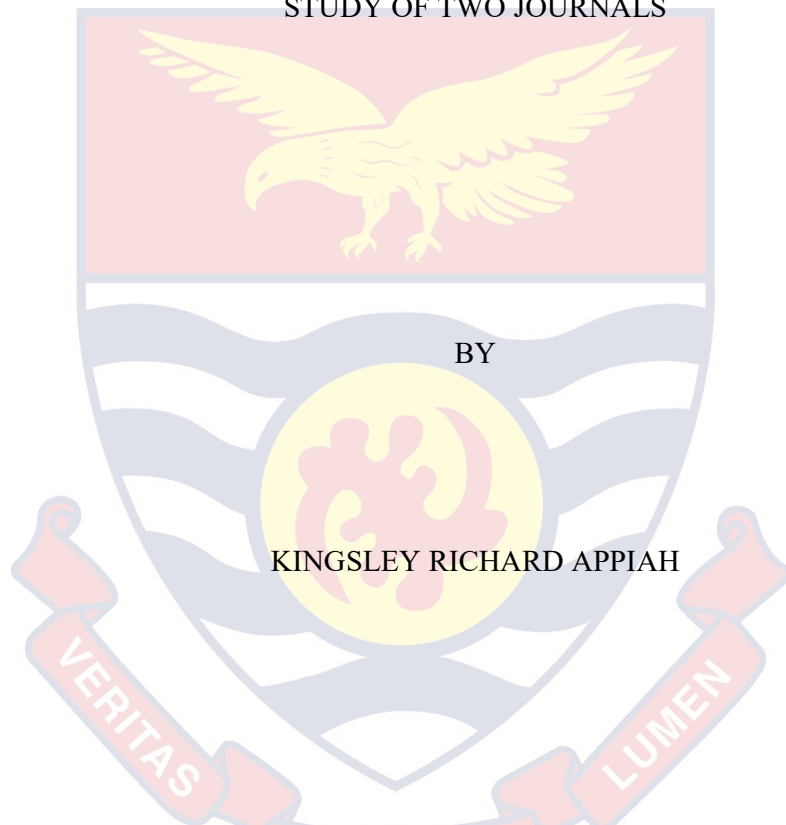


UNIVERSITY OF CAPE COAST

LENGTH, STYLE, AND STRUCTURAL ORGANISATION OF RESEARCH

ARTICLE TITLES: A DIACHRONIC AND CROSS-DISCIPLINARY

STUDY OF TWO JOURNALS



BY

KINGSLEY RICHARD APPIAH

Thesis submitted to the Department of English of the Faculty of Arts, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy Degree in English

March 2021

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature Date

Name: Kingsley Richard Appiah

Supervisors' Declaration

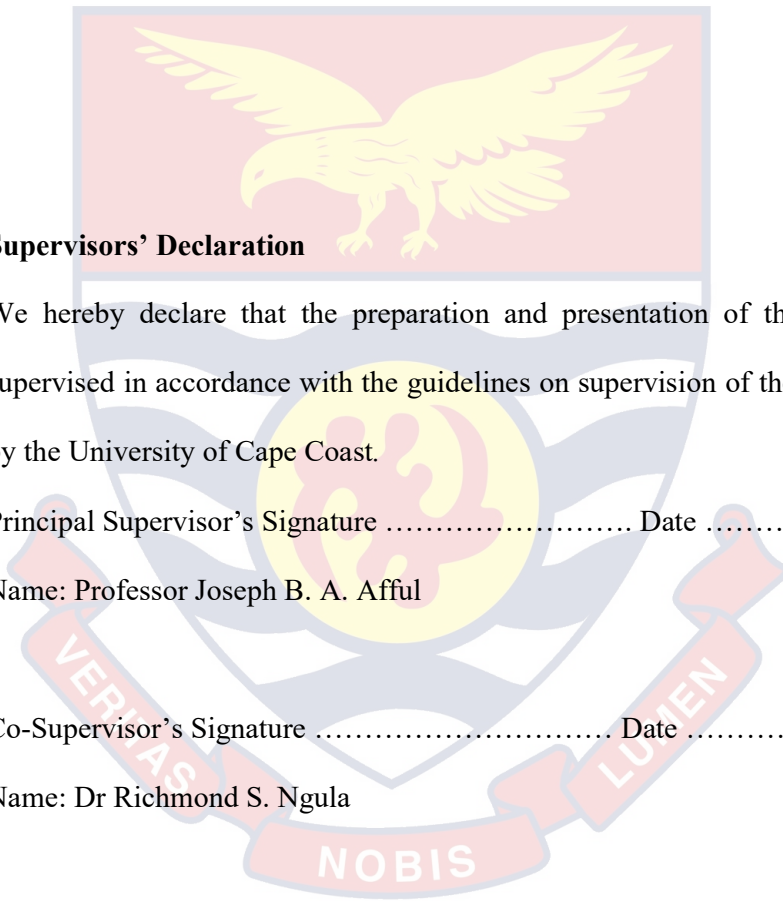
We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature Date

Name: Professor Joseph B. A. Afful

Co-Supervisor's Signature Date

Name: Dr Richmond S. Ngula



ABSTRACT

Crafting titles for research articles (RAs) in different disciplines is important as they can attract and inform the potential reader about the content of such academic pieces. Recent studies into RA titles have paid attention to various aspects such length, style, syntactic structures and lexicon of titles. Using *The Bible Translator* (TBT) and the *Journal of Drug Issues* (JDI) as examples of journals in Religion and Health Science respectively, the present study attempted to explore 2,953 titles of RAs published between 1971 and 2018, in order to establish a diachronic comparative analysis of the structural and stylistic patterns used in presenting titles. Following Dietz' (1995, cf Moattarian & Alibabae, 2015) taxonomy of analysing titles, this study focused on studying the length, styles, syntactic structures, and demarcating markers of the titles. This study revealed that title length increased over time in both journals. Among the three title styles identified, the Single-Unit Titles decreased, whereas the Double-Unit Title increased in both journals; the frequency of Multiple-Unit Title did not show any regular pattern in the two journals. The Noun Phrase (NP) was the dominant Single-Unit Title which generally decreased over time in its use in both journals. The most commonly found postmodifier, the Prepositional Phrase (PP), decreased in TBT and showed irregular decrease in the JDI. The Colon was the most frequent demarcating marker which increased over time in both journals; pointing to the 'colonization' in Research Article (RA) titles. This research has implications for academic writing, pedagogy, theory and further research.

KEY WORDS

Diachronic study

Title

Length

Style

Syntactic structures



ACKNOWLEDGEMENTS

This work would not have been successful without the guidance of my supervisors. I would therefore like to express my sincere gratitude to my supervisors, Prof. J. B. A. Afful and Dr. Richmond S. Ngula, both in the Department of English for their professional guidance, advice and encouragement. I am really very grateful.

I express my profound gratitude to, Dr. M. Traore, Dr. Isaac Nwimlaaru, and Dr. S. Sarfo-Kantanga all at the Department of English who in diverse ways have encourage me to finish my work on time.

I am again grateful to Mr. Christopher Ankomah, (PhD Candidate, Department of English, UCC), and Mr. Kwasi Opoku (PhD Candidate, Department of English, UG) for assisting in proof-reading the manuscripts at the various stages of writing. I am grateful to Mr. Gabriel Tetteh and Alex Ohemang, both at the Department of English for their support and encouragement.

Finally, I wish to thank my family and friends for their unwavering support, especially, my dear wife, Mrs. Judith T. Appiah; my children, Desmond Kweku Appiah, Evangeline Appiah, and Scholastica N. Appiah; and, finally, my mother Comfort Boateng, who saw the need to give out all she has to make sure that my siblings and I were well educated.

DEDICATION

To my wife Judith Appiah and my children; Desmond Kweku Appiah,

Evangeline Appiah and Scholastica Nyiraba Appiah



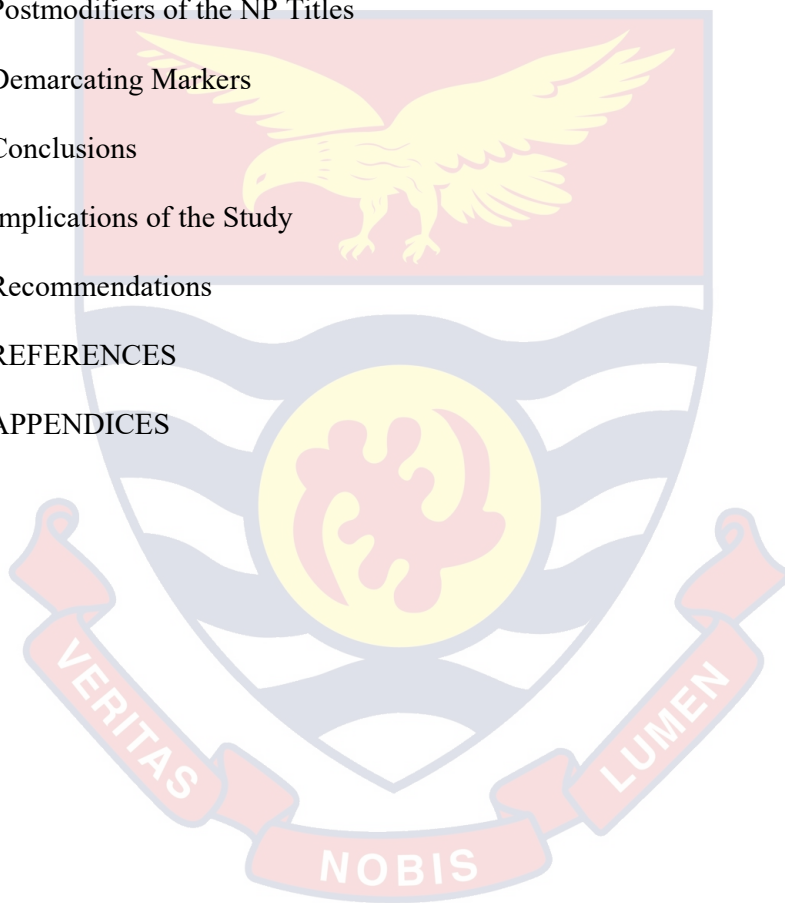
TABLE OF CONTENTS

CONTENTS	PAGES
DECLARATION	ii
ABSTRACT	iii
KEY WORDS	iv
ACKNOWLEDGEMENTS	v
DEDICATION	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	viii
LIST OF FIGURES	xiv
LIST OF ACRONYMS	xv
CHAPTER ONE: INTRODUCTION	
Background to the Study	1
Statement of the Problem	4
Purpose of the Study	5
Research Questions	6
Significance of the Study	6
Scope of the Study	8
Organisation of the Thesis	8
Chapter Summary	9
CHAPTER TWO: REVIEW OF LITERATURE	
Introduction	10
Conceptual Framework	10
Understanding the Title	10
Title Construction	12

Title Length	12
Title Style Classifications	14
Related Empirical Studies	20
Single Disciplinary Studies	21
Multidisciplinary or Comparative Studies	24
Diachronic Studies	28
Relationship between Previous Students and Present Study	33
Chapter Summary	34
CHAPTER THREE: METHODOLOGY	
Introduction	36
Research Design	36
Data	37
Background Information and Publication Policies of the Two Journals	38
Data Size	39
The Sampling Technique and Collection Procedure	41
The Analytical Framework	42
The Process of Data Analysis	43
Variables	44
Title Style	45
Syntactic Encoding of the Single-Unit Titles	46
Title Components of the Nominal Structures	46
Chapter Summary	46
CHAPTER FOUR: RESULTS AND DISCUSSION	
Introduction	48
<i>The Bible Translator (TBT)</i>	48

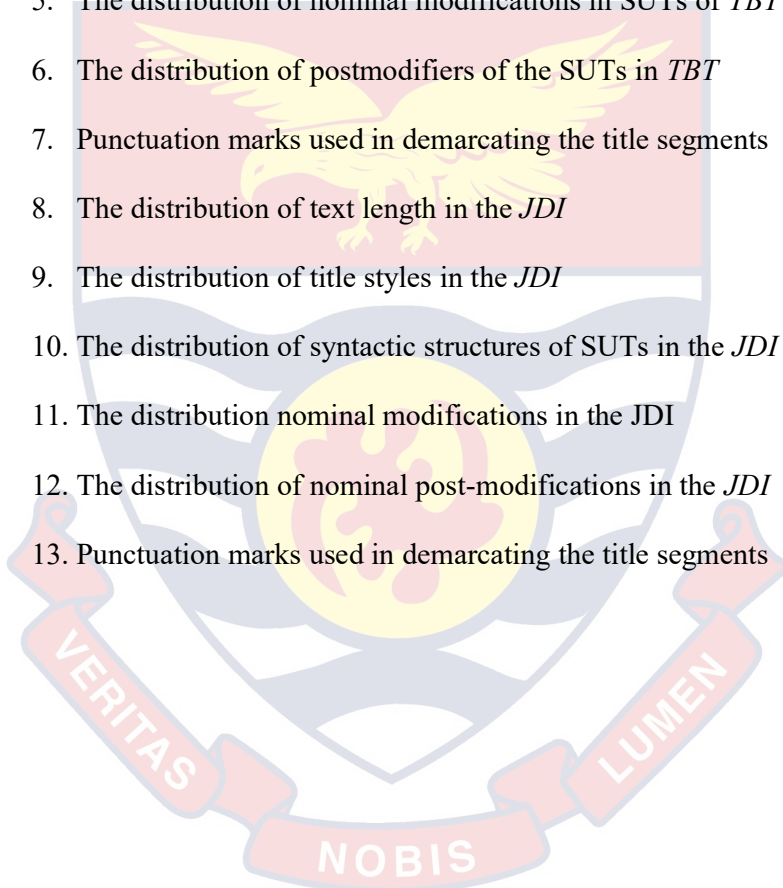
Title Length in the Bible Translator	48
Title Style	51
Syntactic structures of the single unit titles (SUTs)	55
Modification of the NP head in <i>The Bible Translator</i>	59
Postmodifiers of the NP Titles in <i>The Bible Translator</i>	61
Punctuations in <i>TBT</i> Titles	64
<i>Journal of Drug Issues (JDI)</i>	68
Title Length in <i>Journal of Drug Issues</i>	69
Title Style of <i>Journal of Drug Issues</i>	71
Syntactic structures of Single Unit Titles (SUT) in <i>JDI</i>	75
Modification of the NP head in the <i>Journal of Drug Issues</i>	79
Postmodifiers of the NP Titles in <i>Journal of Drug Issues</i>	82
Punctuation usage in <i>Journal of Drug Issues</i> Titles	85
Comparison of The Bible Translator and <i>Journal of Drug Issues</i> Titles	87
Title Length	87
Title Style	90
Syntactic Structures of the Single Unit Titles	90
Post-modifications and Postmodifiers of Nominal Structures	92
Demarcating Markers	93
Chapter Summary	94
CHAPTER FIVE: SUMMARY, CONCLUSION, AND RECOMMENDATIONS	
Introduction	95
Summary	95
Key Findings	96

<i>The Bible Translator (TBT)</i>	96
<i>Journal of Drug Issues (JDI)</i>	98
Text Length	99
Title Style	100
Syntactic Structures of the Single Unit Titles	100
Nominal Modifications	100
Postmodifiers of the NP Titles	101
Demarcating Markers	101
Conclusions	102
Implications of the Study	103
Recommendations	104
REFERENCES	105
APPENDICES	112



LIST OF TABLES

TABLE	PAGES
1. Details of data selected from the journals for the research	42
2. Text length of the titles of <i>The Bible Translator (TBT)</i>	49
3. Distribution of title styles used in <i>The Bible Translator</i>	53
4. Distribution of SUT syntactic structures in <i>TBT</i>	57
5. The distribution of nominal modifications in SUTs of <i>TBT</i>	60
6. The distribution of postmodifiers of the SUTs in <i>TBT</i>	63
7. Punctuation marks used in demarcating the title segments	66
8. The distribution of text length in the <i>JDI</i>	69
9. The distribution of title styles in the <i>JDI</i>	73
10. The distribution of syntactic structures of SUTs in the <i>JDI</i>	77
11. The distribution nominal modifications in the <i>JDI</i>	81
12. The distribution of nominal post-modifications in the <i>JDI</i>	84
13. Punctuation marks used in demarcating the title segments	86



LIST OF FIGURES

FIGURES	PAGES
1. Dietz' (1995) framework for analysing syntactic structures of titles	46



LIST OF ACRONYMS AND ABBREVIATIONS

ADC	Academic Discourse Community
AP	Adverb Phrase
AST	Astronomy
AW	Academic Writing
COPE	Committee on Publication Ethics
CP	Conference Papers
DISS	Dissertations
DS	Declarative sentence
DUT	Double-Unit Title
ECN	Economics
<i>JDI</i>	<i>Journal of Drug Issues</i>
JOURN	Journal Articles
MAT	Mathematics
MODIF	Modified
MUT	Multiple-Unit Title
NFC	Nonfinite Clause
NP	Noun Phrase
PP	Prepositional Phrase
PREMOD	Pre-modified
POSTMOD	Postmodified
PROC	Proceedings Papers
Q	Question
RA	Research Article
ROB	Robotics

SUT	Single-Unit Title
TBT	<i>The Bible Translator</i>
UMODIF	Unmodified /Not Modified
VP	Verb Phrase



CHAPTER ONE

INTRODUCTION

For about three decades now, academic genres have created a lot of spaces for researchers and scholars of applied linguistics to diversify scholarly research into different branches. The sub-field of titleology has produced a number of insights into the form and content of titles of research articles (RAs), dissertation, conference paper (CP), and textbooks. Research into diachronic and comparative studies of titles appear under researched. This research, therefore, made an attempt to investigate the macro-structure and the micro-structure of research article titles diachronically and cross-disciplinarily. The thesis begins with the introduction chapter which gives the general background, statement of the problem, research questions, and scope of the study, among other issues.

Background to the Study

One of the most prestigious written academic genres in the academic discourse community (ADC) is the RA which is expected to go through a rigorous and intensive peer-review process before its successful publication. This is because, as Moss (2003 p. 42) proffers, “a person’s academic worth equates with the number of papers they have ‘authored’” in modern times. This means that academics and researchers are “under pressure to publish” (p. 43). Generally, the article creates different part-genres such as the title, abstract, introduction, literature review, methodology, results and discussion, conclusion as well as the references. The body and content of RAs are largely hidden in online and publication space (Annesley, 2010), but Afful (2017) intimates that usually a paper is revealed by the persuasive device, *title*. Titles create unique identification for RAs relative to their contents. In other words, the RA is easily located and

identified by the title in a database during online search (Annesley, 2010; Day, 1998; Fischer & Zigmond, 2004; Liumbruno, Velati, Pasqualetti, & Franchini, 2013; Moss, 2003). Liumbruno *et al.*, (2013) suggest that the process of indexing the article using the title can greatly improve the visibility of the paper. Swales and Feak (1994) acknowledge that the RA is usually known through its title. Hall (2003) intimates that the research work must be read widely because it is very relevant to knowledge. However, Moss (2003) indicates that readers are not likely to read an article unless the title attracts them. Besides, the title “may be the only part of the paper that will be read” (p. 44) and therefore must urge the readers to continue to read the main paper.

Since the title plays a significant role in anticipating the content of the research piece, it is consequently described as a *key front rhetorical device* (Afful, 2017; Sahragard & Meihami, 2016). It is also considered as a “signpost” of RAs that throws light on what the article is about (Moss, 2003 p. 43). To Swales (1990), titles refer to front matter which summarises the content of manuscripts. In simple terms, the reason for describing the title as the front matter is because the title is found in the first part of the text, in the form of summary of the content that gets in contact with readers first before the content of the article. According to Liumbruno *et al.* (2013, p. 222), the title “should reflect the essence of the article; its novelty...” This situation draws and helps the potential readers to establish initial contact with the academic piece which is carried through the title (Alimoradi, Javadi, Mohammadpoorsl, Moulodi & Hajizadeh, 2016; Annesley, 2010; Bavdakar, 2016; Fox & Burns, 2015; Haggan, 2004; Peh & Ng, 2008; Tullu & Karande, 2017). The titles of RAs attract the attention of readers to identify the kind of content contained in the body of the work. In other words, the content of

the RA is seen through the title. This means that, in spite of the fact that the title is a very small component of the RA, it has a significant role to play in advertising the entire article (Cheng, Kuo & Kuo, 2012). Due to this, the way a title is presented is very relevant in making it effective in order to achieve its communicative purpose.

Hartley (2008) argues that a good and effective title should be able to stand out because it is competing with other titles for a wider readership. It, therefore, needs to catch the attention of the potential readers and to inform the readers about the specific content of the RA. A good title must reflect the content of an article in a condensed manner, remaining clear and relevant in order to catch the attention of prospective readers (Annesley, 2010; Bavdakar, 2016; Day, 1998; Peh & Ng, 2008). To Mishra, Chopra, Jauhuri and Mishra (2018), the title together with the abstract must perform two basic functions: convey the impression of the paper and the standard of the paper. It is through these two elements of the title that the reviewers obtain first-hand information about the manuscript. That means that the quality of the paper could be determined instantly by examining the title. Consequently, authors or title constructors find possible means to craft it in a suitable manner to convince their readers by way of attracting the attention of the readers. If the title is not well crafted, it can have a negative effect on its readership because, as Hall (2003) intimates, those who usually read the title of a RA are many; but those who read the entire paper are usually very few. This might result from the fact that the title is not interesting enough to them. This suggests that the skilful and effective construction of titles becomes a matter of concern to authors as to what structural configurations and lexical choices are the best options. This brings to the fore the essence of whether writers tend to

maintain the status quo of existing titles or modify the structure to suit modern trends. All these are done against the backdrop of the fact that titles are limited by space though they remain informative (Afful, 2017; Fischer & Zigmond, 2004; Moss, 2003; Peh & Ng, 2008).

Statement of the Problem

Trosborg (1984, p. ix) observes that “genres change with changes in society” and so genres evolve, or are evolving and will evolve. These changes, in relation to structure or style, are expected to occur when a particular genre is practiced or used for a long period of time. In specific setting, the structure of scientific paper titles keeps on changing over time (e.g., Fox & Burns, 2015; Whissell, 2012). Research article titles have been studied from different perspectives: diachronically (e.g., Fox & Burns, 2015; Hudson, 2016; Lewison & Hartley, 2005; Salager-Meyer *et al.*, 2017) or synchronically (e.g., Afful, 2017; Cheng *et al.*, 2012; Cook *et al.*, 2007; Gesuato, 2008; Habibzadeh & Yadollahie, 2010), in terms of title length, style, punctuation use, or the correlation of titles to the number of citations in a multidisciplinary study (e.g., Lewison & Hartley, 2005; Webster, Jonason, & Schember, 2009). The main problem this current research identifies in the empirical studies is the disparities in their findings. For example, while some studies indicate increase in title length over time (e.g., Hudson, 2016; Lewison & Hartley, 2005; Salager-Meyer *et al.*, 2017), others found that there was a decrease in title length across time (e.g., Milojević, 2017). Again, some studies reveal that colon use in titles has increased over time (e.g., Lewison & Hartley, 2005) while other findings indicate decrease in time (e.g., Hudson, 2016). In terms of title style, there is also an indication that the use of some title types, especially questions and multiple unit titles, have increased over

time (e.g., Ball, 2009; Fox & Burns, 2015; Milojević, 2017) but other studies show a decrease across time (e.g., Hudson, 2016; Milojević, 2017). It means that there is the need to do more studies into this field (titlelogy) in order to be certain of the best practices. Using two journals (from the disciplines of science and religion), this present study therefore attempts to examine titles diachronically to provide better comprehension of the emerging trends in the titles of RAs. One main problem faced by many researchers is their inability to know the length or structure of title that is suitable for a particular journal, since most journals are silent on title structures. Imbelloni (2012) notes that the title can contribute greatly to the 'Impact Factor' of a particular journal by the number of readers and citations; and, therefore, more attention should be given to the titles in its construction.

Purpose of the Study

The main purpose of this research is to confirm existing knowledge on diachronic changes that have occurred in title construction across two journals in the disciplines of science and religion. This research aimed at identifying possible diachronic changes or trends in the construction of titles because Trosborg (1984) contends that genres evolve and change over time. It is possible that titles in the two journals have experienced some considerable changes over time since authors tend to find good and novel ways of presenting their manuscript through the title of the paper. In simple terms, the study primarily examines how the features of research article titles have changed over time in the two journals. Specifically, the study aimed to examine the macro-structure and the micro-structure of the titles that have been constructed over the years in the two journals under consideration so that the recurrent typical structures can be identified. This study also aimed at

testing and refining (1995, cf Moattarian & Alibabae, 2015) taxonomy of analyzing titles.

Research Questions

Because the research aimed to investigate the diachronic trends of the length and structural organisations of titles, the research was set out to provide answers to the following research question:

1. How are RA titles organised in terms of text length, style, and punctuation use in *The Bible Translator* and the *Journal of Drug Issues* since 1971 to 2018?
2. What are the disciplinary variations and similarities between the titles of the two journals diachronically, in relation to text length, style, and punctuation?

Research question one was meant to identify the structural elements of titles diachronically in the two journals studied, paying specific attention to title length, title style, syntactic structures and demarcating marks. The second research question intended to compare and contrast the structural elements of titles published in the two journals between 1971 to 2018.

Significance of the Study

Since this research was intended to investigate the diachronic and cross-disciplinary analysis of titles of research articles (RAs) in *Journal of Drug Issues* and *The Bible Translator*, the findings could be beneficial to constructors of titles of RAs in the fields of religion and health science to be abreast with the trends of how far titles have travelled from the 1970s and the current patterns of titles preferred by researchers or readers. This is because “titles must be functional, should be direct, and need not to be dull” (Moss, 2003, p. 43). The findings of this research also offer opportunities for researchers and readers to explore more

on title writing. This is to say that it will serve as a guide to write effective titles because it is almost always the case that authors of RAs find better ways of writing acceptable titles to improve their readership. This suggests that people are required to publish more in these modern times because the number of academic publications measures how much they have contributed to knowledge in order to elevate them in the academic community (Moss, 2003). Ball (2009) also comments that we are in the era of mass production of RAs and as a result of that scholars and researchers are producing more RAs which must not only inform but also attract the readers. These articles compete for attention.

Moreover, a carefully constructed title draws the attention of readers because titles are meant to persuade their potential readers (Day, 1998). In relation to academic writing (AW) and pedagogy, this research will be useful in contributing to the improvement of relevant knowledge required in teaching and learning of article writing and publications in the fields of religion and health science and possibly other fields of knowledge. Students and novice writers will need special and additional skills which can be derived from the findings of this research to present standard and approved titles for their theses and RAs. They need to be furnished with current empirical and experimental knowledge of title construction in various fields in order to be more appealing to potential readers in the content of journals or in online databases. This is because, as Moss (2003) indicates, additional skills are required in order to write an effective paper (including its title) for it to get published in a reputable journal. The findings are also expected to serve as a form of literature to assist further research in the same area or different discipline to confirm or disconfirm the results of this research.

Scope of the Study

This thesis examines how the text length, style, syntactic features, and punctuation of RA titles have emerged over the years. Although Liunbruno *et al.* (2013) indicate that scientific journals began in 1665, the current research focused on studying data sets from the *Journal of Drug Issues* and *The Bible Translation* from the period of 1971 to 2018. These two journals are in the domains of drugs and religion. I wanted to confirm Swales and Feak's (1994, p. 206) claim that science titles, especially, "are becoming longer and looking more and more like full sentences", by comparing titles in *The Bible Translator* (a journal in religion). This choice for selecting the two journals was also due to the availability of data set online for at least five decades to monitor title trends across the two journals. Again, these journals are reputable journals in their respective disciplines. The study was also delimited to text length, style, syntactic structures of the titles, and punctuation marks used in demarcating segments of the titles with more than one focus. This meant that there were other angles from which researchers have studied titles; such areas were not part of the focus of this current research. For instance, there are other perspectives on the relationship between titles and the number of citations in a mono or multidisciplinary study (e.g., see Lewison & Hartley, 2005; Webster, et al., 2009), informativity of the titles (e.g., see Gesuato, 2008; Afful & Mwinlaaru, 2010) or lexical density (e.g., Afful, 2017; Alcaraz & Mendez, 2016).

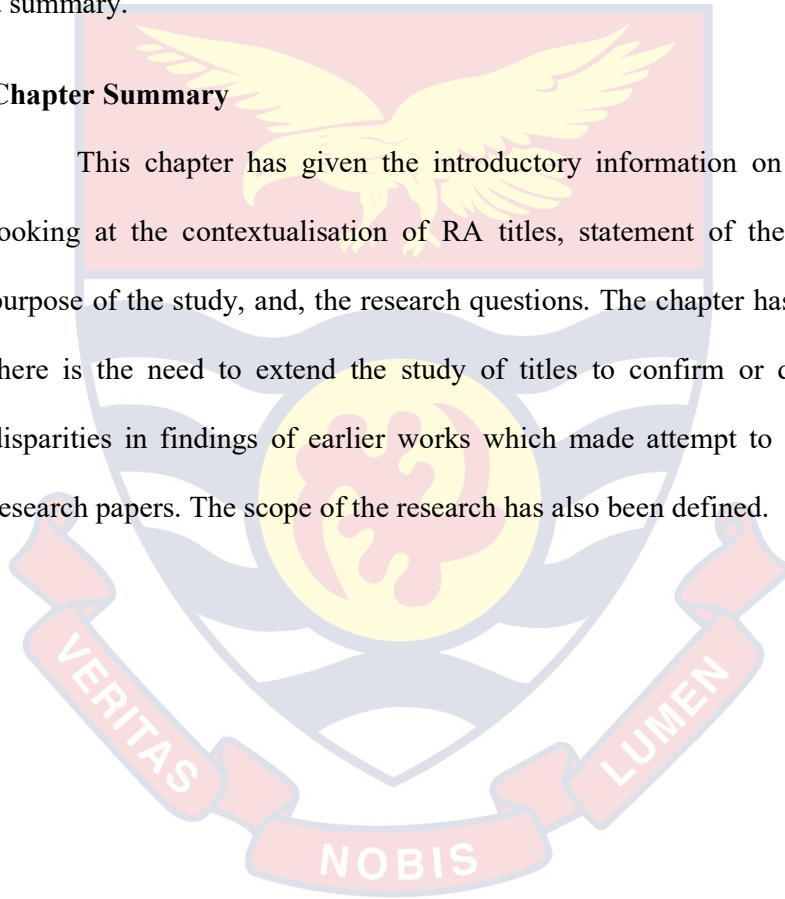
Organization of the Thesis

This thesis is organized into five chapters. The first chapter provided the introduction of the research, including the background of the research, statement of the problem, purpose of the study, research questions, significance of the study,

and scope of the study. Review of literature on relevant issues and empirical studies are also organized as Chapter Two. Chapter Three encompasses the methodological issues relating to the research design, data, the data collection procedure, the sample size and the method of data analysis. Chapter Four presents the results and discussion of the data analysed. Chapter Five is meant to present the summary, conclusion and recommendations of the thesis. Each one ends with a summary.

Chapter Summary

This chapter has given the introductory information on the thesis by looking at the contextualisation of RA titles, statement of the problem, the purpose of the study, and, the research questions. The chapter has revealed that there is the need to extend the study of titles to confirm or disconfirm the disparities in findings of earlier works which made attempt to study titles of research papers. The scope of the research has also been defined.



CHAPTER TWO

REVIEW OF LITERATURE

Introduction

In order to appreciate what this research contributes to existing knowledge, this chapter is devoted to reviewing literature on titleology. The chapter mainly focuses on literature on RA title, its length, syntactic structure and style as well as title types. Most relevant to the focus of this research in this chapter is the assessment of studies that have investigated titles diachronically or comparatively. In simple terms, this chapter was aimed at revealing the findings of title research to establish the state of knowledge on the various aspects of studies in titleology.

Conceptual Review

This part is about the conceptualisation of titles and title construction. It discusses the concept and function of the title, title length, common linguistic choices in titles, information content, and classification of title styles.

Understanding the Title

“Titleology” is an area of studying titles and, at the same time, a term which can be originally traced back to the French word *titrologie*, introduced by Duchet around 1973 (Roy, 2008, as cited in Sahragard & Meihami, 2016). The title has been conceptualized by various scholars as a kind of special academic publication text with specific communicative purpose (e.g., Fox & Burns, 2015; Haggan, 2004) and with specific generic structure. The typical communicative purpose of the title is summarised by Gesuato (2008, p. 127): “the title of an academic publication names, introduces, metonymically represents and advertises the content it labels, circulating from one text to the next”.

Based on this assertion, three fundamental elements are crucial in noting the functions of the title. These elements include *label*, *representation* and *advertisement*. The first primary goal of the title is to catch the attention of potential readers (Annesley, 2010; Cheng *et al.*, 2012; Day, 1998; Peh & Ng, 2008). The title is supposed to serve as a label to describe the content of a research paper in an attractive manner because it represents the paper (Imbelloni, 2012; Sahragard & Meihami, 2016). This suggests that the title is supposed to give a good first impression of the content of a paper and to draw the attention of potential readers to encourage them to read it. Due to its communicative function, Jamali and Nikzad (2011) argue that the title is the most crucial part of a research paper because it is through the title that readers get to know the entire paper. By this, the title provides a kind of identity to the paper it is representing (Moss, 2003; Swales & Feak, 1994).

On the contrary, “a poorly chosen article title may make a paper difficult to discover or discourage readership” (Fox & Burns, 2015, p. 190). What it means is that the title should be planned well in order to attract more readers. In this case, the internal elements of the title and its organization should be an important consideration in writing it. This is why Gesuato (2008, p. 152) views titles as “cohesive and coherent self-contained discourse units, which are meant to satisfy a specific communication purpose”. Moreover, Goodman (2001) points out that titles help to improve our understanding of effective and current practices of authors so as to guide title practices. Titles also provide an opportunity for indexing information search in a database (Day, 1998; Fischer & Zigmond, 2004; Liumbruno, *et al.*, 2013; Moss, 2003).

It must not be forgotten that the title occurs in the academic space in competing for readership (Hartley, 2008). It is the title that saves the time of scholars because it determines whether or not to read the main text. Imbelloni (2012) asserts that people do not have time to read the entire text because time is very precious to them and it is the function of the title to announce the content of the paper for them to decide whether to read it or not. Imbelloni notes that the title can contribute greatly to the ‘Impact Factor’ of a particular journal by the number of readers and citations; and, therefore, more attention should be given to the titles in its construction.

Title Construction

This subsection pays attention to title construction—what constitutes an effective title in terms of length, linguistic choices and content. In this subsection, varied and common views are shared because title construction is viewed from different perspectives (Mack, 2018). It means that there is difficulty in finding a universally acceptable way of defining a good title; however, there are some basic guidelines.

Title length

In respect of the length of titles, the ideal number of words or characters that typically represents a good title often remains unclear (e.g., see Annesley, 2010; Peh & Ng, 2008). The main challenge lies between what constitutes enough description of the content, bearing in mind brevity (Mack, 2018). According to Swales and Feak (1994), the length of RA titles is discipline specific. The general and common expressions used in describing a good title include its precision, shortness and informativity. For instance, Imbelloni (2012, p. 139) states that “the title should be simple, concise, clear, short, and impacting”. Liumbruno *et al.*

(2013) also posit that a good title must reflect its clarity, specificity and brevity as it carries the essence of the content of the research article or paper. Again, Day (1998, p. 5) asserts that effective and appropriate title should be considered as the one that has "...the fewest possible words that adequately describe the contents of the paper". Mack (2018, p. 47) further indicates that "the title should be as specific as possible while still describing the full range of the work". It can be deduced from the various assertions that there is no specific number of words that constitute to effective title.

It remains unclear as to what constitutes 'fewest possible words'. This means that an acceptable title is relative. However, there is a recommendation for appropriate title length of between 5-10 words (Fischer & Zigmond, 2004). According to Kotzé (2007), the typical title length of academic journals ranges from 8 to 15 words. Peh and Ng (2008) stress that a title of about three or four words is not enough to specify the content of the paper accurately. It has been posited that short titles can be easy to understand; they might increase the influence of a paper by receiving more citations (Letchford, Moat & Preis, 2015). These qualities help to address part of the expectation of the features of a good title and the purpose of an effective title.

Swales and Feak (1994, p. 206) claim that science titles, especially, "are becoming longer and looking more and more like full sentences" while "in others, the preferred style is for short titles containing mostly nouns and prepositions". Hudson (2016) contends that long titles can improve the information content of a paper to some extent but can also deter people from reading it. It can also lead to loss of concentration of the information it captures from the main text. This means that a long title might not improve the general readability of the title. By

introspection, Fischer and Zigmond (2004) assert that, generally, between 5 – 10 words is the recommended text length of a good title. However, what is considered the appropriate text length of a title is always uncertain and remains debatable (Bavdakar, 2016). Kang and Yu (2011) indicate that the text length of a title in a particular genre normally determines its uniqueness by identifying the genre as a different text. Day (1998) suggests that exercising great care in the selection of words should be the hallmark of choosing what should be part of titles in their constructions and presentations.

Title style classifications

Title styles have been classified from different perspectives. Title classification is conceived from how the entire structure is presented: either in single component or multiple components. The two most common styles identified in the literature include the single-unit title and the multiple/compound unit title (e.g., Afful, 2017; Afful & Mwinlaaru, 2010; Moattarian & Alibabae, 2015; Nagano, 2015). The single-unit or 1-unit titles are those titles which are presented in one component. The compound or 2-unit titles are the ones presented in two or more components, which are normally separated by the use of punctuation marks like the colon, dash or question marks (see Gesuato, 2008). It is generally claimed that the preference for any of the title styles is discipline specific (Haggan, 2004; Moattarian & Alibabae, 2015). Regarding multiple-unit titles, the punctuation marks are often employed in segmenting the titles. For instance, titles separated by colon are usually know as ‘colonic’ titles. It is generally noted that ‘colonic’ titles are the most frequently used title in research (e.g., Fumani, Goltaji & Parto, 2015; Hudson, 2016).

Other authors categorise title styles or types into descriptive, declarative, nominal, verbal, questions, indicative, or informative titles (e.g., Bavdakar, 2016; Cook, Beckman & Bordage, 2007; Jamali & Nikzad, 2011). Apart from indicative and informative titles, the rest of the title structures seem to be based on the syntactic structures. Three central types of titles commonly discussed are declarative, descriptive and question (e.g., Gesuato, 2008; Jamali & Nikzad, 2011). Declarative titles, also known as informative titles, state the conclusion of the study. Descriptive titles (also neutral titles) describe the general subject of the paper; while interrogative titles indicate the subject of the study in a question form. Cook *et al.* (2007) explain that indicative titles point out what was done in the study while informative titles communicate the outcomes of the study. Mack (2018), however, believes that informative titles rarely exist; and, therefore, a good title should rather focus on the aim of the study and not the results. Day (1998) and Gustavii (2008) posit that titles that are constructed in the question form are usually not intelligible and that authors should avoid them in presenting their RAs. Gustavii explains that question type of titles usually puts readers in suspense but they prefer getting to know the outcome of the study right from the beginning of the paper. Due to this, the declarative title type is preferable. In Gustavii's view, it is better to make declarative titles more dynamic by using verbs instead of nouns that are in the abstract form.

The third view of title classification is the combination of the first group and the second group. In other words, the kind of components in which titles are presented and the classified based on syntactic structures are usually combined. In such classifications, we see titles being grouped as compound, nominal, simple, full-sentence, question, verbal, or prepositional phrase (e.g., Alcaraz &

Mendez, 2016; Cheng *et al.*, 2012; Haggan, 2004). In the same style of combining title classification, some authors consider presenting title styles from the broad perspective of the two-unit titles and move on to discuss the structural types of the single unit titles (e.g., Afful, 2017). In such instance, the single unit titles are grouped as nominal, verbal, prepositional phrase or others.

Crafting an Effective Title

Although titles are grouped according to styles, what is important is creating an effective title. The effectiveness of titles is carried through careful selection of lexical items which serve as the building blocks of the title. The association of the words in the title should be of great concern to the author (Day, 1998; Imbelloni, 2012). Imbelloni (2012) intimates that the excessive information in our contemporary era makes people selective about what to read and, therefore, it is imperative for authors to improve on choosing the right words to constitute interesting and attractive titles. Webster *et al.*, (2009, p. 350) argue that “title words provide a fairly reliable indicator of an article’s main subject matter”. Different scholars share varied views and positions on what a title should contain in order to convey its informativity to its potential readers. Different opinions have been expressed on what to include and what to exclude in the construction of effective titles. In the view of Hudson (2016), writing an effective RA title should be guided by two relevant information: information content and attractiveness. Writing the title of a paper this way can maximize the impact on its readers.

Most writing guides, especially in the field of science, indicate that titles should provide the right key words to reflect the content of an article for assisting electronic indexing and easy search of the article or paper (e.g., see Bavdakar,

2016; Day, 1998; Gustavii, 2008; Liumbruno *et al.*, 2013). So, in writing effective and good titles, Moss (2003, p. 44) offers five tips:

1. Describe your paper in two or three sentences.
2. Precis these sentences: remove unnecessary occurrence of “as”, and “the” as well as any references to the results.
3. Now write a draft title.
4. Review this. Perhaps try the technique of “a title in two parts”. For example, give the main subject and the type of the study.
5. Check:
 - Is it accurate?
 - Is it in any way misleading?
 - Does it contain essential key words?
 - Is it interesting?

What Moss (2003) offers is a guide to crafting an acceptable and concise title. Beside the five tips proposed by Moss (2003), there some elements that general make titles effective if authors follow such guides (e.g., Bavdakar, 2016; Day, 1998; Gustavii, 2008; Liumbruno *et al.*, 2013). The general information these guides offer are often on dos and don'ts in title writing. These academic writing guides generally argue that authors should avoid the following expressions in order to present better and effective titles to communicate their intended purpose of their respective papers to potential readers and for publication in high standard journals. The expressions to exclude are:

1. Research-based words or expressions, as in examples include “investigation of”, “study of” or “observation on”.
2. The articles “a”, “an” and “the”.

3. Abbreviations and jargons.
4. Numerical values and scientific formulae.

One of the assigned reasons for excluding research-based words and grammatical articles stems from redundancy. This means that titles containing such words and expressions are generally long. In Day's (1998) view, these words are wasteful and needless. However, relatively short titles which contain the content information of the RA or paper are well celebrated. To those scholars, such words and expressions do not take away anything significant from the titles because the titles can still make meaning if these redundant words are excluded. However, these suggestions are defied by some RA titles with the prevalent use of grammatical articles in their titles (e.g., see Alcaraz & Mendez, 2016; Fortanet *et al.*, 1997, 1998).

Moreover, the second point for excluding abbreviations, jargons, numerical values, and scientific formulae is based on the fact that these expressions might be unknown to readers and at the same time obscure the meaning of the titles (e.g., Liunbruno *et al.*, 2013; Mack, 2018). Liunbruno *et al.* (2013) claim that unimportant expressions might make the titles unintelligible. They can deter readers from going ahead to read the main manuscript; thereby, defeating its intended purpose. Mack (2018) shares the same view, by adding that a title style containing pun can equally cause confusion.

Contrastively, there are other scholars who argue that it is relevant to indicate the type of study in the title to help readers make an informed decision about the paper (e.g., Grant, 2013; Mack, 2018; Moss, 2003). To Mack, it is generally appropriate that a study's title contains the aim and the approach used for the work. Tullu and Karande (2017) point out that some journals require that

scholars who intend to publish in them add the study design in the titles. This requirement might provide an easy way for editors and reviewers to make quick decisions about papers. Imbelloni (2012) argues that, generally, the title should also indicate the conclusion of the study and the problem. Mack (2018), however, disagrees with such assertions and points out that titles that indicate the results or the conclusions are rare in scientific writing. Moss (2003), for instance, posits that the two most crucial elements of an effective title are presented through the central topic and the type of study.

In terms of preference for research-specific and domain-specific expressions in title writing, Alcaraz and Mendez (2016) found out that scientific titles contained prevalent use of domain-specific words, such as *stars*, *planets*, *galaxies* or *satellites*. All these words belong to the discipline of astrophysics. Fischer and Zigmond (2004) argue that the title should contain relevant and enough keywords of the content of the paper in order to present its focus to readers to be able to search and read the paper with ease.

Some authors also offer another but overlapping perspective of crafting a good and an effective title (e.g., Annesley, 2010; Swales & Feak, 1994). They suggest that authors must have the following points in mind in the process of writing titles. This view seems to combine different skills or approaches, as can be seen below. It directs the writer on what to do:

1. Be concise in such a way that the number of words used should be able to describe the content of the manuscript in an appealing manner.
2. Avoid wasted words like *investigation of*, *a study of*, *development of*, or *observation on*, as well as many adjectives like *new*, *novel*, *validated* or *improved*.

3. Be clear by being mindful of word order to avoid ambiguity in the title.
4. Be informative by choosing key words and terms wisely to reflect the content.

Scanning through the table of contents of journals should be able to help readers pick what they are looking for in the articles.

5. Avoid non-standard abbreviations to prevent readers from losing contact with the research paper.

Annesley (2010) adds that the title of a paper should be the last element to be written in order to craft it to attract potential readers and, at the same time, reflect the themes of the manuscript. Titles enhance a paper's chances of communicating its purpose to the target readers (Dedhia *et al.*, 2017). Webster *et al.*, (2009, p. 350) argue that "title words provide a fairly reliable indicator of an article's main subject matter". In many academic writing books and authors' guidelines in the digital environment, the ideal titles are vaguely described. Common expressions used in describing such titles include *concise, accurate, informative, short, attractive, in a few words, succinct, specific, brief, clear, or simple* (Branson, 2004; Dedhia *et al.*, 2017; Imbelloni, 2012; Liunbruno *et al.*, 2013; Peh & Ng, 2008; Shankar, 2012).

Related Empirical Studies

Empirical studies that are reviewed in this section have been categorised under three sub-sections: single disciplinary studies, multiple/comparative studies, and diachronic studies. The essence of reviewing the empirical studies in this work is to provide the current state of academic title research so that the present research can make a considerable contribution to what is already in the literature. It is also relevant to note that the available literature provides reference

points for the present research by way of confirming the new findings and contrasting them to know what is new or existed already.

Single Disciplinary Studies

This section reviews empirical studies on research works that have investigated RA titles from a specific discipline. Those papers that have studied titles synchronically are reviewed under this section but those with diachronic focus are reviewed in a sub-section later under diachronic studies.

Cook *et al.* (2007) studied 105 RA titles published in different journals related to medical science, particularly medical education. The paper investigated the quality elements of abstracts and titles of experimental studies in medical education. Two main title types were identified: indicative titles and informative titles. The study revealed that the indicative titles which describe what the research is about were highly preferred (82%). The informative titles which express the general results of the study occurred infrequently (2%), while titles that indicated the two foci of the first two types recorded 10%. Six percent of the titles neither belonged to indicative nor informative titles. In the end, the study suggested that titles of medical RAs missed relevant elements of conveying information to the readers.

Gesuato (2008) examined title length, lexical density, syntactic organisation and syntactic encoding of 1,000 titles of English publications in of linguistics, which were published between 1970 and 2008. The corpus represented four different genres or publication types such as books (BOOK), dissertations (DISS), journal articles (JOURN) and proceedings papers (PROC). Across the title genres, the average title length was found to be 10.7 words. The highest occurrence of average text length was recorded in DISS (12.9 words),

followed by JOURN (10.8 words), PROC (9.9 words) and BOOK recording the least with 9.2 words. The result for the journal article titles is similar to Afful's (2017) finding of 10.4 words. Closer to Afful's (2017) words of 69.5%, the lexical density was revealed as 68.6% across the title genres. In terms of syntactic organisation, four different title units were identified: 1-unit title, 2-unit title, 3-unit title and 4-unit title. In all, 1-unit title (50.2%) and 2-unit title (49.1) were observed as the highest occurring title styles used. The two appeared to be evenly distributed. With specific reference to journal article titles, the 1-unit titles (57.6%) were pervasive than the 2-unit titles (41.6%). The 3-unit title styles recorded less than 1%.

In the single unit titles, the syntactic encoding emphasised organisation of the titles into noun phrases, verb phrases, prepositional phrases, adjectival phrases, clauses or unclear structures. The noun phrase appeared as the most preferred structure across all the genres studied, recording more than 82% in each case. The average frequency was around 85%, with journal article titles recording 83.5%. Different structural combinations of the encodings were also observed in the 2-unit titles. Generally, the NP/NP combination alone recorded 71.89% out of other combinations: AP/NP, NP/AP, NP/PP, NP/VP, NP/Clause, PP/PP, PP/NP, PP/VP, VP/VP, VP/NP, VP/PP, VP/Clause, Clause/Clause, Clause/NP and Clause/VP. The RA titles recorded 71.15%. Again, the study identified five highly frequent sequencing patterns of the 2-unit titles as general-specific (212), topic-method (63), topic-context/topic-method+ context (40), and specific-general (33). Although this study and my research have different focuses in terms of being synchronic and diachronic respectively, the variables studied in Gesuato (2008) are similar to those in the present study.

In the exploration of whether or not shorter titles are more attractive and of high impact factor, Habibzadeh and Yadollahie (2010) studied 9,031 titles of scientific medical articles from 22 English language journals which were published in 2005. The study revealed that longer titles appeared to have higher correlation with higher citation rates than shorter titles. The authors posited that because the long titles were those which contain the study design or the methodology and/ or the details of the results, they attracted more attention and citations than those which were described shorter titles. This finding is not at variance with what Fox and Burns (2015) found: that only intermediate title length was significant in making impact on citation. Habibzadeh and Yadollahie, therefore, suggested that editors allowing some flexibility in the choice of length of titles could be more useful in improving the impact of citations and not to restrict authors to be very brief and concise.

In the study of 796 titles of RAs in applied linguistics by Cheng, Kuo and Kuo (2012), five syntactic structures were identified: compound, nominal, full-sentence, V-ing phrase and the prepositional phrase. Unlike other studies (e.g., Afful, 2017; Gesuato, 2008), this study revealed that compound titles (53.89%) constituted more than half of all the titles, followed by the nominal structures (39.20%). The other structures accounted for only small percentage (less than 10%). This study also differed from Afful's (2017) study which found single-title unit as dominant. With respect to the nominal titles, discipline-specific and non-discipline-specific words were extensively used.

In a recent study, Afful (2017) gives an empirical report of a study on the titles of conference papers in applied linguistics, which was held in Germany in 2008. After a thorough analysis of 698 titles, it was found that the average text

length of the title was 10.4 words which was also within the same region of what Gesuato (2008) found as 10.8 words for article titles. Two basic title styles were identified: single unit titles and multiple unit titles. The single unit title was highly frequent than the multiple unit titles in the conference papers. In the single unit titles, the nominal structure occurred as the highly pervasive as the ing-clause and others. The titles recorded a lexical density of 69.5%, which is closer to Gesuato's (2008) finding of 68.6%. The study revealed four different combinations of lexical items of the titles as domain-specific, research-related, verbal expressions, and country/local references.

In a study conducted by Letchford, Moat and Preis (2015), 20000 science RAs which were published in journals with very high impact and were cited mostly from 2007 – 2013 were studied from the field of science. The study assessed the effect of title length on article citations. Contrary to Habibzadeh and Yadollahie (2010), this study found that RAs which had shorter titles published in journals were more cited than longer titles. The study concluded that it was possibly due to the fact that short titles offer better understanding than long titles; thereby receiving large readership.

Multidisciplinary and Comparative Studies

This section focuses on empirical studies that are multidisciplinary and comparative in nature.

Anthony (2001) conducted a study of RA titles in the six sub-disciplines of computer science. The study investigated title length, punctuation usage, and words frequency. The study revealed significant variation across the sub-disciplines in terms of average text length, which were between 8.0 words and 9.9 words. This finding differed marginally from those found in a similar study

(with average of 7.9 words) in computer science by Fortanet *et al.* (1997). Regarding punctuation usage in RA titles, colonic titles (also termed hanging titles) appeared more frequent than those that employed dash and question mark, although considerable usage variations occurred in all the journals. These punctuation marks were used to establish the relationship between Name: Description, Description: Name, Topic: Description, Topic: Scope, and finally Topic: Method. The 'Name: Description' structure occurred most frequently among the rest across the sub-disciplines. Prepositions and articles dominated the occurrence of words across all the disciplines. The preposition with highest frequency was 'for' in four journals, which was commonly used to express the relations that existed between a newly discovered technique and its context of use. 'Of' which occurred as the second highest word was also used to describe the focus of the article.

Similarly, Jamali and Nikzad (2011) assessed the impact of characteristics of titles on downloads and citation in the discipline of science, focusing on three types of titles: declarative, descriptive and interrogative titles. A very large data of 2,172 RAs published in 2007 was selected from biology, medicine, computational biology, genetics and pathology. The results indicated that question titles recorded more frequent downloads than the declarative and descriptive titles. Question titles, however, received less citations compared to the other two. It means that through the question titles are enticing but many authors do not cite them; it is also preferred because of its ability to arouse peoples' interest to read (Ball, 2009). It was also found out that description titles received more downloads and citations than the declarative titles, despite the fact that the difference was marginal. Articles with shorter titles were also found to be

marginally downloaded than those with longer titles. The study concluded, generally, that the features of titles studied demonstrated higher effect on the level of downloads than the way other works or papers cited them.

Moattarian and Alibabae (2015) conducted a comparative study of the syntactic structures of RA titles of three disciplines: applied linguistics, civil engineering and dentistry. The variables which were studied included title length, title style and structural constituents of the titles. After studying the 420 titles, it was found that civil engineering titles were longer (13.54) than the titles in applied linguistics (12.88) and dentistry (10.38), in terms of average text length. These findings were similar to Anthony's (2001) average text length variation. The title length was considered to be a disciplinary matter. The two title styles which were identified were single-unit and multiple-unit titles. The single unit titles were found to be the most recurrent title style across the three disciplines. The two science related fields recorded frequent use of the single unit titles than applied linguistics. Apart from these, the constituent elements of the multiple unit titles were identified to constitute three categories: 'topic: scope', 'topic: method' and 'topic: description'. 'Topic: description' was the most pervasive structure of the multiple unit title. The nominal construction occurred most frequently, followed by the verbal, and then prepositional phrase across the three disciplines. The nominal structure which was information packed was predominantly post-modified, and 95.71% of the post-modifier were prepositional phrases.

Alcaraz and Mendez (2016) focused on such variables as title length, lexical density, and type of 658 titles of research papers in astrophysics which were published in specialised European and US-based journals and *Scientific American Magazine*. After comparing the titles of specialised scientific journals

and *Scientific American Magazine*, the length of the titles on average was found to be longer in the specialised journals (13.76 words) than the scientific popular titles (4.27 words). This is explained by Lewison and Hartley (2005) that there may be variation in the length and structure of titles of different scientific fields. It was also revealed that the lexical density was higher in scientific journal titles than the popular science titles published in the magazine. The titles in *Scientific American Magazine* were clearer and less complex syntactically than the titles published in the scientific journals.

The title types which were identified included simple, compound, nominal, verbal, interrogative, and exclamatory. The dominant titles were simple and nominal types of titles. The popular scientific titles looked clearer and simpler syntactically than those published in the specialised journals. However, compound titles were common in those published in the specialised journal than those published in the American magazine. Colon, full stop, and question marks were the most frequently used punctuation marks in conjoining the segments of the compound unit titles, with the colon leading in each case. The colon occurred more frequently in the journals than the magazine.

To sum up, we can see that the empirical studies on the multiple or comparative studies show more interest in text length and structural components, unlike those in the single disciplinary studies. The average text length is between 4.27 words and 13.76 words per title. The single unit title or the nominal structures were found to be more common than the compound unit titles, except Alcaraz and Mendez (2016). The colonic titles were also found to be the commonest in constructing multiple unit titles. It can also be said that, in nominal structures, the heads were post-modified frequently than the other modifications.

The prepositional phrases were found to be the most common structures for postmodifying the single unit structures. These findings will help guide my interpretation and discussion of my findings in this thesis

Diachronic Studies

The empirical studies that are reviewed here are those that have investigated titles of RAs or papers diachronically. It also means that both mono-disciplinary/discipline specific studies and comparative historical studies of titles are included under this section.

Lewisson and Hartley (2005) studied title length, colon usage and number of authors of a paper diachronically. The main purpose of the paper was to examine how these variables and structures might change over time in different fields of science. They studied 216,500 UK papers from science journals and 133,200 international oncology papers. After statistical analysis, all the factors related to the titles were found to increase over time, despite the fact that disciplinary variation existed. The increase in colonic titles over time was similar to Hudson's (2016) finding. Colonic titles were found to be the most common in single authored paper than papers authored by multiple authors.

In Ball's (2009) study of nearly 20 million titles of scientific articles, attention was paid to question titles alone from the period of 1996 to 2005. The data sets were extracted from Elsevier database from the disciplines of health sciences, life sciences, and physics. The primary goal was to account for the diachronic development of question titles in scientific publications using the three fields of science and to see whether or not different scientific communities practiced the same habit of title writing. Like Fox and Burns (2015), Ball's study revealed that question titles which are mostly discouraged in the writing of titles

recorded significant increase in all the fields studied over the 40 years' period. The general increase was found to range from 50% to more than 200% over the four decades studied.

In studying 808 RA titles containing 8,631 words published in *Evolution and Human Behavior* journal and its predecessor (Ethnology and Sociobiology, 1979-1996), Webster, Jonason and Schember (2009) revealed trends in titles over time. They reported that evolution psychology research showed more interest in sex-related research illustrated through the words of titles. For instance, during the period between 1979-1996, the era of Ethnology and Sociobiology, domain-specific words such as *evolutionary*, *human*, *behavior*, *reproduction*, *evolution*, *selection* and *altruism* were highly recurrent. However, in the era of *Evolution and Human Behavior* (1997-2008), the pattern of domain-specific words, indicating trends of research, turned to dominate, for example, *sex*, *attractiveness*, *differences*, *sexual*, *human*, *male* and *facial*. Webster *et al.* (2009) contend that these words contained in the titles indicate reliable indicators of the subject matter of RAs.

Fox and Burns (2015) explored titles of manuscripts or papers submitted to *Functional Ecology* for publication from 1987 to 2013. The study focused on the structure of titles examining the changes the titles recorded over time. The study found that titles of manuscripts which were submitted for publication were long and broad in scope. It was also revealed that titles with subtitles containing humour increased over time. Papers with subtitles increased the chance of being acceptable by editors for review. However, after publication, the rate of citing papers with those which did not include specific names like species or genus were more frequent than those papers with subtitles. In terms of text length, question

type of titles did not show any significant difference from those written in statement form. Papers which contained titles of middle range length performed better during editorial review, but the impact was very small. Unlike Habibzadeh and Yadollahie's (2010) study which pointed out that longer titles were more cited than shorter ones, the title length could not predict the rate of its citation. The title features which could predict the success of manuscripts were those that were broader in scope and comparative in nature. The study concluded that, over the period studied, title structures changed in relation to increase in question titles, subtitles and amusing titles; while the inclusion of genus or species names decreased.

Hudson (2016) examined the diachronic characteristics of titles of research papers from health, sciences, humanities and social sciences. About 155,552 journal papers published between 2008 and 2013 were studied. The results indicated that there was a general increase in title lengths across the disciplines in relation to the number of authors, but disciplinary variations existed. Colon and question marks usage decreased as there was an increase in the number of authors. The reverse was observed in some disciplines, for example economics. Colon usage was more frequent in the English language, media studies and social work titles than in mathematics, electrical engineering, biological sciences and aeronautical engineering. The use of question in titles also recorded similar occurrence. Similar to Milojević (2017), question titles were rarely found in engineering and mathematics. Titles which were shorter and those that employed colons largely increased the rate of citations than those that used questions in the construction of the titles.

Sahragard and Meihami (2016) examined the trends in information content contained in applied linguistics research titles published between 1975 and 2015. After studying 428 research titles from 63 issues, the information content revealed that the titles of over 40 years were constructed with four basic information focus: method/design, results, dataset and conclusion. It was also revealed that, over the 40-year period, information on the method/design of the research titles was the most frequent, but those titles that indicated conclusions were the least frequently, used and the usage kept on falling in its rate in the three journals. However, titles that contained topic, results and dataset did not show consistent results over the years studied.

Salager-Meyer, Lewin, and Briceno's (2017) diachronic study analysed 360 article titles published between 1995 and 2016 in the field of complementary and alternative medicine. The genres which were studied included research papers, reviews and case reports. The variables which were investigated were title length, and title styles which were grouped nominal, verbal and question. In all, titles showed 40% increase in text length over time, which was also a generally observed phenomenon found by other scholars (Fox & Burns, 2015; Milojević, 2017). The study found that research paper titles were longer than reviews and case report, and that the length was genre specific. Among the genres, research papers exhibited the highest increase in text length across time. It was also revealed that nominal titles were highly frequent in all the genres across the periods studied, despite the fact that there was a slight decrease with respect to time. The study also realised an increase in verbal titles (also known as full-sentence) in review articles over the 20 years' period.

Milojević (2017) conducted a study of titles of five different fields, focusing on text length, titles style, and conceptual diversity. The data comprised 213,756 article titles from astronomy (AST), mathematics (MAT), robotics (ROB), ecology (ECL) and economics (ECN), which were published between 1961 and 2010. In all, the average text length of the titles was a minimum of 8 words in MAT and ENC, but the average highest was titles in ECL (13 words). Over the 50-year period, the average title length generally increased significantly across the fields, although it was more discipline specific. This increase in title length confirms what is already in the literature (e.g., see Fox & Burns, 2015; Salager-Meyer *et al.*, 2017). Only ECN titles did not increase in length. The average text length increased most in AST. In terms of title structure, multiple component titles, interrogative titles, and declarative titles were studied across time. The multiple title was the commonest title type and was increased in AST and ECL while it was static in other fields. Apart from ECN titles which were almost 1%, the period between 1960 and mid 1990s did not count any interrogative title in the other fields studied. However, interrogative titles were still not observed in MAT and ROB, which was similar to a finding by Hudson (2016) with specific reference to mathematics. Like the interrogative titles, the declarative titles appeared in the mid-1990s in five fields. It increased substantially in the field of ECL.

We can see from the findings of the empirical review of the diachronic studies, so far, that some scholars have studied titles published from the 1960s to 2016. Generally, the findings have indicated that there have been increase in most of the variables studied: average text length, colon usage, and question titles, focus on research subject matter, humour and subtitle, and full sentence in title

constructions. What was found not to be consistent were content, dataset and results in some studies, especially in Sahragard and Meihamin (2016). Those that have been found to be common include method/design in titles, colon usage, but conflicting results in the common usage of nominal titles and multiple titles. Some studies have pointed out the nominal titles to be the most frequent while others found multiple titles. In all, the findings will guide the present research work in my discussion of the results because it shares a lot in common with respect to diachronic studies and the variables studied.

Relationship between Previous Studies and Present Study

The literature available has shown the state of scholarship on titles. The review of literature has demonstrated that titles vary across disciplines or sub-disciplines (e.g., Bavdakar, 2016, Cook, Beckman & Bordage, 2007; Jamali & Nikzad, 2011; Lewison & Hartley, 2005; Webster, Jonason, & Schember, 2009). The review has also shown that various studies explored different linguistic aspects of titles from varied fields, in relation to title length (e.g., see Annesley, 2010; Afful, 2017; Afful & Mwinlaaru, 2010; Day, 1998; Gesuato, 2008; Peh & Ng, 2008), syntactic structures and styles (e.g., see Bavdakar, 2016; Cook, Beckman & Bordage Cheng, Kuo & Kuo, 2012; Gesuato, 2008; Moattarian & Alibabae, 2015), punctuation mark usages (e.g., Afful, 2017; Afful & Mwinlaaru, 2010; Moattarian & Alibabae, 2015; Nagano, 2015), semantic encodings (e.g., Alcaraz & Mendez, 2016; Cheng *et al.*, 2012; Haggan, 2004), citation impact (e.g., Lewison & Hartley, 2005; Webster, Jonason, & Schember, 2009) or lexical choices (e.g., Afful, 2017; Alcaraz & Mendez, 2016). The diachronic perspective of studying titles has also been explored to identify the trends in titleology (e.g., Fox & Burns, 2015; Whissell, 2012). Indeed, the few

works reviewed so far, in relation to title study, point to the fact that the single unit titles and nominal titles are typical of title construction. What the current research shares in common with the previous works is the similarity in different components or perspectives explored by individual studies. In other words, the current research combines the individual aspects of titles explored by the individual empirical studies for detailed investigation of titles structures and trends.

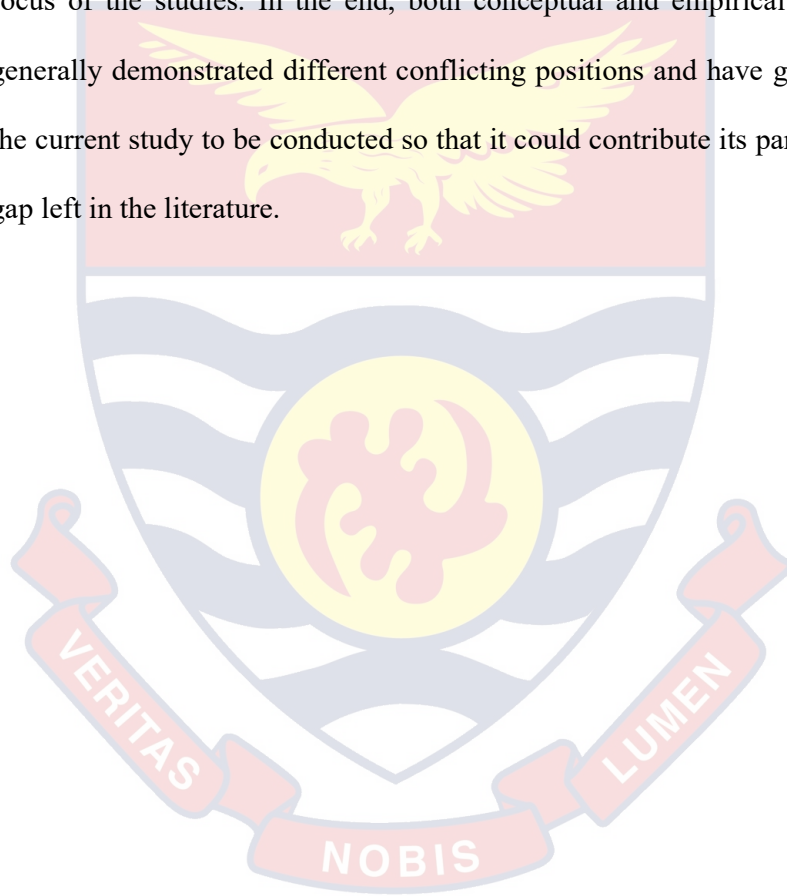
The empirical studies on titles seem to be skewed towards a specific discipline, especially some disciplines in science. This means that title studies in other disciplines are not so prominent as compared to the fields of science. The body of information also suggests that there have been series of research into title types in certain areas in science but the information on diachronic and comparative perspective on health science research and religion appears non-existent. After the review of available literature on title research, the researcher realized the need to do more and detailed analysis of titles of research in the fields of religion and drugs; a sub-discipline of health science. In view of this, the current work intended to take a close examination of RA titles comparatively and diachronically in order to identify the trends and patterns of title construction for the benefit the members of the academic discourse community. It implies that similar to other studies which investigated the discipline of science, the current research also studies science titles but compares them to titles in religion.

Chapter Summary

Chapter two has reviewed both conceptual and empirical issues related to the construction of effective titles for RAs. The conceptual issues touched on the communicative function of the title, the effective way of

constructing titles in terms of length, the information content, the choice of common words, and different perspectives of title classifications. All the academic writing guides reviewed so far direct authors on crafting an effective title. But the empirical evidence supporting the claims of these guides remain divergent and contradictory to a very large extent.

The chapter also reviewed the empirical studies on titles in terms of the focus of the studies. In the end, both conceptual and empirical reviews have generally demonstrated different conflicting positions and have given space for the current study to be conducted so that it could contribute its part in filling the gap left in the literature.



CHAPTER THREE

METHODOLOGY

Introduction

Chapter three presents the data and the methodology of the research. This chapter discusses the kind of data involved in this research and the methods involved in order to arrive at the findings of the research. The chapter, specifically, discusses the research design, the source of the data, the sample size that was used, the sampling procedure and the method of data analysis. The discussion of these pertinent issues creates space for readers to understand the processes the study went through in arriving at the findings and, at the same time, help those interested in replicating the results for the purpose of verifiability (Day, 1998; Gustavii, 2008).

Research Design

The research design that was used in this research was the mixed method approach. Qualitatively, the content analysis perspective which involves textual analysis formed very important aspect of this research. The qualitative method was very important in identifying and describing the various aspects of the research in relation to the variables (title length, style, syntactic structure and demarcating marks). This approach is confirmed by Best and Kahn's (1998) assertion that the qualitative approach of research observes and describes the existence of natural phenomena, behaviour and conditions without influencing them in any way. The research also deployed some aspects of quantitative approach, for example percentages, so that it could facilitate clarity in the presentation of the results and the discussion. The quantitative aspect of the work

utilised numerical data organised into tables to help identify trends in titles and the comparative aspect of the research.

Data

The data for this research comprised titles of original RAs published online. The data were written texts which were already established in the contents of the database of *Sage Journals*. The data were extracted from two different journals: *Journal of Drug Issues (JDI)* and *The Bible Translator (TBT)*. Generally, *JDI* is in the field of Pharmacology and Toxicology, a subfield of Drugs in health science, and *TBT* in the domain of religion. The *Journal of Drug Issues* is a quarterly highly refereed journal which publishes high quality research focusing on problems associated with drugs, both nationally and internationally, since its inception from 1971 up to date. It focuses on illicit drugs and has an impact factor of 1.304. On the other hand, *The Bible Translator*, a member of the Committee on Publication Ethics (COPE) and a journal of the United Bible Society, is also a highly refereed journal whose publications commenced in 1950 and has been publishing scholarly research continuously till now. It publishes three times a year. The *TBT* offers opportunity for scholars to publish their contributions on topics related to biblical translation, biblical history, theory and theology of translation, biblical textual criticism, exegesis, and interpretation.

Both journals were selected because they suited the purpose of the research, a diachronic perspective. Both journals provided title records as far back as 1971, which covered almost five decades of title construction. Although the origin and history of scientific journals can be traced back to 1665 (Liumbruno *et al.*, 2013), the dates of the inception of the online publications of the articles also informed the choice and the selection of these two journals, and possibly from

two different disciplines: drugs and religion. What this means is that the thesis considered studying the trends in the titles from the period of 1971 to 2018. This choice was due to the fact that online publication and appearance dates of these two journals were different. As already pointed out, *JDI* started from 1971 to 2019 while *TBT* started from 1950 to 2019. So, it means that the common periods that could be easily compared were from 1971 to 2018. Also, the research was interested in journals from disciplines which appeared under researched in terms of title study.

Background Information and Publication Policies of the Two Journals

This section provides a description of the aims and scope of the two journals used for the research. The information also includes brief history about the journals and some publication policies relevant to the discussion of the current research. The information is provided to offer a clear understanding into the background information of the two journals studied. Regarding title construction, which is the focus of this current study, SAGE publishing provides general guidelines to authors. SAGE publishing advises authors to write titles which are descriptive in nature, without containing ambiguity. Also, the titles should include the topics explored by the respective papers or manuscripts. In cases of ‘creative’ titles, they should be made subtitles to descriptive titles.

Journal of Drug Issues (JDI)

Journal of Drug Issues is a scopus-indexed journal which is published quarterly since its inception (journal.sagepub.com). The journal is within the discipline of Life and Biomedical Sciences, especially Pharmacology and Toxicology. Although the exact date of its beginning is not prominent in its website, *JDI* was legally made part of the State of Florida in 1971, as a non-profit

entity. The journal was moved to the Florida State University College of Criminology and Criminal Justice in 1996. *JDI* practices anonymous review, with only the title on the front page of a manuscript. Since its inception, the journal has focused on providing scholarly research on illicit drugs and other related areas. *JDI*, therefore, creates forum for both national and international subscribers and contributors. In terms of journal policy on title construction which relates to this current research, *JDI* seems silent on the exact title. However, its advices authors to provide at most 55 characters in situations where running titles are involved.

The Bible Translator (TBT)

The Bible Translator (TBT) is a religious journal found within the discipline of Social Science and Humanities. The journal focuses on publishing scholarly works related to Bible translation since its inception in 1950 (journal.sagepub.com). The journal publishes papers which have Technical or Practical concerns to Bible translation. It also publishes reviews in biblical translation, studies, and related fields. *The Bible Translator* reviews manuscripts anonymously, with initial two reviewers. To make paper recoverable, *The Bible Translator* recommends writing effective titles, keywords and abstracts. The journal seems silent on the structural style or length of titles of manuscripts submitted to the outfit.

The Data Size

The data size that this thesis examined comprised 2,953 titles taken from the RAs of the two journals: *Journal of Drug Issues (JDI)* and *The Bible Translator (TBT)*. Due to the text length of the titles studied, data size was considered for the investigation of the linguistic variables (title length, title types,

other structural organisations) because all the data available online from 1971 to 2018 for the two journals were extracted. The issue regarding the appropriate size of data to study in a particular research is not specific and it is often based on the type of research being conducted. This is because as Anthony (2001) points out, the choice of data for a study should be based on the focus of the study: either the study intends to do a detailed investigation or a brief one. Doing a detailed study of a particular phenomenon with a very large data could pose a serious challenge to the research, with specific reference to timing and method of analysis. On the other hand, a brief study with a relatively small data is not advisable.

This choice was also informed by the literature. The data sets for title studies have ranged between 50 (e.g., Alcaraz & Mendez, 2016; Afful & Mwinlaaru, 2010; Cook *et al.*, 2007; Fortanet *et al.*, 1997) and 20,000 plus (e.g., Letchford *et al.*, 2015; Lewison & Hartley, 2005), depending on the method of analysis or the variables studied. As already pointed out, the variables being studied can also vary from simple to complex or detailed study of a particular phenomenon. For instance, Anthony (2001) considered 600 titles, appropriate from six journals to study title length, punctuation usage, word frequency and position of usage using software for the analysis. Ball (2009) also considered studying almost 20 million scientific article titles suitable because the focus was on only one type of title, thus interrogatory structures, with the aid of software. However, the current research is fundamentally manual in nature and therefore considered 2,953 appropriate for this thesis.

Sampling Technique and Collection Procedure

The purposive sampling technique was adopted to select the periods or intervals of time which were deemed appropriate for this current research. What this means is that the researcher extracted all the 1,926 research article titles individually from the *JDI* (1971-2018). The other 1027 titles were taken from the *TBT* (1971-2018). The time-bound periods indicated for both journals for the extraction of the data were due to the common dates since their publications of the research articles online.

Different kinds of intentions for data selection on titles extractions for a study have been used, for example, using highly reputable journals (e.g., Alcaraz & Mendez, 2016) or selecting data from the first issues of journals (e.g., Kerans *et al.*, 1016; Salager-Meyer *et al.*, 2017). However, I agree with Anthony's (2001) argument that there are weaknesses in using first issues, especially, as the main criterion for data selection because there is a problem of non-representativeness. For the purpose of exploring titles trends across at least five decades in two journals for comparison, the purposive sampling technique was, therefore, used in selecting the two journals for the purpose of examining title structural and stylistic trends. This research was interested in titles of articles as far back as possible in terms of years of publications. The selected data set were extracted from 1971 to 2018. The titles displayed on the table of content of the journals were highlighted and copied one-by-one in order to save them in Microsoft Word format for the analysis. The time frame can also be explained by the availability of 20th century digital publication due to the limitation technology put on the earlier researchers of the scientific world (Lewison & Hartley, 2005). It is important to note that the titles added to the data sets were those of original RAs.

This means that the research excluded the titles of review papers, book reviews, and letters to the editors, research notes, commentaries, editorials or perspectives, news and announcements. The titles studied in this research were extracted from 858 issues of the two journals. Table 1 gives the details of the data selected from each of the journal or discipline.

Table 1. Details of data selected for the research

Domain	Journal	Month/Year	Vol/Numb.	Titles
Drugs	<i>JDI</i>	Jan. 1971 - Oct. 2018	1/1 - 48/4	1926
Religion	<i>TBT</i>	Jan. 1971 - Dec. 2018	22/1 - 47/4	1027
Total			858 Issues	2953

It must be noted that there were no records of research article titles in 2014, 2015 and 2017 for *The Bible Translator (TBT)*. This is probably the cause of the fall in the number of titles studied in this research, relative to the number of titles in the *Journal of Drug Issues (JDI)*.

Analytical Framework

This section presents the analytical framework for the research. This research employed the content analysis approach to examine the length, stylistic, and syntactic structures of the titles. The analysis was specifically guided by the taxonomy of Dietz' (1995, cf Moattarian & Alibabae, 2015), which can be found in Figure 1.

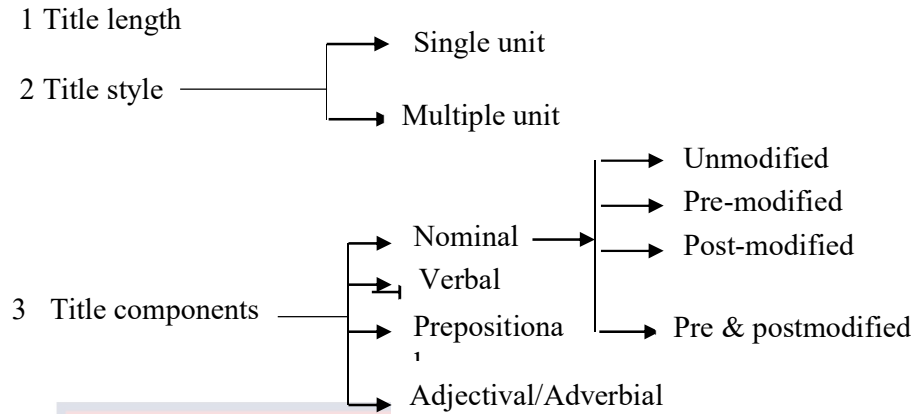


Figure 1: Dietz' (1995) Framework for Analysing Structural Organisation of Titles

It must be emphasised that this taxonomy was modified to suit the current studies. It means that two modifications were done. The first has to do with using the Quirkean model of grammatical analysis which typically considers phrases as against finite and non-finite clauses instead of classifying certain units, for instance V-ing, as a phrase. This conceptualisation of phrases and clauses was done in order to appreciate the perspective of this research in classifying the title components into various phrases and clauses. The other issue relates to the demarcation of the titles of multiple foci, i.e., the punctuation marks used in segmenting the components.

The Procedure of Data Analysis

After extracting the data from the journals' tables of content, the first process was labelling the data sets for the purposes of identification and presentation of the results. This suggests that titles from the two journals were labelled before analysing them. The labelling took the form of the initials of the journals. For example, the titles in the *Journal of Drug Issues (JDI)* were labelled *JDI + year (JDI 1991, JDI 2000, 2001, etc.)*. Those of *The Bible Translator (TBT)*

were also labelled *TBT + year* (*TBT 1971, TBT 1972, TBT 1973*, etc). Secondly, the content analytical approach which focuses on a textual analysis was carried out to examine the macro-structure of the data. The macro-structure concentrated on the generic structure of the titles relative to the trends of linguistic elements which were common in the title texts over the years. The Microsoft Office (Word) was very helpful in counting the words to establish the title length.

Variables

This section discusses how the specific linguistic variables and text length that the research focused on were analysed. The variables included title length, title types or styles, syntactic structures of the single unit titles, modification of the nominal heads, post-modifiers and demarcating marks. Each case, the variables were organised into percentages or averages, demonstrated well in tables. Apart from the text length, the structural organisation of titles provides detailed information about how the title is syntactically organised to achieve its purpose. This includes identifying title styles based on either the title is asyndetically coordinated or not, identifying single unit titles based on phrases, clauses on sentences, and the kind of modification of nominal heads.

Title length

Title length is the number of words contained in the titles. According to Gesuato (2008), words are identified as letters which are strung together and signalled by preceding space or a space coming after it or a punctuation mark. It could also be a single letter or figure. To consider a single word, Afful (2017, p. 15) suggests “non-hyphenated compounds, capitalized abbreviations and numerical sequencing” constituting a word in each case. The word count was

done, using Microsoft Office Word. The following extracts are used to demonstrate how the counting of the words was done:

Extract 1. *The Hebrew Post-Verbal Lamed Preposition Plus Pronoun: Discourse Features in the Light of Some African Languages* (16 words) (TBT).

Extract 2. *Singing or Pruning?* (3 words) (TBT).

Extract 3. *An Integrative Model of Physiological and Social/Psychological Factors in Alcohol Consumption among Chinese and Japanese Americans* (16 words) (JDI).

Extract 4. *A Research Model for a Comprehensive, Health Service Oriented Understanding of Drug Use* (13 words) (JDI).

Extract (1), taken from 1985, was considered a sixteen-word title because the hyphenated word was conceived as a single word. Extract (2) consists of three words but, in Extract (3), the slash joins the words *Social* and *Psychological* to be considered one, therefore counting as sixteen words. Extract (4) counted thirteen words.

Title style

‘Title style’ refers to the different segments of the title compositions. The structural types were determined by the number of segments for presenting the titles. This consisted of units of title presentation. Punctuation marks served as pointers in identifying the components of the titles. Consequently, three title styles were identified in this study. Those that were presented in one segment were labelled ‘Single Unit Titles’, but those presented in double components were described as ‘Double Unit Titles’. There were others which were presented in

three different segments. For the purposes of not repeating examples, more extracts are provided in the next chapter (Chapter Four) under the presentation of the results of each variable for proximity and easy understanding. It means that extracts exemplifying title style are not provided here.

Syntactic encodings of the single unit titles

Following Gesuato (2008), I use syntactic encoding to refer to the units in the titles which were realised as noun phrases (NPs), prepositional phrases (PPs), sentence structures or clauses. In this research, the Single Unit titles were organised into phrases (e.g., noun phrases or prepositional phrases), clauses (e.g., non-finite clause) or sentences (e.g., declarative sentence).

Title components of the nominal structure

The components of the nominal structure describe the composition of the noun phrase structure. The modifications of the nominal heads were examined to identify the commonest structure which were used in postmodifying the nominal heads in order to present the titles in the single unit form. The modifications were classified as ‘pre-modified only’ structures, ‘post-modified only’ structures, ‘both pre-modified and post-modified’, and ‘unmodified structures’. Concerning the post-modification structures, phrases and clauses which were used in post-modifying the nominal heads were identified as prepositional phrases, non-finite clauses or relative clauses. Examples are provided in Chapter Four under the respective subheadings to illustrate the explanations given.

Chapter Summary

The main purpose of Chapter Three was to present the data for this research and the methodological and analytical approach in handling the data. Due to the focus of this research, the qualitative design was largely used in

studying the data. Purposive sampling was used to select the journals and extracts from and the process of extracting the data for this research. Dietz' analytical framework was adapted in examining the variables. The chapter has discussed the details of how the data were labelled and analysed.



CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter reports and discusses the results of the research to facilitate understanding of how research article for two disciplines have developed over the years. The results and the discussion of the research of *The Bible Translator (TBT)* are presented first before those of the *Journal of Drug Issues (JDI)*. Both qualitative and quantitative analyses are presented in respect of the selected variables under each variable of titles.

Research Article Titles in *the Bible Translator (TBT)*

This section presents the results of the titles of *The Bible Translator (TBT)*. The variables which were analysed include length, style, syntactic structure, nominal modifications, specific postmodifiers, and punctuation marks used in demarcating the titles with dual or multiple foci.

Title length of research article titles in *TBT*

This subsection of the thesis presents the results of the trends in the text length recorded over the 48 years of title construction in the publication of research articles (RAs) in *The Bible Translator (TBT)* journal. As already discussed in Chapter Three, the unit of measurement of the title length was individual words. Examples of the longest and shortest titles are provided in Extracts 5 and 6.

Extract 5. *The Challenges of Translating 'ApΣEnokoitai and MaAAkoi in 1 Corinthians 6.9: A Reassessment in Light of Koine Greek and First-Century Cultural Mores (TBT, 2011).*

Extract 6. *Angels (TBT, 2000).*

We can see that the longest title (Extract 5) was constructed as a Double-Unit Title. The shortest title (Extract 6) occurred as a single word in 2000. The results of the text length of *TBT* are displayed in Table 2.

Table 2: Text Length of the RA Titles of *The Bible Translator (TBT)*

Period	Total words	Total Titles	Longest title	Shortest title	Average length
1971-1980	2014	271	17	2	7.4
1981-1990	1795	236	20	2	7.8
1991-2000	1701	208	17	1	8.2
2001-2010	2086	230	17	2	9.1
2011-2018	902	82	22	1	11.3
Average	8498	1027	18.6	1.8	8.3

As can be seen from Table 2, the overall number of words used in constructing the research article titles published in *TBT* was 8498 from 1027 titles from 1971 to 2018. The longest title recorded over the 48 years had 22 words long, which was recorded between 2011 and 2018. However, the shortest title, made up of only a word (as can be seen in Example 2), which was recorded in two different periods of time: one in 1981-1990 and the second in 2011-2018. The average RA text lengths for longest and shortest titles were 18.6 and 1.8 words per title respectively. The overall average title was recorded as 8.3 words. Over the 48 years, the least average RA title length was 7.4 words as against the longest average RA title length of 11.3 words. The length of titles of papers in *The Bible Translator* is not specific, as the journal is silent of this information to authors. Authors may write titles bearing in mind common and best practices from previous studies published.

It is interesting to learn that these findings of longest and shortest titles appear close to what Afful (2017) found in the field of Applied linguistics; that the shortest title was made up of two words while the longest was made of 24 words. At the same time, the findings seem to defy the typical title range (5-15 words) recommended by academic writing guides for authors (e.g., Fischer & Zigmund, 2004; Kotzé, 2007), despite the fact that there are no generally accepted maximum number of title text length. It is argued that though long titles may give details of the content of a paper, they can also distract the attention of readers (Hudson, 2016; Peh & Ng, 2008). The average text lengths for longest and shortest titles were 18.6 and 1.8 words per title respectively. Peh and Ng (2008) claim that a title of about three words long cannot be enough to provide sufficient information of the content of an article to readers, but relatively short titles occupy small space. In Mack's (2018) view, there is no universally acceptable way of constructing what is usually classified as a good title. Some common expressions used in describing good titles include *concise, accurate, informative, short, attractive, in a few words, succinct, specific, brief, clear, or simple* (Branson, 2004; Dedhia *et al.*, 2017; Peh & Ng, 2008; Shankar, 2012). It can, therefore, be argued that a good title is the one that has the ability to achieve its primary goal of helping readers to locate them for the required information in content of a paper.

The overall average title was recorded as 8.3 words, which was similar to Milojević's (2017) finding of 8 words and 7.9 words of Fortanet *et al.* (1997). Besides, most studies (Afful, 2017; Alcaraz & Mendez, 2016; Gesuato, 2008; Moattarian & Alibabae, 2015) found a relatively higher number of average title length (between 10.4 words to 13.76) than the present study. Over the 48 years,

the least average title length was 7.4 words as against the longest average title length of 11.3 words.

In terms of trends in the average text length, it is obvious from Table 2 that the average title length kept on increasing from 1971 to 2018, as the differences between the average text length of titles were recorded as 0.4 word (i.e., 7.8-7.4), 0.4 word (i.e., 8.2-7.8), 0.9 word (i.e., 9.1-8.2), and 2.2 words (i.e., 11.3-9.1).

The increase in text length across time is an observed phenomenon from different empirical studies (e.g., Fox & Burns, 2015; Hudson, 2016; Lewison & Hartley, 2005; Milojević, 2017; Salager-Meyer *et al.*, 2017). The increase in title length might be due to the fact that research papers need to differentiate themselves from several studies in terms of scope. It may also emerge from the fact that SAGE publishing which houses the journal expects titles to contain the study's topic and relevant key terms or phrases to assist easy abstraction and indexing, which may lengthen titles. This argument is based on the fact that titles compete in the internet for large readership. It therefore suggests that one-word title (as observed in Extract 6) is not found within titles published from the last few decades.

Title Style in Research Articles of *The Bible Translator*

Three types of titles were identified. In some instances, titles were identified as Single Unit Titles (SUTs) because such titles were composed of only one segment. In another instance, titles were made up of two different segments and such titles were labeled Double Unit Titles (DUTs). Those which were made up of three units were identified as Multiple Unit Titles (MUTs). Examples taken from *The Bible Translator (TBT)* can be seen in 7-12;

Extract 7. *A Catholic Translation in Contemporary Spanish* (SUT)

Extract 8. *Translating Christ and Messiah in the New Testament* (SUT)

Extract 9. *Dialect Problems and Bible Translation — A Case Study of a Union Version* (DUT)

Extract 10. *Yahweh or Boaz? Ruth 2.20 Reconsidered* (DUT)

Extract 11. *The Holy Spirit: Person and Power. The Greek Article and Pneuma* (MUT)

Extract 12. *How Could Something So Right Be So Wrong? OT References to the Left and Right Hand: Implications for Translation in Africa* (MUT)

Extracts 7 and 8 are Single-Unit Titles because the titles are presented in one segment. Extracts 10 and 11 are Double Unit Titles as they have two title components each. The segments of Extract 9 are separated by a dash while the two sections of Extract 10 are separated by a question mark. Extracts 9 and 10 are Multiple Unit Titles due to the fact that they contain more than two segments each. The components of Extract 11 are separated by a colon and a full stop, while those of Extract 12 are separated by a question mark and a colon. Table 3 presents the results of the analysis and the trends shown over approximately five decades.

Table 3: Distribution of Title Styles Used in RAs of *The Bible Translator*

Period	Single Unit	Double Unit	Multiple Unit	Total
1971-1980	213 (33%)	55 (15%)	3 (20%)	271
1981-1990	165 (25%)	70 (20%)	1 (7%)	236
1991-2000	132 (20%)	73 (21%)	2 (13%)	207
2001-2010	110 (17%)	112 (31%)	8 (53%)	230
2011-2018	35 (5%)	47 (13%)	1 (7%)	83
Total	655 (63.8%)	357 (34.8%)	15 (1.4%)	1027

The results in Table 3 suggest that three different styles of title units were used in displaying the content of RAs published in *TBT* journal. It is clear from the results that the SUTs recorded the highest frequency of occurrence, which covered approximately 64% of the total titles (represented by 655 out of 1027) studied for this particular journal. This finding confirms the dominant use of single unit titles in the literature (e.g., Afful, 2017; Cook *et al.*, 2007; Gesuato, 2008; Moattarian & Alibabae, 2015). However, the present finding contrasts several other studies in the literature which found the MUTs as the most preferred choice (e.g., Biber & Gray, 2010; Cheng *et al.*, 2012; Haggan, 2004; Hartley, 2007; Wang & Bai, 2007). The second highest, Double Unit Title, recorded 357 of the total titles (34.8%) but the Multiple Unit Title recorded less than 5.0%, as it occurred fifteen times in all the titles of *TBT*. In terms of the total number of titles produced over the years, there was a decrease from 1971 to 2018. The results show that the trends of decrease changed in 1991-2000, which saw a rise in the total number of titles in the next year. The last period, 2011-2018, recorded the least of 83 RA titles, suggesting far more decrease in the number of titles.

However, it can be inferred from the difference of titles from 2001-2010 and 2011-2018 that the missing two years could not have changed the trend much.

In terms of trends of the Single Unit Titles, we can see from Table 3 that there was a continuous reduction of the number of titles constructed from 1971-1980 to 2011-2018. In other words, the period 1971-1980 recorded the highest number of titles (213) constructed as compared with the next three decades. It can be possibly argued that this downward trend in the Single Unit Titles could not be affected by the loss of data in the three years recorded because the trend appeared consistent.

Unlike the trends observed in the Single Unit Title, the Double Unit Title (DUT) showed a gradual increase in the number of title style used in presenting the contents of the RAs (see Table 3). This finding is in line with Milojević's (2017) finding that the Double Unit Title increased over time. The number of the DUTs started from 55 between 1971-1980, with 25 titles increase in the next decade. Although the number of RA titles increased by three in the next ten year's period, the relevance of it is that it, at least, shows some upward adjustment of the use of DUTs over the previous decade. There was a huge rise in the number of the DUTs in 2001-2010, with the difference of 39 RA titles which was the highest record of the interval observed. It is surprising that the third highest total number of titles constructed in the *TBT* journal was recorded between 2001-2010 but the highest difference was recorded within this same period. This probably shows how eager most authors intended bringing dual foci to representing the details of the contents of their RAs. Cheng *et al.* (2012) claim that the increasing use of the DUTs may be due to the advantage they offer the author, because the writer has the option to form the topic in one component and specify the topic in

the other segment for readers to get what is hidden in the content of the study. The 2011-2018 recorded the lowest use of DUTs. Here, again, the missing data of three year may be responsible for the reduction of the DUTs. The general increase in the DUTs may be due to the fact that journals prefer titles that have dual foci, where the two sides of the topic are separated by a punctuation mark (Shankar, 2012). Shankar argues that a title should indicate the content of the paper, its design and its main findings.

We can also see from Table 3 that the use of Multiple Unit Title (MUT) was not consistent. The number of MUTs started from three between 1971-1980 but dropped to one title in the next decade. The number increased by one in 1991-2000 but 2001-2010 saw the highest usage of MUT as eight. The period of 2011-2018 recorded only one use of MUT, which occurred in 2013. It means that there was no use of the MUT after 2013 till 2018. The MUT structure can be seen in Extract 13.

Extract 13. *How could something so right be so wrong? OT references to the left and right hand: implications for translation in Africa.* (MUT)

We can see that the title style in Example (13) is in three different sections with a question mark separating the first component from the second segment. The third section starts after the use of colon. The three segments give different foci to the entire title.

Syntactic Structures of the Single Unit Titles (SUTs)

This section presents the varied structures of the SUTs. It must be noted in this research that the thesis concentrates on only the organizational structure of the Single Unit Titles due to the overwhelming proportion of the occurrence (63.8%) of the SUTs compared to the other title units. Although the Single-Unit

Title style was described as the presentation of titles in a single segment, the organisations were made up of different syntactic structures. In this research, the different syntactic structures were categorized into phrases, clauses and sentences. These structures included noun phrase (NP), non-finite clause (NFC), question (Q), declarative sentence (DS) and prepositional phrase (PP). Two examples each of these syntactic structures from *TBT* titles can be seen in Extract 14 to 23.

Extract 14. *Some Problems of Equivalence in AMOS 1:3* (NP)

Extract 15. *The Use of Figurative Language in Malachi 2.10-16* (NP)

Extract 16. *Translating the Word for “Soul” in the Old Testament* (NFC)

Extract 17. *Taking Theology Seriously in the Translation Task* (NFC)

Extract 18. *What is Special about Your Language?* (Q)

Extract 19. *What's in a Name?* (Q)

Extract 20. *Women are Saved through Bearing Children (1 Timothy 2.11-15)* (DS)

Extract 21. *There is more to “and” than Just Conjoining Words* (DS)

Extract 22. *On Translating Jeremiah 30.18B* (PP)

Extract 23. *From the Beginning to Proverbs* (PP)

Extracts 14 and 15 are made up of noun phrases (NPs) with *problems* and *use* as the head words. The two non-finite clauses (NFCs) in 16 and 17 begin with two progressive non-finite verbs *Translating* and *Taking* respectively. Extracts 18 and 19 are in the form of interrogatives sentences (Qs). Extracts 20 and 21 are in the form of declarative sentences (DS). Those exemplified in Extracts 22 and 23 are prepositional phrases (PPs) with the prepositions *On* and *From* as their

respective head words. The results of the frequency of occurrence of these syntactic structures forming SUTs are presented in Table 4.

Table 4: Distribution of the Syntactic Structures of SUT in *TBT*

Period	NP (%)	NFC (%)	Q (%)	DS (%)	PP (%)	Total
1971-1980	147 (34)	35 (28)	19 (31)	7 (44)	5 (36)	213
1981-1990	96 (22)	44 (35)	20 (32)	4 (25)	3 (21)	167
1991-2000	95 (21)	26 (21)	9 (15)	1 (5.0)	2 (15)	133
2001-2010	79 (18)	13 (11)	11 (18)	2 (13)	3 (21)	108
2011-2018	22 (5.0)	6 (5.0)	3 (4.0)	2 (13)	1 (7.0)	34
Total	439 (67)	124 (19)	62 (10)	16 (3)	14 (2)	655

The results in Table 4 demonstrate that five different syntactic structures were used to organise the SUTs in presenting the contents of research articles (RAs). Out of the total SUTs of 655 across 48 years of title construction in *TBT*, noun phrases (NPs) constituted the highest frequency of use, representing 67.0% (439). The most frequent use of NP titles is already documented in the literature (e.g., Afful, 2017; Afful & Mwinlaaru, 2010; Alcaraz & Mendez, 2016; Gesuato, 2008; Moattarian & Alibabae, 2015; Salager-Meyer *et al.*, 2017). This might be due to the fact that the NP title is easy to construct than the other structures. Its ability to compress more information might be another factor for its high preference. Non-finite clauses (NFCs), mostly made up of V-ing structures, occurred second (124, representing 19%) in terms of frequency in the SUTs, an observation already made in the literature (Afful, 2017; Moattarian & Alibabae, 2015). Besides, the number of times questions (Q), declarative sentences (DS) and prepositional phrases (PP) occurred were 62 (10%), 16 (2.4%) and 14 (2.0%) respectively. This suggests that the last three syntactic structures were not much

used in presenting the contents of the RAs in *TBT*. This study is in line with the findings of other studies (Hudson, 2016; Milojević, 2017).

The NP frequencies of occurrence since 1971 to 2018 showed a continuous fall in the number of title use, as its use in constructing titles started from 147 in 1971-1980 (see Table 4). This finding provides additional evidence that the NP titles decreased over time (Salager-Meyer *et al.*, 2017). The drop in gap of the NP titles from 1971-1980 to 1981-1990 is widely larger than the rest of the other years (respective differences of 1 and 16), except the gap between 2001-2010 to 2011-2018 (difference 75). The decrease in the NP titles may be attributed to the fact that authors were trying the other structural types of titles to perform the same function. Although questions, declarative sentence, and prepositional phrase title types did not occur much in the SUTs, their occurrences showed irregular patterns of title use. However, the general fall in almost all the structural title types of the SUTs seems to be a reflection of the total number of titles constructed since 1971 to 2018. The highest number of SUTs produced for the 48 years of study was recorded in the first decade (1971-1980). The drop in frequency for the overall production of RA titles started from the next decade and continued to fall in number till 2018. The first three most frequent title structures appear to show continuous fall in title development across the years studied.

In terms of question titles, the patterns observed from Table 4 suggest inconsistency in question title usage since 1971. Meanwhile, there was evidence that question title decreased over time although its occurrence was relatively small (Fox & Burns, 2015; Lewison & Hartley, 2005; Milojević, 2017). Ball (2009) posits that writers usually use question title because it stimulates reading the entire manuscript.

Modification of the NP Heads in the *TBT*

The generally observed NP structure contains an obligatory nominal head with or without pre-modifiers and/or post-modifiers. The modifications of the nominal head in the NP limit the focus of the NP and also guide us to understand the informative nature of the NP structure. This research explored the kind of modifications employed in limiting the focus of the NPs of the SUTs. The thesis considered nominal structures such as Pre-modified Only (Premod Only), Post-modified Only (Postmod Only) and Unmodified/no modified (Unmodif) structures, as well as those which were both pre and post-modified (Both Modif). Examples taken from *TBT* are illustrated in Extract 23 to 34.

Extract 23. *Troublesome Transliterations* (Premod Only)

Extract 24. *Ancient Translations* (Premod Only)

Extract 25. *The 1876 Russian Bible* (Premod Only)

Extract 26. *God” in the Pochury Naga Bible* (Postmod Only)

Extract 27. *Translation of Questions and Prohibitions in Greek*
(Postmod Only)

Extract 28. *Translation of the Words for Locust* (Postmod Only)

Extract 29. *An Alternative Translation of Esther 1.6–7 in the Septuagint*
(Both Modif)

Extract 30. *Bible Translations in Russia* (Both Modif)

Extract 31. *Readability Tests for Arabic* (Both Modif)

Extract 32. *Olders and Youngers* (Unmodif)

Extract 33. *Communication and Translation* (Unmodif)

Extract 34. *Translators and Texts* (Unmodif)

From Extracts 23 to 34, all the nominal heads are in bold. We can see clearly that the left and right sides of each of them provide structures either pre-modifying or post-modifying the heads. For instance, Extracts 23, 24 and 25 have only premodifiers before their respective heads in bold. Extracts 26, 27 and 28 contain only post-modifiers, indicating that there are no pre-modifiers before their respective heads in bold. Extracts 29, 30 and 31 were constructed with both pre-modifiers and prepositional phrases post-modifying the respective heads in bold. All the elements in Extract 32, 33 and 34 have nominal heads conjoined by ‘and’ with pre or post-modifications, suggesting that the NP is an unmodified structure. After studying all the 439 NP titles, the results of the frequency of modifications of the nominal structures of the SUT are presented in Table 5.

Table 5: The Distribution of Nominal Modifications in SUTs of *TBT*

Period	Premod Only	Postmod Only	Both Modif.	Unmodif.	Total
1971-1980	27 (42%)	39 (38%)	74 (29%)	5 (42%)	145
1981-1990	10 (16%)	16 (15%)	70 (27%)	2 (17%)	98
1991-2000	10 (16%)	26 (25%)	56 (21%)	3 (25%)	95
2001-2010	12 (19%)	20 (19%)	46 (18%)	1 (8%)	79
2011-2018	5 (7.0%)	3 (3.0%)	13 (5.0%)	1 (8%)	22
Total	64 (15%)	104 (24%)	259 (59%)	12 (2%)	439

Table 5 displays the results of four different types of modification of the NP titles in the *TBT*. The results indicate that the nominal structures which were both pre-modified and post-modified recorded the highest frequency of resonance occurrence, occupying 59.0% (259), followed by those which were post-modified only (24%, 104). The third frequent modification style (pre-modified only)

constituted 64 titles (15%) while those which were unmodified at all recorded only 12 (2.0%) occurrences. In other words, while the authors showed interest in pre-modifying and post-modifying their NP heads in order to limit and pack more information into the NP structures, only few did not show much interest in providing more information about the focus of their nominal heads. The dominance of nominal structures which were both Pre and Post-modified differs from Moattarian and Alibabae's (2015) finding which identified Post-modified Only structures to be the commonest titles. Writers overwhelming preference for complex nominal structures may be attributed to the ability of the heads to contain information before and after them.

In terms of total NP titles relative to each decade since 1971, there is an observed drop in the number of titles constructed. For instance, the overall number of NP titles produced between 1971-1980 was 145, which dropped to 98 in the next decade. It can be seen from Table 5 that there was a continuous drop till 2018. Pertaining to general trends in the modification styles, almost all the four structures of the NP showed common progression patterns of drop in frequency of occurrence. The two structures which showed continuous drop were those both pre- and post-modified, and those which were unmodified.

Postmodifiers of the NP titles in *TBT*

Since those nominal structures which were post-modified only became higher than those pre-modified only and unmodified structures, I found interest in ascertaining the common postmodifiers of the nominal heads and the trends of occurrence in the SUTs of *TBT* journal. For instance, Post-modified structures only recorded 24% and those nominal heads which had post-modified structures

and pre-modified ones constituted 59%. Examples 35 to 43 illustrate the kind of post-modifiers identified in the data of *TBT*.

Extract 35. *Names in Genesis* (PP)

Extract 36. *Special Features of Fijian Pronouns and Their Use in Bible Translation* (PP)

Extract 37. *The Problem of a Female Deity in Translation* (PP)

Extract 38. *Speed in Bible Translation* (PP)

Extract 39. *Problems Encountered in Translating the New Testament into Modern Cambodian* (V-ed₂ NFC)

Extract 40. *Challenges Facing Bible Translation in the Islamic Context of the Middle East* (V-ing NFC)

Extract 41. *Some Observations regarding a Poetic Restructuring of John 1.1–18* (V-ing NFC)

Extract 42. *Historical Criticism Reformulated in the “Age of Imagination”* (V-ed₂ NFC)

Extract 43. *Helps That Really Help* (Relative clause)

It can be seen from Extracts 35 to 43 that all the post-modifiers are in bold for easy identification of modifying structures for the purpose of illustrations. Extracts 35 to 38 demonstrate structures in prepositional phrases as post-modifiers, using the prepositional heads *in* (35 and 38) and *of* (36 and 37). Extracts 39 to 42 show post-modifiers beginning with non-finite clauses in each case. The post-modifiers in Extracts 39 and 42 begin with V-ed₂ structures (Encountered and Reformulated) respectively while those in 40 and 41 begin with V-ing structures (Facing and regarding) respectively. Extract 43 has a relative

clause beginning with a relative pronoun *that* to post-modify the nominal head *Helps*. The occurrence of these post-modifiers across the 48 years of title constructions have been organized into Table 6.

Table 6: The Distribution of Postmodifiers of the SUTs in *TBT*

Period	PP	-ing/-ed clause	Relative clause	Total
1971-1980	109 (31.4%)	5 (38.5%)	1	115
1981-1990	83 (23.9%)	2 (15.4%)	-	85
1991-2000	75 (21.6%)	5 (38.5%)	-	80
2001-2010	64 (18.4%)	1 (7.7%)	-	65
2011-2018	16 (4.6%)	-	-	16
Total	347 (96.1%)	13 (3.6%)	1 (0.3%)	361

The results in Table 6 demonstrate that the post-modifiers of the single unit nominal titles of *TBT* were made up of three syntactic structures: prepositional phrases (PPs), non-finite clauses and *that* relative clause. The total numbers of the occurrences of each of the post-modifiers show that PPs recorded the highest frequency out of the three structures identified as postmodifiers from 1971 to 2018. We can see that the PPs alone occurred 347 times, representing 96.1% out of the total of 361 titles, which occurs almost as what Moattarian and Alibabae (2015) found as 97.71%. The dominance of the PP structures as post-modifiers confirms the findings in other studies that show the PPs as the most common post-modifiers of nominal structures (Afful & Mwinlaaru, 2010; Cheng *et al.*, 2012; Moattarian & Alibabae, 2015). This suggests that the authors found it easier to postmodify their nominal title heads with PPs to compress the information contents of their RAs. The non-finite clauses (NFCs) recorded 13 times of occurrence in the data, representing 3.6%. *That* relative clause post-

modifying its nominal head occurred once in 1976 in the data, with regard to the NPs of the SUTs. The low occurrence of Non-finite Clause and that-relative clause may be that it is easier to construct the PPs than the other structures.

In terms of trends of occurrence over the 48 year-period, we can see from Table 6 that the PP is the only postmodifier which showed continuous decrease in usage towards the present time. It is clear from Table 6 that the first decade (1971-1980) saw the highest usage of PPs as postmodifiers while the least use of the PPs happened in 2011-2018. In between the first ten years and the last eight years saw continuous decrease by 26, 8, 11 and 48 titles (the differences of 109, 83, 75, and 64). However, the non-finite clauses did not show any regular or continuous reduction of use in occurrence. It can be seen that the highest occurrence of the NFC was five in 1971-1980, which reduced to two in the next decade. It rose to five in 1991-2000 and reduced to one in 2001-2010. The period of 2011-2018 did not record any occurrence of the NFC.

Punctuations in *TBT* Titles

The punctuation marks used in demarcating the different components of the Compound Unit Titles (CUTs) and Multiple Unit Titles (MUTs) of *TBT* were studied in the data used for the analysis. Extracts 44 to 55 illustrate the use of the various punctuation marks to separate the parts of the titles of more than one unit or proposition.

Extract 44. *Isaiah 24: A Case of Form over Content?* (colon)

Extract 45. *The Translation of Literature: An Approach* (colon)

Extract 46. *A “Sin Offering” Crouching at the Door? Translation Lessons from an Exegetical Fossil in the Judson Bible* (question mark)

Extract 47. *Is Your Bible Disfigured? Transliterating Biblical Names*

(question mark)

Extract 48. *On Portions, Nostrils, and Anger — A Crux Interpretum in 1*

Samuel 1.5 (dash)

Extract 49. *Acceptability — the Supreme Translation Principle?* (dash)

Extract 50. *Structure and Cohesion in Titus. Problems and Method* (full

stop)

Extract 51. *The Good News Bible. A Reaction from India* (full stop)

Extract 52. *On Some Versions of Genesis 3.15, Ancient and Modern*

(comma)

Extract 53. *The Passive, an Unpleasant Experience* (comma)

Extract 54. *Religious Words! Which and Where?* (Exclamation mark)

Extract 55. *Get it Right from the Start! Preparing Successful Selections*

(Exclamation mark)

We can see from Extracts 44 to 55 that all the titles have more than one component with a demarcating marker. In Extracts 44 and 45, there are two components of the title separated by colons. Extracts 46 and 47 contain question part of the title at the beginning which ends in question marks. The marks provide a signal of the end of the first component of the title for the beginning of the second sections. Extracts 48 and 49 also have two foci of the title separated by a dash each. The full stop in Extracts 50 and 51 acts as a demarcating mark to separate the two components of each of the title. There is a comma in Extracts 52 and 53, separating the first structures from the second ones. The two components appear to contain different foci but joined by a comma in each case to make the entire title a double unit. Extracts 54 and 55 contain exclamation marks which

end the first segments of the titles to separate them from the second sections. Table 7 shows the results of the frequency distributions of the demarcating punctuation marks in the data.

Table 7: Punctuation Marks Used in Demarcating the Title Segments

Period	: (%)	? (%)	- (%)	. (%)	, (%)	!	Total
1971-1980	39 (14)	5 (9.6)	9 (31)	4 (40)	2 (29)	1	60
1981-1990	53 (19)	6 (11.5)	8 (28)	2 (20)	3 (42)	-	72
1991-2000	56 (30)	13 (25)	4 (14)	3 (30)	2 (29)	-	78
2001-2010	102 (36)	19 (36.5)	5 (17)	1 (10)	-	-	127
2011-2018	36 (13)	9 (17.3)	3 (10)	-	-	-	48
Total	286 (74)	52 (14)	29 (8)	10 (3)	7 (1.8)	1 (0.2)	385

The results from Table 7 show that six different punctuation marks were used in the data to demarcate the different sections of the Double Unit Titles (DUTs) and The Multiple Unit Titles (MUTs). These punctuation marks included colon, question mark, dash, full stop, comma, and exclamation mark. Table 7 indicates that colon was the commonest punctuation mark used in separating the components of more than one title unit. This is evidenced in the frequency of colon as 286 which is 74.0% of the total of 385 occurrences over 48 years. The next highest frequency was the use of question marks to demarcate the sections of titles, whose occurrence was 52 (14.0%). Less frequently occurring punctuation marks were dash, full stop, comma and exclamation marks because they occurred in the data as 29 (8.0%), 10 (3.0%), 7 (1.8%) and 1 (0.2%) respectively. Fumani *et al.* (2015) argue that colon, hyphen and comma are the most frequent punctuation marks used in constructing titles. In this study, the

results confirmed the common use of colon and hyphen, but question mark was identified as being part of the first three most used punctuation marks instead of comma. The use of colons as the major demarcating mark for partitioning different parts of titles in this study confirms what earlier studies discovered that colonic titles have the most frequency among other punctuation marks (Alcaraz & Mendez, 2016; Fortanet *et al.*, 1997). The high preference for colonic titles may be due to its attractiveness because titles are meant to be short, informative and captivating to the readers (Branson, 2004; Dedhia *et al.*, 2017).

In terms of trends of occurrence, colon and question marks appear to exhibit a general continuous rise to mark the various sections for demarcation. The first decade of occurrence (1971-1980) of colon started from 39 and increased in number in the next decade (1981-1990) to 53. The frequency increased slightly from 53 to 56 in 1991-2000, but the greatest increase was recorded in 2001-2010 with the difference of 46. Colon use in the last eight years recorded the lowest frequency of 36. It must be noted that there were no traces of colon in 1971, suggesting that it began in 1972 and started accelerating in terms of its usage over the period in the *TBT*. Empirical evidence suggests that colonic titles increased across time (e.g., Lewison & Hartley, 2005) while other studies indicated a decrease in use (e.g., Hudson, 2016). However, Hudson's study pointed out that the use of colon increased in one of the disciplines studied (Economics), despite the general decrease across all the fields studied.

The finding on using the question mark for demarcating the sections of more than one title unit in this study seems to contrast the findings of other studies that demarcating question marks decreased over time across different disciplines, except Economics (Hudson, 2016). We can see from Table 7 that the first decade

(1971-1980) recorded only five occurrences, which increased by one in 1981-1990. Between 1981-1990 to 1991-2000 recorded increment difference of seven. The next decade increased by six question marks, but the highest difference of increment was recorded between 2001-2010 and 2011-2018 as ten, which could not be accounted for as a result of the same data missing.

Pertaining to the occurrence of the other punctuation marks, there were no records of dash and comma use in 1971, meaning that they all began in 1972. The use of dash ended in 2013, although the period within 2011 and 2018 did not have the full complement of titles published. The use of full stop to separate the components of titles in *TBT* started in 1978 and ended its use in 1998, suggesting that there was no record of full stop use to demarcate the segments of titles. Regarding exclamation mark, only one record (1978) was found in the Double Unit Titles. In terms of trends of occurrence, dash and the other three punctuation marks demonstrated different and irregular trend patterns.

Research Article Titles in the Journal of Drug Issues (JDI)

The *Journal of Drug Issues (JDI)* represents health-science: a subfield of science and it is the second journal being investigated in terms of its titles in this research. This section concentrates on the results presentation of the titles of *JDI*. The variables analysed under this discipline include the trends and development of title length since 1971 to 2018, the styles of title used, syntactics structures of the Single Unit Titles (SUTs), the modifications of the nominal structure, postmodifiers employed to elaborate the information of the noun heads, and the kinds of punctuation marks used in demarcating the titles of different sections.

Title length of research article titles of *JDI*

The issues of interest in this section include longest title, shortest title and average title length. The section pays attention to how the title length increased or reduced across 48 years of publishing. The shortest and longest titles in the *JDI* are demonstrated in Extracts 56 and 57.

Extract 56. *Euphoria* (Shortest title)

Extract 57. *Drug Abuse and Alcoholism: Issues and Recommendations for the Democratic Party 1976: Report of the Study Group on Drug Abuse and Alcoholism Domestic Affairs Task Force Advisory Council of Elected Officials Democratic National Committee* (Longest title)

In Extract 56, we see that the title is made up of only one word. On the other hand, the longest title, as in (57), is in the form of three different components separated by two colons. Table 8 presents the results of the analysis of the data of *JDI* titles from 1971 to 2018.

Table 8: The Distribution of Text Length of RA Titles in the *JDI*

Period	Total words	No. of titles	Longest title	Shortest title	Average length
1971-1980	3538	396	34	2	8.9
1981-1990	3608	363	24	1	9.9
1991-2000	5261	469	24	2	11.2
2001-2010	5803	451	29	2	12.9
2011-2018	3534	247	25	2	14.3
Average	21744	1926	27.2	1.8	11.3

The results from Table 8 indicate that the longest title across the 48 years of study ranged from 34 to 24 words. These calculations were based on 21744 words of 1926 titles published in the contents of *JDI* in 48 years. We can see that 1971-1980 recorded the longest title of 34 word (see example 36), which was followed by 29 words within the decade of 2001-2010. It can be seen that the eight years of 2011-2018 had a title that was as long as 25 words, while 1981-1990 and 1991-2000 had their longest titles as 24 words each. In terms of shortest title, the results from Table 8 show that apart from the period of 1981-1990 recording a single word as the shortest title, the rest of the decades had their shortest titles as two words each.

Although there is no agreement on the specific number of an ideal title (Mack, 2018), it has been severally argued that long titles mostly impede the meaning contained in titles (Annesley, 2010; Day, 1998). Some writing guides (e.g., Kotzé, 2007; Peh & Ng, 2008) and actual practices of some journals (e.g., *Echo Research and Practice*, and *American Journal of Obstetrics and Gynecology*) set some limitations to the numbers of words expected by some publishing outlets. While Kotzé (2007), for instance, suggests a title of words between 8-15 long, some journals (e.g., *Journal of English Linguistics and Literature*) allow as many as 25 words. Peh and Ng (2008) contend that a short title of about three or four words will be inadequate to effectively describe the content of a research paper because a title should be able to inform and attract the readers. Peh and Ng (2008) posit that the length of titles can be determined by the target readership: general readers or specialists. Unlike general titles targeted at general readers, specialized titles for specialists do not need more details for understanding the title, and, therefore have shorter titles.

Regarding the average text length of the titles of *JDI*, we can see that the overall text length from 1971 to 2018 was 11.3 words within the two extreme ends of average title length of 27.2 words and 1.8 words. This suggests generally that, over the years, the average text length in the *JDI* increased continuously till 2018. This finding is similar to what other studies found; that text length of titles increased across time (Hudson, 2016; Lewison & Hartley, 2005; Milojević, 2017). The average title length in this study is less than the findings of some studies which found the average title length to be between 12.88 – 13.76 words (Alcaraz & Mendez, 2016; Moattarian & Alibabae, 2015), but more than what other studies found (7.9 – 10.7 words) (Afful, 2017; Busch-Lauer, 2000; Gesuato, 2008).

Also, the results in Table 8 demonstrate that, as years passed by, the titles increased in length till 2018. The average title length started from 8.9 words per title in 1971-1980 to 14.3 words per title in 2011-2018. We can see that the average title length increased from 1971-1980 to 1981-1990 by one word as the subsequent decades increased by 1.3 words, 1.7 words and 1.4 words. It is clear that the highest increase of average text length was between 1991-2000 and 2001-2010.

Title Style of *JDI*

The kinds of title segments in which the authors who published their research articles (RAs) in the *JDI* between 1971 to 2018 were investigated. The research was interested in either the titles were presented in a single component or more than one segment. Some of these title styles taken from the *JDI* can be seen in Extracts 58 to 63. Just like those in *TBT*, the titles were identified as Single Unit Title (SUT), Double Unit Title (DUT) and Multiple Unit Title (MUT).

Extract 58. *Law Enforcement and the Traffic in Illicit Drugs* (SUT)

Extract 59. *Establishing Alcoholism Treatment Programs in a General Hospital* (SUT)

Extract 60. *Specialization in Alcoholism and Mental Health Residential Treatment: The “Dual Diagnosis” Problem* (DUT)

Extract 61. *Are You Positive? The Relationship of Minority Composition to Workplace Drug and Alcohol Testing* (DUT)

Extract 62. *Marketing Activities: The Keystone of Capitalism — Increasing the Availability of Prescription Drugs through Pharmaceutical Promotion* (MUT)

Extract 63. *The Alive Study: A Longitudinal Study of HIV-1 Infection in Intravenous Drug Users: Description of Methods* (MUT)

In Extracts 58 and 59, the samples of titles are presented in one component only. This kind of title style was labelled as Single Unit Title (SUT). Extracts 60 and 61 were described as Double Unit Titles because they are presented in two segments each. The sections of Extract 60 are separated by a colon after the word *Treatment* while Extract 61 is also separated into components by a question mark after the word *Positive*. The last two Extracts, 62 and 63, are segmented into three sections. Extract 62 employs a colon and a dash to separate the three parts of the title. Two colons are used in Extract 63 to partition the three components of the title. The frequency of occurrence of these title styles and their diachronic trends of occurrence are presented in Table 9.

Table 9: The Distribution of Title Styles in the *JDI*

Period	Single Unit	Double Unit	Multiple Unit	Total
1971-1980	245 (25.0%)	148 (15.8%)	3 (33.3%)	396
1981-1990	179 (18.3%)	183 (19.5%)	1 (11.1%)	363
1991-2000	256 (26.1%)	210 (22.4%)	2 (22.2%)	468
2001-2010	192 (19.6%)	256 (27.3%)	3 (33.3%)	451
2011-2018	108 (11.0%)	140 (14.9%)	-	248
Total	980 (50.9%)	937 (48.7%)	9 (0.4%)	1926

The results of title styles displayed in Table 9 indicate that the titles in the *JDI* were presented in three styles: SUT, DUT, and MUT. Out of the total titles of 1926 published in the *JDI* from 1971 to 2018, those that were presented as SUTs were 980, representing slightly more than half (50.9%) of the titles. The portion of the DUTs represented 48.7% (937). Only nine occurrences were counted for the MUTs, which represented less than 1 percent (0.4%). Although the SUTs were more than the other two, the frequency of the DUTs is closer to that of the SUTs. The evidence of the dominance of the SUTs over the others is established in the literature (Afful, 2017; Alcaraz & Mendez, 2016; Cook et al., 2007; Gesuato, 2008; Moattarian & Alibabae, 2015). On the contrary, a few studies found the DUT as the more frequent title style than the SUT (Cheng *et al.*, 2012; Milojević, 2017). Cheng *et al.* indicate that writers use DUTs because they have the option of in two segments to contain sufficient information to readers. In Shankar's (2012) work, certain journals show preference for MUTs.

In terms of trends of title construction over the 48 years, the SUT appeared to exhibit an irregular pattern of trends. The SUTs in 1971-1980 recorded 245 titles but reduced in 1981-1990 by the difference of 66 titles. There was a rise in

the SUT in the next decade (1991-2000) with the difference of 77 titles. The period of 2001-2010 saw a reduction of 64 SUTs compared to the titles produced in 1991-2000. The reduction continued in the last eight years to 84 SUTs. While the SUTs showed irregular pattern of trends across time, the DUTs almost exhibited a continuous increase in number towards the present time, except in the last eight-year period. We can infer from Table 9 that the DUTs increased from 148 (in 1971-1980) to 183 in 1981-1990. Between 1981-1990 and 1991-2000, there was title increase of 27. The highest increase of 46 DUTs was seen in 2001-2010, but there was 116 DUTs reduction in the last eight years. The implication is that most scholars engaged in writing more titles with dual foci as the years passed by. This reduction might be due to the shortfall of titles in the last eight years. Similar to Milojević's (2017) study, the present study confirms the evidence in the literature that the DUT increase in number over time. This may be due to the fact that authors want to present their titles in such a way that they will have opportunity to state their title in one section and describe it well in the other segment.

Just like the SUTs, the MUTs did not show any continuous pattern of title production across the years studied. We can see from Table 9 that there were three records of the MUTs. The frequency reduced to one in the next decade (1981-1990). The period 1991-2000 recorded an increase of only one MUT, which saw the highest production of titles (469), in general, across the decades and additional one in the 2001-2010. There was no record of MUTs before 1976 and there were no traces of MUTs after 2007 in the *JDI*.

Syntactic Structures of Single Unit Titles (SUT) in *JDI*

Although the SUTs were identified as title styles with only one component, they did not appear to be of similar syntactic structures. Some of these structures included noun phrases (NPs), prepositional phrases (PPs), non-finite clauses (NFCs), questions (Qs) or declarative sentences (DS). The implication is that authors usually use different syntactic structures to communicate their respective content of their articles to attract the target readers. The study found interest in exploring the structural types used in presenting the SUTs. Some extracts are provided in (64) to (73).

Extract 64. *Drug Promotion in Self-Care and Self-Medication* (NP)

Extract 65. *Florida's Drug Dilemma* (NP)

Extract 66. *Enhancing Criminal Justice Based Treatment through the Application of the Intervention Approach* (NFC)

Extract 67. *Developing a Community-Oriented Drug Abuse Program in a State Prison* (NFC)

Extract 68. *Are Fluctuations in Delinquent Activities Related to the Onset and Offset in Juvenile Illegal Drug Use and Drug Dealing?* (Q)

Extract 69. *Is the Mischief in Drugs or in People?* (Q)

Extract 70. *Alcohol is Not the Gateway to Hard Drug Abuse* (DS)

Extract 71. *New Laws are Needed to Regulate the Drug Industry* (DS)

Extract 72. *From Blind Repression to a Thoughtful, Differentiated, “Four-Column Strategy”* (PP)

Extract 73. *Towards a Quantitative Definition of Alcoholism* (PP)

Extracts 64 to 73 show that the information contents of research articles were not presented only through the perspective of one grammatical structure but varied syntactic structures. For instance, Extracts 64 and 65 present the titles in the noun phrase (NP) form because 64, for example, contains the nominal structure head *Promotion* with *Drug* as a premodifier and the prepositional phrase *in Self-Care and Self-Medication* postmodifying the head. In Extracts 66 and 67, the titles are presented in the non-finite V-ing clause (NFC) form with *Enhancing* and *Developing* as the heads, pointing to progressive or uncompleted action. Extracts 68 and 69 are SUTs which are posed in the interrogative (Q) form about the phenomena being explored. Extracts 70 and 71 are titles constructed in the declarative sentence (DS) form. They have the subjects *Alcohol* and *New laws* with the rest being predicate respectively. Such titles explicitly declare the results of the study they represent. In Extracts 72 and 73, the titles are structured as prepositional phrase (PP) form with the preposition *From* and *Towards* as the head words. Table 10 provides the details of the results of the syntactic structures of the SUTs employed in the *JDI* and the trends over time.

Table 10: The Distribution of Syntactic Structures of SUTs in the *JDI*

Period	NP (%)	NFC (%)	Q (%)	DS (%)	PP (%)	Total
1971-1980	217 (25)	9 (14)	10 (45)	6 (50)	3 (33)	245
1981-1990	164 (19)	7 (11)	3 (14)	-	4 (45)	178
1991-2000	231 (26)	18 (28)	5 (23)	3 (25)	1 (11)	258
2001-2010	165 (19)	20 (31)	3 (14)	2 (17)	1 (11)	191
2011-2018	95 (11)	11 (16)	1 (4.0)	1 (8.0)	-	108
Total	872 (88.9)	65 (7.0)	22 (2.2)	12 (1.0)	9 (0.9)	980

The results from Table 10 show that the SUTs were presented in five different syntactic structures: noun phrase, non-finite clause, Question, declarative sentence, and prepositional phrase. The NP alone constituted 872 titles which translate into 89.0% of the 980 SUTs. This finding confirms the evidence in the literature of the dominance of NP titles (e.g. Afful, 2017; Alcaraz & Mendez, 2016; Gesuato, 2008; Moattarian & Alibabae, 2015; Wang & Bai, 2007). The next frequently used structure was NFC with 65 occurrences, representing 6.6%. Although the frequency of the NFC title was very small, its occurrence as second to NP title supports Afful's (2017) finding. This means that none of the other structures could represent above 6%, as questions recorded 22 times, declarative sentences, 12 times, and prepositional phrases 9 times throughout the 48 years of title construction and publication in the *JDI*.

With regard to the number of uses of the syntactic structures across time in the *JDI*, almost all the title structures did not indicate any continuous or regular pattern across time. The NP titles reduced from 217 in 1971-1980 by 53 titles between 1981-1990. The number of NP titles increased between 1991-2000 by 67 titles. The next decade (2001-2010) recorded a reduction of 66 titles and finally

reduced to 70 titles in the 2011-2018. The final reduction is possibly due to the collection of data from only eight years instead of ten. Although NP titles have not received much attention diachronically, Salager-Meyer *et al.* (2017) point out that the occurrence of NP titles decreased slightly across time; but this current thesis did not witness a continuous decrease or increase. It is possible that the writers tend to vary their title styles. Concerning the NFC, the first decade (1971-1980) recorded only nine occurrences but reduced by two titles in the next decade (1981-1990). Between 1991-2000, the NFC titles increased by 11 and increased again by two titles between 2001 and 2010. In the last eight years of NP titles, the NFC titles reduced in number; but this time by nine titles.

In terms of the question titles, the number of titles reduced by seven titles from 10 titles in 1971-1980 to the 1981-1990-year period but increased by two titles in 1991-2000. The next decade reduced the number of question titles by two between 2001-2010. The period 2011-2018 recorded only one occurrence of the question title. The general use of question titles appeared to reduce in its use somehow; thereby contradicting some findings that question titles increased over time (Ball, 2009; Fox & Burns, 2015; Milojević, 2017). In other studies, question titles were rarely found in some disciplines such as Mathematics, Engineering and Robotics (e.g., Hudson, 2016; Milojević, 2017). Declarative sentence title, did not occur often, but it appeared to be the only syntactic structure which showed continuous reduction of use among the four other SUTs. It started from 6 titles from 1971-1980. There were no question titles in 1981-1990. The period of 1991-2000 recorded only three titles and reduced by one title each in the next two decades. The least frequent SUT structure, PP, occurred three times between 1971-1980 but increased by one title in 1981-1990. The next two decades

recorded only one PP title each. The findings suggest that, in the *JDI*, authors show little interest in constructing their titles in the non-finite, declarative sentence, question and prepositional phrase forms.

Modification of the NP Heads in the *JDI*

This section presents the results of how the commonest syntactic structure (NP) of the SUTs was variously modified in representing the content of research articles (RAs) in the *JDI*. Some nominal heads of the NP were pre-modified only (Premod Only), some were post-modified only (Postmod Only), some were both pre and post-modified (Both Modif), but some were unmodified (Unmodif). Extracts are provided from 74 to 89.

Extract 74. *Marketing and Pharmaceutical Development* (Premod Only)

Extract 75. *Police Drug Enforcement* (Premod Only)

Extract 76. *Drug Abuse Problems* (Premod Only)

Extract 77. *The Narcotics Problem* (Premod Only)

Extract 78. *Characteristics and Patterns of use among Regular Heroin Sniffers* (Postmod Only)

Extract 79. *Perspectives on Violence* (Postmod Only)

Extract 80. *Characteristics of Drug Abusers in a Correctional System*
(Postmod Only)

Extract 81. *Trends in Drug Use and Crime among Arrestees* (Postmod Only)

Extract 82. *An Empirical **Study** of the School Zone Anti-Drug Law in Three Cities in Massachusetts* (Both Modif)

Extract 83. *Drug **Abuse** in Florida* (Both Modif)

Extract 84. *Dysfunctional **Aspects** of Drug Concern* (Both Modif)

Extract 85. *Drug **Abuse** in American Business* (Both Modif)

Extract 86. ***Ethnicity, Communication, and Drugs*** (Unmodif)

Extract 87. ***Drugs and Health*** (Unmodif)

Extract 88. ***Marijuana and Health*** (Unmodif)

Extract 89. ***Marijuana and the Law*** (Unmodif)

From Extracts 74 to 89, all the nominal heads are in bold. This implies that those structures to the left or right indicate different modifications. It means that the headwords (in bold) in 74 to 89 are preceded by premodifiers but there are no postmodifiers. Therefore, Extracts 74 to 77 are described as pre-modified only structures. In Extracts 78 to 81, there are no pre-modifiers before the heads (in bold) but there are post-modifiers, which make the structures postmodified only. There are pre-modifiers and postmodifiers before and after the heads in Extract 82 to 85, which make them both pre and post-modified structures. We can see that there are three heads in Extract 86 but two each in Extracts 87 to 89 without pre-modifiers or postmodifiers, suggesting that the nominal structures are unmodified. The frequencies of occurrence of the NP modifications across the 48 years studied are reported in Table 11.

Table 11: The Distribution Nominal Modifications in the *JDI*

Period	Premod Only (%)	Postmod Only (%)	Both Modif. (%)	Unmodif (%)	Total
1971-1980	47 (47)	36 (19)	133 (23)	3 (38)	219
1981-1990	26 (26)	32 (17)	102 (18)	4 (50)	164
1991-2000	15 (15)	60 (32)	154 (27)	1 (12)	230
2001-2010	9 (9)	44 (24)	111 (19)	-	164
2011-2018	4 (4)	15 (0.8)	76 (13)	-	95
Total	101 (11.6)	187 (21.4)	576 (66.0)	8 (0.9)	872

After accounting for the frequency of the different modifiers of the NP titles, Table 11 reveals pre-modified only, postmodified only, both pre-modified and postmodified, or unmodified structures. We can see that the commonest structure for presenting the nominal titles of *JDI* was the NP with both pre-modified and postmodified, which recorded 576 (66.1%) of the total titles of 872. Contrary to this finding, Moattarian and Alibabae (2015) found post-modified only structures to be the most frequent nominal titles. The next highest frequency is the NP which was postmodified only, recording 187 (21.4%). The nominal structure which was pre-modified only had a frequency of 101 (11.6%), as the third commonly used structure in presenting the titles of RAs. The nominal structure which was not modified at all occurred least as 8 (0.9%) titles. The period between 1991-2000 had the largest number of title publications (230) while between 2011-2018 recorded the least NP titles of 95, possibly because of being eight years instead of a ten-year interval.

Concerning the number of uses of the nominal title structures, it is only the structures which were pre-modified only that showed a continuous reduction of the number of titles till 2011-2018 (see Table 11). The values for pre-modified

only nominal titles started from 47 (in 1971-1980) and reduced continuously at different intervals of 21, 11, 6, and 5 titles respectively. After 2015, there was no record of nominal titles which were pre-modified only. Those NPs which were both pre and postmodified had an initial frequency of 133 titles in 1971-1980 but reduced to 102 titles in the next decade (1981-1990). From there, the number of titles increased by 52 titles in 1991-2000. During the period of 2001-2010, the titles reduced by 43 and further reduced to 76 in the last eight years. Surprisingly, the nominal titles which were postmodified only also exhibited the same trend as those which were both pre and postmodified, except that the figures were smaller in the case of the latter, as can be seen in Table 11. The two structures' height of publications (230) within 1991-2000 coincided with the highest number of NP titles. Nominal titles which were not modified occurred in three different decades from 1971-1980, 1981-1990 and 1991-2000. It means that after 1991, there were no traces of titles which were not modified, probably because authors became conscious of packaging the content of their RAs well through the titles to assist readers under their studies better.

Postmodifiers of the NP titles in *JDI*

This subsection of the thesis presents the postmodifiers of the single unit nominal titles in the *JDI*. The postmodifiers of the nominal titles were explored further to determine the preferred structures of authors because the structures appeared to be the most common. Postmodifiers of the NP titles are given in extracts 90 to 95 to demonstrate how the authors employed them. Some of them were identified as prepositional phrases (PP) and others non-finite clauses (NFC).

Extract 90. *The Influence of Pharmaceutical Industry Advertising on Physician Prescribing* (PP)

Extract 91. *Issues in Research on the Older Woman of Color* (PP)

Extract 92. *Marijuana on a Small College Campus* (PP)

Extract 93. *Problems Related to Alcohol Consumption by Adolescents Living in the City of Porto Alegre, Brazil* (NFC)

Extract 94. *Methodological and Substantive Issues Involved in Using the Concept of Risk in Research into the Etiology of Drug Use among Adolescents* (NFC)

Extract 95. *The Beliefs Predicting Support for Heroin Legalization* (NFC)

In the four extracts provided (90 - 95), the postmodifiers are highlighted in bold. We can see that Extracts 90 to 92 are prepositional phrase postmodifiers to the nominal heads *Influence*, *Issues* and *Marijuana* respectively. Both PPs begin with their prepositional heads *of*, *in* and *on* respectively. Extracts 93 and 95 relate to non-finite clauses beginning with V-ed₂ (*Related* and *involved*) and V-ing (*Predicting*) respectively. The results of the frequency of occurrences of these postmodifiers are summarised in Table 12.

Table 12: The Distribution of Nominal Post-Modifications in the *JDI*

Period	PP (%)	-ing/-ed clause (%)	Total
1971-1980	166 (23)	-	166
1981-1990	132 (18)	1 (5)	133
1991-2000	204 (28)	7 (37)	211
2001-2010	148 (20)	8 (42)	156
2011-2018	87 (12)	3 (16)	90
Total	737 (97.5%)	19 (2.5%)	756

The results in Table 12 suggest that only two structural types of postmodifiers were used in modifying the nominal heads of the SUTs of *JDI*. These structures included the prepositional phrases and the non-finite clauses (-ing/-ed). We can see that the PPs comprised the highest frequency of the postmodifiers, as they occupied 97.5% of 756 postmodifiers identified whereas the NFC (-ing/-ed) had 2.5% with only 19 occurrences. The overwhelming preference for PP modifiers is not surprising because it is the commonest post-modifying structure found in the literature to compress more information in the nominal titles (e.g., Afful & Mwinlaaru, 2010; Cheng *et al.*, 2012; Moattarian & Alibabae, 2015). In terms of the number of postmodifiers since 1971, we can see that the first ten years had 166 PP postmodifiers, which reduced to 132 in 1981-1990. The next decade increased by 72 PP postmodifiers. There was a decrease in number by 56 in the 2001-2010 period, and finally continued its decrease to 87 postmodifiers of the NPs. Table 12 suggests that the NFC as a nominal postmodifier did not start in the first decade of study (1971-1980), as there was no record of its occurrence. This implies that the NFC was used as a postmodifier from the 1981-1990-year period with only one occurrence in 1985. In the 1991-

2000, the number of NFC for postmodifying NPs increased by six and increased again by one in 2001-2010. The last eight years decreased in number to three, maybe due to the absence of the two years records (2019 and 2020).

Punctuation in *JDI* Titles

Demarcating the different sections of the *JDI* titles with more than one proposition required punctuation marks. The punctuation marks identified were colon, question mark, dash and semicolon. Extracts 96 to 105 illustrate the various punctuation marks used to separate the parts of the titles of more than one unit or proposition.

Extract 96. *Religiousness, Spirituality, and Substance Use: A Genetically Sensitive Examination and Critique* (Colon)

Extract 97. *Drug Policies in Australia: Alternatives to Prohibitionism* (Colon)

Extract 98. *Heroin and Property Crime: An Australian Perspective* (Colon)

Extract 99. *How'd You Do It? Applying Structural Ritualization Theory to Drug Treatment Courts* (Question mark)

Extract 100. *Why Worry if the Whole Game is Up? Perspectives on Drug Education* (Question mark)

Extract 101. *Problem Drinking or Problem Thinking? Patterns of Abuse in Sociological Research* (Question mark)

Extract 102. *From Demon to Ally - How Mythology Has, and May Yet, Alter National Drug Policy* (Dash)

Extract 103. *Commonly Misused Drugs – The Facts* (Dash)

Extract 104. *Peer Intervention – An Exploratory Study* (Dash)

Extract 105. *HIV Seroprevalence Epidemics among Injecting Drug Users; New York City and Bangkok (Semicolon)*

We can see that from extracts 96 to 105 that all the titles are presented in more than one segment. The first component of each title was separated from the second section by the use of colons (96-98), question marks (99-101), dash (102-104) and semicolon (105) respectively. These demarcating marks were used as pointers to differentiate the title styles. The distributions of these punctuation marks are summarised in Table 13.

Table 13: Punctuation Marks Used in Demarcating the Title Segments

Period	: (%)	? (%)	- (%)	; (%)	Total
1971-1980	137 (15)	4 (9)	8 (42)	-	149
1981-1990	173 (20)	7 (21)	3 (16)	-	183
1991-2000	192 (22)	9 (21)	3 (16)	1	205
2001-2010	241 (27)	13 (30)	5 (26)	-	259
2011-2018	139 (16)	11 (25)	-	-	150
Total	882 (93.2)	44 (4.7)	19 (2.0)	1 (0.1)	946

The results from Table 13 indicate that four punctuation marks were employed to partition the titles which were presented in segments. We can see that colon had the highest frequency of 882 (93.2%), with 44 (4.7%) occurrences for question mark, 19 (2.0%) for dash and one (0.1%) for semicolon. The dash did not occur after 2007 till 2018. In terms of using them decade by decade, colon and question mark appear to demonstrate a common pattern of continuous increment in use until their reduction in 2011-2018. The use of colon increased by 36 from 1971-1980 to 1981-1990. There was a continuous increase by a margin of 19 from 1981-1990 to 1991-2000 and 49 from 2001-2010. There was

a large decrease of 102 in 2011-2018. Similar pattern can be observed in the use of question marks, except that the margins of increment were 3, 2, 4, and the reduction margin was 2. The pattern of using the dash started from a relatively high value of 8 and ended in high occurrence, although there was no record of it in the 1971-1980. The findings in this subsection confirm some finding but at the same time contradicts others. While some studies found increase in the use of colonic titles (e.g., Lewison & Hartley, 2005), others observed decrease (Hudson, 2016). Hudson found that colonic titles increased in the field of Economics but generally decreased in the science and humanities.

Comparison of *TBT* and *JDI* Titles

This section responds to research question 2. The section presents the discussion of the results of the titles published in the contents of the two journals *The Bible Translator (TBT)* within the field of arts or humanities and the *Journal of Drug Issues (JDI)* within the field of health sciences, by way of explaining and interpreting the findings of the results. The discussion is done under different subsections such as title length, title style, syntactic structures of SUTs, title modification and postmodifiers, and punctuation marks used in demarcating the components of double or multiple titles. The discussion is done in relation to what is either observed or provided on titles by empirical evidence.

Title Length

In this research, the length of title was considered as the number of words contained in the titles. The results in this research reveal that the average text length of titles in *TBT* was 8.3 words and that of *JDI* was 11.3 words. This finding is not surprising because, generally, it is argued that science titles are longer than titles produced in the arts or the humanities (Busch-Lauer, 2000; Haggan, 2004;

Fortanet *et al.*, 1997; Nagano, 2015). Kang & Yu (2011) indicate that the length of a particular genre identifies the text as unique. The differences in length might be due to the fact that authors tend to conform to the common practices and norms in their fields (Milojević, 2017). Based on this argument, we can conclude that the two journals can be differentiated based on the average text length of the titles produced. The range of average text length of the titles of the two journals in this study appears to be within the title text length commonly found in the literature. Evidence of studies suggests that the average title length is around 6.4 words and 13.8 words across different disciplines (e.g., Afful, 2017; Afful & Mwinlaaru, 2010; Alcaraz & Mendez, 2016; Gesuato, 2008; Haggan, 2004; Wang & Bai, 2007; Whissell, 1999).

The shortest titles in each journal was identified as one-word title or two, while the longest title was found to be 22 words in *TBT* and 34 words in the *JDI*. Although the specific length of titles is not explicit in the literature, Moss (2003, pp. 43-44) contends that authors should “avoid being very short and cryptic as the words in the title may be used by electronic search engines to identify and categorise papers”. According to Hudson (2016), one advantage of longer titles is to improve the information content of a paper to some extent but, at the same time, can deter people from reading it because it can lead to loss of concentration of the information it captures from the main text. It is commonly argued that a good title should be concise, informative and captivating to the reader (Day, 1998; Imbelloni, 2012; Liunbruno *et al.*, 2012). However, what constitutes a short or a long title is very diversified (Annesley, 2010; Peh & Ng, 2008). Letchford *et al.* (2015) argue that a shorter title provides easy understanding and improves the paper’s citation rate. While some writing guides and journals specify the number

of words required of a good title, others only describe a good title as the one which is concise, informative and attractive, thereby allowing the description to the discretion of the authors. *American Journal of Obstetrics and Gynecology*, for example, approximates a concise title to be of twelve words long, which is around the average text length in this study but less than the longest titles in this study. The Journal of Linguistics and Literature sets the longest title to be of 25 words. Swales and Feak (1994) claim that the length of a title differs from one discipline to another. Of course, Mack's (2018) expression that universally acceptable definition of a good title will be very difficult is justified to a very large extent.

The results of this thesis also indicate that the length of titles in the two journals increased continuously over time (from 1971 to 2018). This finding confirms the evidence that there has been some significant increase in the length of titles over time (e.g., Lewison & Hartley, 2005; Salager-Meyer *et al.*, 2017; Milojević, 2017; Whissell, 2012). Swales and Feak (1994, p. 206) argue that science titles, especially, "are becoming longer". This claim has been confirmed in this research; however, the evidence from the *TBT* titles also suggests that it is not only the science titles that are becoming longer, but also those in the humanities. Also, specific instance can be seen in the finding of Salager-Meyer *et al.* (2017) that a general 40% increase in the title length of 360 titles studied in the disciplines of complementary and alternative medicine was observed. The continuous increase in the average text length of titles might be due to the fact that authors find it more appropriate to provide details about their studies through the title because it is argued that the title is the most important part of a research paper because it is through the title that readers get to know the entire paper (Jamali & Nikzad, 2011).

Title Style

In this research, the results of the titles from the two journals indicate that three title styles were identified: those which were presented in a single component (Single-Unit Title/SUT), two components (Double Unit Title/DUT) and three components (Multiple Unit Title/MUT).

The SUTs were the most frequently used titles but differed in terms of their frequencies of occurrence in the two journals. While the *TBT* recorded 63% of its use, *JDI* recorded 50.9%; this finding is in contrast with Moattarian and Alibabae (2015) who found that the use of SUT in science is more frequent than in humanities. The closeness of using SUT and DUTs in the *JDI* is in line with what Gesuato (2008) found in the field of linguistics. The domination of the Single Unit Titles in this research is in consonance with the findings of some studies (e.g., Afful, 2017; Alcaraz & Mendez, 2016; Gesuato, 2008; Moattarian & Alibabae, 2015). On the other hand, it contradicts other findings that titles of two segments are most dominant (e.g., Cheng *et al.*, 2012; Hartley, 2007; Milojević, 2017). The use of DUTs in both journals increased over time but the frequency in *JDI* was higher than *TBT*, thereby agreeing with what Fox and Burns (2015) found in science. Although the three-component titles (MUTs) were the least in the two journals, their occurrence in *TBT* was a little higher than they occurred in the *JDI*.

Syntactic Structures of the SUTs

The syntactic structures of the SUTs in this research comprised title structures in the form of a noun phrase (NP), non-finite clause (NFC), question (Q), declarative sentence (DS) and the prepositional phrase (PP).

NP titles were the most dominant structures in both *TBT* and the *JDI*, followed by NFC, Q, DS and lastly PP. The most frequent use of NP titles is already documented in the literature (e.g., Afful, 2017; Alcaraz & Mendez, 2016; Gesuato, 2008; Moattarian & Alibabae, 2015; Salager-Meyer *et al.*, 2017). This might be due to the fact that the NP title is easier to construct than the other structures. Its ability to compress more information might be another factor for its preference. There was a continuous decrease in the use of NP titles across time in *TBT*, which confirms Salager-Meyer *et al.* (2017). However, there was no observed continuous decrease or increase in the *Journal of Drug Issues*.

The non-finite clause (NFC) titles were not often used much but their frequency in the *TBT* was relatively higher than that of *JDI*. As the NFC titles decreased over time in *TBT*, it increased in the *JDI*. On interrogative titles, the two journals reported their use but the rate of occurrence was less than ten percent each, although it was relatively higher in *TBT* than *JDI*. Although a question title is not all that frequently used, its occurrence has generally increased over time (Ball, 2009; Lewison & Hartley, 2005; Milojević, 2017), unlike the findings in this current research. Declarative sentence (DS) titles occurred as the fourth used title in both journals but it occurred as the second-best choice in applied linguistics, dentistry and civil engineering in the study of Moattarian and Alibabae (2015). Salager-Meyer *et al.* (2017) reported that the DS titles decreased over time in science titles, which contrasts the finding of Fox and Burns' (2015) study. This observation was generally confirmed by the current research in respect of declarative sentence titles. The least use of PP as a syntactic title structure in SUTs is already established in the literature (Moattarian & Alibabae, 2015).

Post-modifications and Postmodifiers of Nominal Structures

The modification of the most common syntactic structure, NP, was investigated to understand how it was presented. The research found some common results in the two journals under study, that some of the nominal heads were predominantly both pre-modified and postmodified, which was followed by those nominal structures which were postmodified only, those pre-modified only and lastly unmodified heads. Both pre and post-modified nominal title structures became dominant possibly because it allowed authors the opportunity to pack more compressed information before the headwords and after their heads to present clearer information. This finding contradicts the results of Moattarian and Alibabae (2015) to some extent. Unlike the most common use of both pre and post-modification in the current study, Moattarian and Alibabae, found the post-modified only structures to be the first choice across the fields of applied linguistics, dentistry, and civil engineering. Apart from this difference, the occurrence of the rest of the modifications remained the same in the two research works, as nominal structures pre-modified titles only became the third choice and unmodified NP titles became the least used. In terms of trends over years, there was relative decrease in the frequency of both pre and post-modified title structures, and post-modified only title structures in *TBT* but showed inconsistent trends in the two in the *JDI*.

Because post-modification of NP titles was very frequent in the titles of both journals, this study developed interest in exploring it further. The results confirmed the common findings in the literature, that the prepositional phrase (PP) is the best choice for authors to use to compress the information content of their articles in nominal structures (Afful & Mwinlaaru, 2010; Greenbaum, 1996).

This means that the PP is the most dominant postmodifier of the nominal structure. It is argued that the PPs used in the modification of nominal structures gives a clearer focus of a research topic (Biber *et al.*, 1999; Cheng *et al.*, 2012).

Demarcating Markers

With respect to the punctuation marks used in demarcating the double or multiple unit titles, this research found colon to be the most common in both *The Bible Translator (TBT)* and the *Journal of Drug Issues (JDI)*. This finding is not different from the fact that colonic titles dominate in all studies that investigated the punctuation marks used in partitioning the segments of titles of more than one segment (e.g., Alcaraz & Mendez, 2016; Anthony, 2001; Lewison & Hartley, 2005). Hudson (2016) argues that colon use is more frequent in humanities than the sciences. Hudson's claim defies the findings of this research because the *Journal of Drug Issues* (in the field of science) recorded 93.2% of colonic titles while *The Bible Translator* (in the domain of humanities) recorded 74.3% use of colons as demarcating markers. In terms of trends of its use, the findings in this research confirm already findings in the literature that the use of colon increased (e.g., Lewison & Hartley, 2005). However, the opposite of this finding was found by other studies that the use of colon decreased over time (e.g., Hudson, 2016).

Apart from the use of colons, there were other punctuation marks used in partitioning the double/multiple unit titles. From this research, question marks became the second highest use of demarcating marks in the two journals under study. Although not so high, the use of question marks was more frequent in *TBT* than the *JDI*. The records in both journals indicated that the question marks increased over the period of 48 years. Besides, the use of dash was found in the titles of both journals but *TBT* had higher percentage than the *JDI*, in spite of the

fact that the percentages in the two journals were less than 8.0% in each case. While the use of dash decreased in *TBT*, it was not consistent in the *JDI*. Although other punctuation marks used in the two journals occurred less than 3.0% in each case, their differences seem to uniquely identify the two journals. Whereas the *JDI* used a semicolon in partition titles, *TBT* titles employed the use of full stops, commas and exclamation mark.

Chapter Summary

This chapter has presented the results and the discussion of the structural organisations of titles of the two journals in focus. The analysis was based on Dietz's model of analysing title structures. The results were presented in tables and pictorial formats to enhance understanding. The results were presented based on individual journals. The second section of the results compared the results of the two journals to establish the similarities and differences between them. The chapter ended with the discussion of the results. In short, the results indicated that the titles of the two journals shared certain features in common but differences existed.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Introduction

This chapter presents the summary, conclusion, and recommendations of the research. The chapter, specifically, provides the summary of the main findings, conclusion, recommendations and implications. The purpose of the research, the questions, methodology, and the approaches employed in this research are summed up before the key findings of the study. The thesis ends with conclusion, recommendations, and implications of the study.

Summary

The purpose of this research was to explore the diachronic structural organisation of titles published across *The Bible Translator* and the *Journal of Drug Issues* which relate to the respective fields of religion and health science. The study identified the length of title, title style, and syntactic structures of SUTs, nominal modifications, postmodifiers of NPs, and demarcating marks for separating Single or Multiple-Unit Titles. These variables were studied through the perspective of the taxonomy of Dietz' (1995, cf Moattarian & Alibabae, 2015). Two research questions directed the focus of the study: (1) How are the structural organisations of titles of *The Bible Translator* and the *Journal of Drug Issues* organised since 1971 to 2018? (2) What are the differences and similarities between the titles of the two journals diachronically?

The mixed method approach was found to be appropriate in answering the research questions which prompted this research. Qualitatively, the content analysis perspective which involves textual analysis was useful in the description of the variables involved in this study. Some descriptive aspects of quantitative

approach (such as percentages) were used to present the results and organise the data clearly in order to enhance understanding of the issues studied in this research. The purposive sampling approach was used in selecting the data for the research.

Key Findings

Based on Dietz' (1995 cf Moattarian & Allibabae, 2015) framework of analysing the syntactic structures of titles, this research diachronically explored 1,027 titles of *The Bible Translator (TBT)* journal and 1,926 titles of *Journal of Drug Issues (JDI)* from 1971 to 2018 in the domains of religion and health science respectively. It should be noted that the titles were organised decade-by-decade each, except the final years which were only eight years due to the records available at the time of data collection.

The following findings were identified in the study and they are presented according to the research questions which guided the study.

Research Question One: How are the structural organisations of titles of *The Bible Translator* and the *Journal of Drug Issues* organised since 1971 to 2018? Research question one was meant to identify the structural elements of titles diachronically in the two journals studied, paying specific attention to title length, title style, syntactic structures of the Single Unit Titles (SUTs), Post-modifications, post-modifiers of the NP titles and demarcating marks.

The Bible Translator (TBT)

For the period of 48 years (1971–2018), the average title length was found to be 8.3 words. The average text length by decades increased from 7.4 words

(1971-1980) to 11.4 words (2011-2018). The longest title was 22 words while the shortest title was made up of one word.

Three title styles were identified: Single-Unit Title (SUT), Double-Unit Title (DUT) and Multiple-Unit Title (MUT). The highest title style was the SUT (63.0%) which decreased in the number of uses continuously across time. The second frequent title style was the DUT (34.8%) which increased in its use over the years. The MUT (2.2%) did not show any specific pattern of use.

The syntactic structures of the SUTs were made of Noun Phrase (NP), Non-Finite Clause (NFC), Question (Q), Declarative Sentence (DS), and Prepositional Phrase (PP). The most frequent structure was the NP title (67.0%) and its use decreased continuously over time. The second highest occurrence was the NFC title (18.9%), which decreased generally across time but increased in between 1981-1990. As the third choice, Question title (9.5%) did not indicate any pattern of use over time. DS titles (2.5%) and PP titles (2.1%) showed no patterns of occurrence with respect to time.

In terms of modification of the NP heads, 59.0% were Both Pre and Post-modified, 23.7% were Post-modified Only, 14.6% were Pre-modified Only and Unmodified structures were only 2.7%. There was continuous increase in the NP heads which were Both Pre and Post-modified, as well as those which were Unmodified over the 48 years. The other structures did not show any pattern of use across years.

Three syntactic structures were used to postmodify the NP heads: Prepositional Phrase (PP), Non-Finite Clause (NFC) and Relative Clause (RC). The most frequent post-modifier was the PP (96.1%), followed by the NFC (3.6%) and then one occurrence of the RC in 1976. The PP showed continuous

decrease over time, which correlated with decrease in titles over the 48 years. The NFC did not indicate any regular pattern of use.

In order of occurrence, the punctuation marks used in partitioning the Double and Multiple-Unit Titles were Colon (74.3%), Question mark (13.5%), Dash (7.5%), Full stop (2.6%), Comma (1.8%) and one occurrence of Exclamation mark in 1978. Colon and Question uses increased over time while Dash and Full stop showed inconsistent general decrease.

Journal of Drug Issues (JDI)

Over the 48 years, the average text length of *JDI* was recorded as 11.3 words. The average for each decade increased diachronically from the average of 8.9 words (1971-1980) to 14.3 words (2011-2018). Generally, the longest title was made up of 34 words but the shortest consisted of one-word title.

The three title styles identified the *JDI* included Single Unit Title (SUT), Double Unit Title (DUT) and Multiple Unit Title (MUT). The SUTs (50.9%) occurred slightly frequent than the DUTs (48.7%). The least frequent style was the MUTs (0.4%). The DUTs increased continuously over time but the SUTs did not exhibit continuous decrease, despite the fact that there was general decrease across time. There was no normal pattern for the use of MUTs.

The five syntactic structures of the SUTs occurred in the order of Noun Phrase (NP) with 89.0%, Non-Finite Clause (NFC) with 6.6%, Question (Q) with 2.2%, Declarative Sentence (DS) with 1.2% and lastly Prepositional Phrase (PP) with 0.9%. Generally, the NP titles decreased over time but was not continuous. The NFC showed continuous increase in its use across time. DS decreased continuously over time but Q titles did not show continuous decrease. PP titles did not exhibit any pattern of its use but its last use was recorded in 2004.

Concerning the NP heads post-modification, those which were Both Pre and Post-modified were the most frequent with 66.1%, followed by those Post-modified only (21.4%), Pre-modified Only with 11.6% and Unmodified structures with 0.9%. There was a continuous decrease over years in those which were Both Pre and Post-modified, and Pre-modified Only. Those Post-modified Only and those Unmodified did not indicate any regular pattern of use over time.

Only two post-modifiers of the NP titles were identified: Prepositional Phrase (PP) with 97.5% and Non-Finite Clause (NFC) with 2.5%. Over time, both post-modifiers did not exhibit any regular pattern of occurrence.

To demarcate the titles with more than one segment, four punctuation marks were used: Colon (93.2%), Question mark (4.7%), Dash (2.0%), and Semicolon with only one occurrence in 1997. Colon and Question mark increased continuously over the 48 years studied. Dash did not increase or decrease with any normal pattern.

Question Two: What are the differences and similarities between the titles of the two journals diachronically? The main focus of this question was to compare and contrast the structural elements of titles published in *The Bible Translator (TBT)* and the *Journal of Drug Issues (JDI)* between 1971 and 2018. The following findings were derived from the analysis of the occurrences of titles in the two journals, presented under the variables studied in this research.

Text Length

The general average title length for *TBT* was 8.3 words while that of *JDI* was 11.3 words. The text length for both journals increased continuously over the 48-year period. The longest title constructed within the 48-year period studied for *JDI* was longer (34 words) than *TBT* (22 words)

Title Style

Both journals recorded three titles styles: Single Unit Title (SUT), Double Unit Title (DUT) and Multiple Unit Title (MUT). Although the SUTs in both journals decreased over time, the frequency of the SUT in *TBT* (63.0%) was a little higher than that of the *JDI* (50.9%). Despite the fact that the DUTs in both journals increased over time, the use of DUT in *JDI* (48.7%) was relatively higher than the *TBT* (34.8%). The use of MUT (10.8%) was higher in *TBT* than *JDI* (0.4%).

Syntactic Structures of the SUTs

Both journals recorded five different syntactic structures in presenting the SUTs: Noun Phrase (NP), Non-Finite Clause (NFC), Question (Q), Declarative Sentence (DS), and Prepositional Phrase (PP). The use of NP titles in the *JDI* (89.0%) was relatively higher than the frequency recorded in *TBT* (67.0%). While the NP titles decreased continuously in its use over time in *TBT*, its trends in the *JDI* was not consistent. The frequency of NFC titles in *TBT* (18.9%) occurred higher than those found in *JDI* (6.6%). As the NFC titles decreased over time in *TBT*, the *JDI* recounted an increase in its use. The use of question titles in *TBT* (9.5%) was relatively more than those in *JDI* (2.2%). The occurrence of DS (2.5%) and PP (2.1%) titles in *TBT* became slightly more than those in the *JDI* (1.2% and 0.9% respectively).

Nominal Modifications

In both journals, some of the nominal heads of the SUTs were pre-modified only, some were postmodified only, others were both pre and postmodified, while some were not modified at all. The NP with both pre and post-modifications in both journals were the most frequent structures, but what

occurred in *JDI* (66.1%) was somewhat higher than those seen in *TBT* (59.0%). As this NP structure decreased continuously in its use over time in *TBT*, its use in the *JDI* did not show any regular pattern. NP titles which were postmodified only became second highest of occurrence in both journals, they showed almost the same frequencies in both journals, as *TBT* recorded 23.7% for *JDI* to record 21.4%. The use of this structure decreased continuously in *TBT* while the *JDI* did not show any consistent trend. The pre-modified only nominal structures occurred slightly higher in *TBT* (14.6%) than the *JDI* (11.6%). Although the nominal structures which were not modified occurred less frequently in both journals, their occurrence in *TBT* (2.7%) was relatively higher than those recorded in the *JDI* (0.9%).

Postmodifiers of the NP Titles

While NP titles in *TBT* were post-modified by three different structures: Prepositional Phrase (PP), Non-Finite Clause (NFC) and Relative Clause (RC); those in the *JDI* were postmodified by two different structures (PP and NFC). The PPs as the postmodifiers of the NP titles was the highly preferred choice in the two journals and their frequencies occurred almost at the same rate, 97.5% in *JDI* and 96.1% in *TBT*. While the trend of PP decreased continuously over time in *TBT*, the trend in *JDI* was not consistent. The NFC as a postmodifier occurred in *TBT* (3.6%) a little more than it was used in the *JDI* (2.5%).

Demarcating Markers

Whereas in *TBT* colon, question mark, dash, full stop, comma, and exclamation marks were used in segmenting the components of titles of more than one section, colon, question mark, dash and semicolon were used in the *JDI*.

Although colons were used more than the rest of the punctuation marks to partition segments of titles in both journals, the *JDI* (93.2%) recorded higher use than the *TBT* (74.3%). The use of colons in both journals increased continuously over time. Question marks for demarcating titles in *TBT* (13.5%) was relatively more than the use in the *JDI* (4.7%). The used of question marks increased over time in both journals.

The use of dash (7.5%) in *TBT* was higher than it was use in the *JDI* (2.0%).

Conclusion

The results of this study have indicated different patterns of title development across time. For instance, while some titles showed relative decrease in use (e.g., Single-Unit Titles), some increased their uses over time (e.g., Double-Unit Titles). Some did not exhibit any pattern of development diachronically (e.g., Prepositional Phrase titles in both journals). What can be argued to be uniform is the development of average text length of titles in the two journals studies, that the titles increased in length over the period of the years studied.

The debate about the explicit number of words of title regarded appropriate has been relatively resolved by this study. Although the shortest title was found to be made up of one word and longest to be thirty-four words, the findings have argued that such titles were not frequent. What is important is that the average title length ranged between 7.4 words (from *The Bible Translator*) and 14.3 (from the *Journal of Drug Issues*), suggesting and confirming the common observations that science titles are longer than those in the humanities.

The findings of this study have demonstrated that different ways of writing RA titles have been used in different disciplines. Interestingly, the two journals have demonstrated common use of three types of titles styles (Single,

Double and Multiple Unit Titles). This might be due to the fact that those who construct titles of their research papers do not only read titles in their field alone, but also other disciplines. It can, therefore, be argued that it is reading empirical evidence provided by works like the current research that will inform scholars about what is meant by short and precise titles required of authors.

Implications of the Study

This research has some important implications for research, pedagogy, and theory. Concerning research, the results of this study can be used as empirical evidence to support arguments regarding the construction of titles because the results have gone through vigorous studies and scrutiny. Those who are interested in conducting research in the area of titles can use this study as a guide.

This research has tested the framework put forward by Dietz to analyse titles in various disciplines. Although the framework is useful, this research has explored some areas which were not directly captured by the framework. For instance, demarcating markers are not in the framework but this study extended its scope to explore them. The framework also accounts for only two title styles (Single and Multiple Units) but this study has also explored three title styles (Single, Double and Multiple Units).

Lastly, not only does this study inform research, but also pedagogy. Based on the findings of this study, curriculum developers and teachers, particularly in the disciplines of religion and science, can use the information from this research to impart knowledge to students without difficulties because this study carries in-depth knowledge of what can be used in the classroom in relation to title writing. It means that the findings can support teaching and learning of title construction in writing thesis or research articles for publication in a specific field because the

major part of what one needs to know has been discussed in this research. Those who intend to write titles for specific purposes can benefit greatly from this study because different ways of constructing acceptable titles have been extensively revealed by this study.

Recommendations for Further Studies

This present study makes some recommendations for further studies. Firstly, this research recommends that further studies be conducted to pay more attention to the informative content of the titles which were of more than one focus. This is to say that this study could not pay detailed attention to the Double-Unit and Multiple-Unit titles. Paying attention this area could have made this research work clumsy as the focus and title did not capture it. Further studies can reveal interesting findings about the information content of such title styles. Further studies can also compare Single-Unit Titles in order to establish similarities and differences in the title styles.

Secondly, further studies can pay attention to the structural combinations of the titles with more than one focus. This can also be an interesting area to explore in order to explore the syntactic structures of the Double and Multiple Unit Titles.

Lastly, this study recommends that a further study is conducted using the combined approach of textual and ethnographic since this study has been mainly textual in approach. The combination of the ethnographic and the textual approaches will assist in soliciting information directly from authors regarding their views on the construction of title. The combination of the ethnographic as well as the textual approaches will reveal interesting findings in relation to the variables this study focused on.

REFERENCES

- Afful, J. B. A. (2017). A linguistic analysis of conference paper titles in applied linguistics. *International Journal of Foreign Language Teaching and Research*, 5(18), 11-25.
- Afful, J. B. A. & Mwinlaaru, I. (2010). Commonality and individuality in academic writing: An analysis of conference paper titles of four scholars. *ESP Worlds*, 1/927(9), 1-32.
- Alcaraz, M. A. & Mendez, D. I. (2016). When astrophysics meets lay and specialised audiences: Titles in popular and scientific paper. *Journal of Language and Communication*, 3(2), 133-146.
- Alimoradi, F., Javadi, M., Mohammadpoorsl, A., Moulodi, F. & Hajizadeh, M. (2016). The effect of key characteristics of the title and morphological features of published articles on their citation rates. *Annals of Library and Information Studies*, 63, 74-77.
- Annesley, T. M. (2010). Title says it all. *Clinical Chemistry*, 56(3), 357-360.
- Anthony, L. (2001). Characteristic features of research article titles in computer science. *IEEE Transactions of Professional Communication* 44(3), 187-194.
- Ball, R. (2009). Scholarly communication in transition: The use of question marks in the titles of scientific articles in medicine, life sciences and physics 1966-2005. *Scientometrics*, 79(3), 667-679.
- Bavdakar, S. B. (2016). Formulating the right title for a research article. *Journal of the Association of Physicians of India*, 64, 53-56.
- Best, J. W. & Kahn, J. V. (1998). *Research in education*. (8th ed.). Boston: Allyn and Bacon.

- Biber, D., Johansson, S., Leech, G., Conrad, S. & Finegan, E. (1999). *Longman grammar of spoken and written English*. England: Longman.
- Branson, R. D. (2004). Anatomy of a research paper. *Respiratory Care*, 49(10), 1222-1228.
- Busch-Lauer, I.A. (2000). Titles of English and German research papers in medicine and linguistics theses and research articles. In A. Trosborg (Ed.) *Analysing professional genre*(pp.77-94). Amsterdam/Philadelphia: John Benjamin
- Cheng, S. W., Kuo, C. & Kuo, C. (2012). Research Article Titles in Applied Linguistics. *Journal of Academic Language and Learning*, 6 (1), A1-A14.
- Cook, D. A., Beckman, T. J. & Bordage, G. (2007). A systematic review of titles and abstracts of experimental studies in medical education informative elements missing. *Medical Education*, 41(11), 1074-1081.
- Day, R. A. (1998). *How to write and publish a scientific paper*. (5th ed.). India: The ORYX Press.
- Dedhia, J. Mukherjee, E., Mehta, N. & Pawar, A. M. (2017). The art of writing a scientific research paper – A guide to beginners. *Journal of Conservative Medicine and Dentistry*, 5(3), 11-18.
- Fischer, B. A. & Zigmond, M. J. (2004). Components of a research article. Retrieved from www.survival.pitt.edu
- Fortanet, G. I., Coll, G. J. F., Palmer, S. J. C., & Posteguillo, G. S. (1997). The writing of titles in academic research articles. In R. C. Marín & A. R. Navarrete (Eds.) *Lenguas aplicadas a las ciencias y la tecnología: Aproximaciones* (pp. 155-158) Cáceres (Spain): Servicio de Publicaciones de la Universidad de Extremadura.

- Fortanet, G. I., Posteguillo, S., Coll, J. F., & Palmer, J. C. (1998). Linguistic analysis of research article titles: Disciplinary variations, In Ignacio Vázquez Orta, & Ignacio.
- Fox, C. W. & Burns, C. S. (2015). The relationship between manuscript title structure and success: Editorial decisions and citation performance for an ecological journal. *Ecology and Evolution*, 5(10), 1970-1980.
- Fumani, M. R. F. Q., Goltaji, M. & Parto, P. (2015). The impact of title length and punctuation marks on article citations. *Annals of Library and Information Studies*, 62 (1), 126-132.
- Gesuato, S. (2008). Encoding of information in titles: Practices across four genres in linguistics. In C. Taylor (Ed.). *Ecolingua: The role e-copora in translation and language learning* (pp.127-157). Trieste: Edizioni Università di Trieste.
- Goodman, R. A. Thacker, S.B. & Siegel, P.Z. (2001). What's in the title? A descriptive study of articles in peer-review medical journals. *Science Editor*, 24 (24), 75-78.
- Grant, J. M. (2013). What makes a good title? *Health Information and Libraries Journal*, 30 (4), 259-260.
- Greenbaum, S. (1996). *English grammar*. Oxford: Oxford University Press.
- Gustavii, B. (2008). *How to write and illustrate scientific papers*. (2nd ed.). UK: Cambridge University Press.
- Habibzadeh, F. & Yadollahie, M. (2010). Are shorter articles more attractive for citation? Cross-sectional study of 22 scientific journals. *Scientometrics*, 51, 165-170. Doi:10.3325/cmj.2010.51.165

- Haggan, M. (2004). Research paper titles in literature, linguistics and science: Dimensions of attraction. *Journal of Pragmatics*, 36 (2), 293-317.
- Hall, G. M. (2003). Structure of a scientific paper. In G. M. Hall (Ed.), *How to write a paper* (pp. 42-50). (3rd ed.). London: BMJ Publishing group.
- Hartley, J. (2007). Planning that title: Practices and preferences for titles with colons in academic articles. *Library and Information Science Research*, 29: 553-568.
- Hartley, J. (2008). *Academic writing and publishing: A practical handbook*. London & NY: Routledge.
- Hudson, J. (2016). An analysis of the titles of papers submitted to the UK REF in 2014: Authors, disciplines, and stylistic details. *Scientometrics* 109(1), 871-889.
- Imbelloni, L. E. (2012). Scientific articles' titles: Thanks for the information contained in your title. *Revista Brasileira de Anestesiologia*, 62(2), 139-140.
- Jamali, H. R. & Nikzad, 2011). Article title type and its relation with the number of downloads and citations. *Scientometrics*, 88(2), 653-661.
- Kang, N & Yu, Q. (2011). Corpus-based stylistic analysis of tourism English. *Journal of Language Teaching and Research*, 2(1), 129-136.
- Kerans, M. E., Murray, A. & Sabate, S. (2016). Content and phrasing in titles of original research and review articles in 2015: Range of practice in four clinical journals. *Publications*, 4(11), 1-22.
- Kotzé, T. (2007). *Guidelines on writing a first quantitative academic article*. (2nd ed.). Department of Marketing and Communication Management, University of Pretoria. Retrieved from <https://btsau.edu.ua.scopus>.

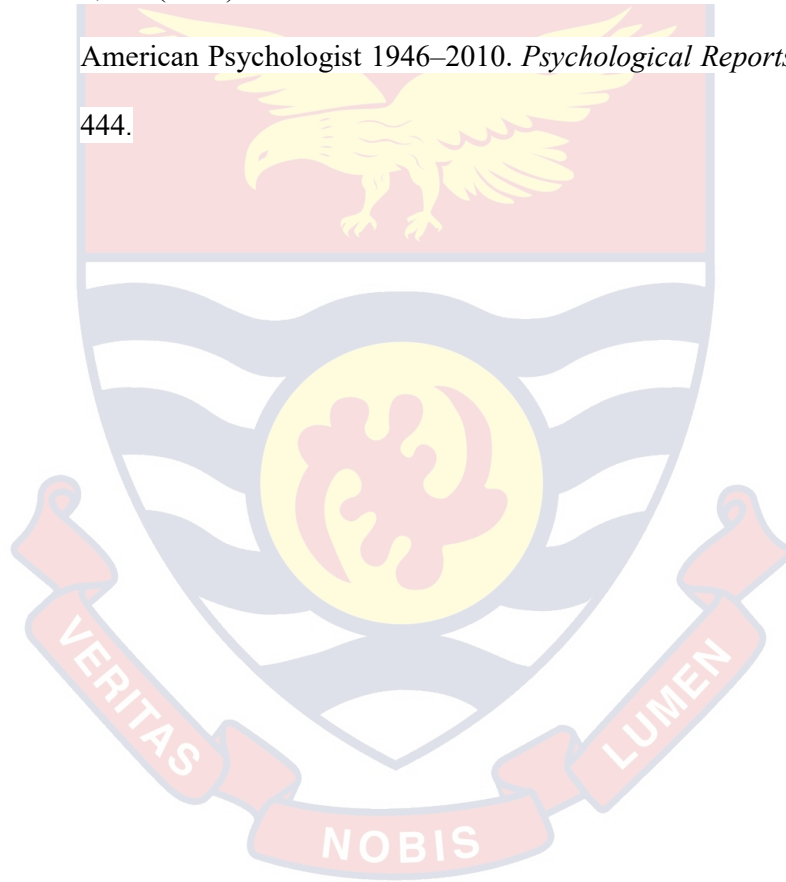
- Letchford, A., Moat, S. H. & Preis, T. (2015). The advantage of short paper titles. *Royal Society Open Science*, 2(8), 150266. Doi:10.1098/rsos.150266. assessed at <https://www.ncbi.nlm.gov>.
- Lewison, G. & Hartley, J. (2005). What's in a title? Number of words and the presence of colons. *Scientometrics*, 63(2), 341-356.
- Liumbruno, G. M., Velati, C., Pasqualetti, P., & Franchini, M. (2013). How to write a scientific manuscript for publication. *Blood Transfus*, 11, 217-226.
- Mack, C. A. (2018). *How to write a good scientific paper*. Washington: SPIE.
- Martin, J. R. (1984). Language, register and genre. In F. Christie (Ed.). *Language studies: Children's writing: Reader*. Geelong: Deakin University Press.
- Milojević, S. (2017). The length and semantic structure of article titles – Evolving disciplinary practices and correlations with impact. *Frontiers in Research Metrics and Analytics* 2(2), doi:10.3389/frama.2017.00002.
- Mishra, S., Chopra, D., Jauhuri, N. & Mishra, A. N. (2018). Critical review of a scientific publication: An insight. *International Journal of Advanced Community Medicine*, 1(1), 10-13.
- Moattarian, A. & Alibabae, A. (2015). Syntactic structures in research article titles from three different disciplines: Applied linguistics, civil engineering, and dentistry. *The Journal of Teaching Language Skills*, 7 (1), 27-50.
- Moss, F. (2003). Titles, abstracts and authors. In G. M. Hall (Ed.), *How to write a paper* (pp. 42-50). (3rd ed.). London: BMJ Publishing Group.
- Nagano, R. (2015). Research article titles and disciplinary conventions: A corpus study of 8 disciplines. *Journal of Academic Writing*, 5(1), 133-144.

- Peh, W. C. G. & Ng, K. N. (2008). Title and title page. *Singapore Medical Journal*, 49(8), 607-609.
- Sahragard, R. & Meihami, H. (2016). A diachronic study on the information provided by the research titles of applied linguistics journals. *Scientometrics*, 108(3), 1315-1331
- Salager-Meyer, F., Lewin, B. A. & Briceno, & Briceno, M. L. (2017). Neutral, risky or provocative? Trends in titling practices in complementary and alternative medicine articles (1995-2016). *Revista de Lenguas para Fines Especificos*, 23(2), 263-289.
- Soler, V. (2007). Writing titles in science: An exploratory study. *English for specific purposes*, 26(1), 90-102.
- Shankar, P. R. (2012). What do reviewers look for in an original research article? *Journal of Nepal Medical Association*, 52(2), 95-101.
- Swales, J. (1990). *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.
- Swales, J., & Feak, C. (1994). *Academic writing for graduate students: Essential tasks and skills*. Ann Arbor: University of Michigan Press.
- Trosborg, A. (1984). (Ed.). (2000) *Analysing professional genres*. (Vol. 74). John Benjamin's Publishing Company, Amsterdam.
- Tullu, M. S. & Karande, S. (2017). Writing a model research paper: A roadmap. *Journal of Postgraduate Medicine*, 13(3), 143-146.
- Wang, Y. & Bai, Y. (2007). A corpus-based syntactic study of medical research article titles. *System*, 35(3), 388-399.

Webster, G. D., Jonason, P. K., & Schember, T. O. (2009). Hot topics and popular papers in Evolutionary Psychology: Analyses of title words and citation counts in *Evolution and Human Behaviour*, 1979-2008. *Evolution Psychology*, 7(3), 348-362.

Whissell, C. (1999). Linguistic complexity of abstracts and titles in highly cited journals. *A Perceptual and Motor Skills*, 88(1), 76-86

Whissell, C. (2012). The trend toward more attractive and informative titles: American Psychologist 1946–2010. *Psychological Reports*, 110(2), 427-444.



APPENDICES

APPENDIX A: Some examples of titles from *Journal of Drug Issues*

1971

- 1) The Challenge of Drug Abuse
- 2) Law Enforcement and the Traffic in Illicit Drugs
- 3) The Man on the Street Has Some Questions
- 4) Marihuana and Automobile Crashes
- 5) Commonly Misused Drugs — The Facts

1972

- 6) Social Correlates of Non-Medical Drug Use
- 7) Methadone without Mystery
- 8) Rejection of the Source in Drug Education
- 9) Addiction Control: Myths from Abroad
- 10) Is the Mischief in Drugs or in People?

1979

- 11) Drug Use and Misuse among the Elderly
- 12) Considerations in Drug Therapy of the Elderly
- 13) An Update on Drug Dependence in the Elderly
- 14) Are Hypnotics Helpful or Harmful to Elderly Patients?

1980

- 15) Hormonal Alteration in the Female Athlete
- 16) Amphetamine Use, Physical Activity and Sport
- 17) Blood Doping in Sports
- 18) Running High: Enkephalin Indicted
- 19) The Use of Anabolic Steroids in Athletics

20) The Use of Vitamin and Mineral Supplements by Athletes

1981

21) Rethinking the Alcohol Problem: A Natural Processes Model

22) Problem Drinking or Problem Thinking? Patterns of Abuse in Sociological Research

23) The Relationship between Changing Societal Economies and Alcohol Use: A Case for Tolerance Quotient Expansion

24) Alcohol Abuse as a State: Illustrations of the 'Structuration Model'

25) 'Alcoholism in America' Revisited

1985

26) Current Social Thought on Alcohol and Marijuana: A Quantitative Exploration

27) The Social Thought of Alcoholics

28) Social Thought, Social Movements and Alcoholism: Some Implications of AA's Linkages with other Entities

29) Euphoria

30) Communist Ideology and the Substance Abuser: A Peripatetic Look at the Use of the Medical Paradigm to Oppress Political Deviants

1995

31) Number of Sex Partners and Crack Cocaine Use: Is Crack an Independent Marker for HIV Risk Behavior?

32) Perceived Risks and Criminal Justice Pressures on Middle Class Cocaine Sellers

33) Women at High Risk for HIV: Pregnancy and Risk Behaviors

34) Strategies for Improving Coordination between Enforcement and Treatment Efforts in Controlling Illegal Drug Use

1996

35) Unknown, Unexplored, and Unseen Populations: An Introduction into the Truly Hidden Worlds of Drug and Alcohol Research

36) Hidden Populations and the Gaze of Power

37) Mechanisms of Noncompletion in Ethnographic Research on Drugs: Results from a Secondary Analysis

38) The Elephant That No One Sees: Natural Recovery among Middle-Class Addicts

2000

39) Developing Computer Assisted Interviewing (CAI) for the National Household Survey on Drug Abuse

40) A Comparison of Confidential versus Anonymous Survey Procedures: Effects on Reporting of Drug Use and Related Attitudes and Beliefs in a National Study of Students

41) An Experiment to Enhance the Reporting of Drug Use by Arrestees

42) An Evaluation of the Effects of Interviewer Characteristics in an RDD Telephone Survey of Drug Use

43) Response Reliability and the Study of Adolescent Substance Use Progression

2005

44) The Colombian Competitive Advantage in Illegal Drugs: The Role of Policies and Institutional Changes

45) Change and Continuity in U.S.-Colombian Relations and the War against Drugs

- 46) Construction and Contestation of Criminal Identities: The Case of the “Cocaleros” in the Colombian Western Amazon
- 47) Colombia: The Link between Drugs and Terror
- 48) Strategies for Controlling the Drug Supply: Policy Recommendations to Deal with Illicit Crops and Alternative Development Programs

2015

- 49) Using a Group-Based Trajectory Approach to Assess Risk and Protective Factors of Marijuana Use
- 50) Different Patterns of Drug Use and Barriers to Continuous HIV Care Post-Incarceration
- 51) Evaluating Alternative Aftercare Models for Ex-Offenders
- 52) Relationship Between Low-Income Patient Census and Substance Use Disorder Treatment Programs’ Availability of Tobacco Cessation Services
- 53) How General Is the General Theory of Crime? Using Self-Control to Predict Substance Use Between Sexual Orientation Groups

2018

- 54) The Silent Majority? College Students’ Views, Conditions, and Reactions to Drunken Facebook Posts
- 55) Medical Marijuana and Crime: Substance Use and Criminal Behaviors
- 56) Instantly Hooked? Freebies and Samples of Opioids, Cannabis, MDMA, and Other Drugs in an Illicit E-Commerce Market
- 57) Alcohol Drinking and Cross-National Homicide Rates: The Role of Demographic, Political, and Cultural Context

APPENDICES

APPENDIX B: Some examples of titles from *The Bible Translator*

1971

- 1) The Use of Non-Biblical Material to Focus on Biblical Translational Problems
- 2) Communication Roles of Languages in Multilingual Societies
- 3) A Catholic Translation in Contemporary Spanish
- 4) The Nature and Purpose of the New Testament in Today's English Version
- 5) Do You Use "Clean Language"? Old Testament Euphemisms and Their Translation

1972

- 6) Testing an Ilocano Translation of the Bible
- 7) A Portuguese Bible Translator in Java
- 8) Ingredients of Good, Clear Style: A Comparison of two Versions of the Gospels in a West African Language
- 9) Let's Make Our Translations More Interesting
- 10) Why Don't Writers Say Everything?
- 11) Linguistics and Translators

1973

- 12) Translation of Pronouns: A Thai Example
- 13) Psalms in Serbian Popular Verse
- 14) Translating the Questions in Isaiah 50
- 15) Old Testament Personalities in the New Testament

16) Linguistics and Theology: An Attempt to Analyze and Evaluate James Barr's Argumentation in The Semantics of Biblical Language and Biblical Words for Time

1974

17) Translating the Bible into English: The First Thousand Years

18) An Interesting Instance of the Use of the Cloze Technique

19) Observations on the Prospects of a Translation into Northern Thai

20) Selections from the Old Testament

21) An Attempt at a Dynamic Equivalent Translation of Basileia Tou Theou

1975

22) What Went Overboard First?

23) On Translating and Interpreting Galatians 1.13

24) The New Jewish Version of the Scriptures

25) Translating the Poetry of the Old Testament

26) Understanding What We are Translating and Translating to Be Understood

1976

27) Must Tone Always Be Written in a Tonal Language?

28) Matthew 2.23—Wordplay and Misleading Translations

29) Translation of Questions and Prohibitions in Greek

30) Scientific Insights to be Gained from Bible Translating

31) George Steiner: After Babel, Aspects of Language and Translation

1982

32) Jeremiah and the UBS Hebrew Old Testament Text Project

33) The “Weak” and the “Strong” and Paul's Letter to the Roman Christians

34) Receptor Language Style and Bible Translation. III: Training Translators
about Style

35) Fewer Words and Simpler Grammars Mean More Headaches

36) Identifying Participants in Old Testament Dialogue

1988

37) The Use of Figurative Language in Malachi 2.10-16

38) Problems in Translating Pronouns from English Versions

39) Communication Triggers as Bases for Some of the Notes for Study Bibles

40) Intelligibility and Acceptability in Bible Translating

41) The Norwegian Bible Translation of 1978/85—What Have We Learned?

42) Sociology, Theology and Hope: The Priestly Case in Exile

1993

43) Marking Interpersonal Relationships in the “Today's Spanish Version”

44) Taboo Words in the Bible

45) “A Place for Everything and Everything in its Place”: The Role of Range and
Sense in Bible Translation

46) A Footnote on Time: The Book of Esther

47) Luke 23.47 — The Problem of Dikaios

1999

48) Afterthought or Emphasis? Subject Supplements as a Translation Problem

49) Aspects of the Structure, Style, and Transmission of Psalm 73

50) The Treatment of Gender Issues in the Good News Study Bible

51) Ezekiel and Solomon's Temple

2000

- 52) Angels
- 53) Flora in Ezra, Nehemiah, and Esther
- 54) The Early Translation of the Bible into Ethiopic/Geez
- 55) Rethinking the Significance of the Black Presence in the Pentateuch for Translation and Study Bibles: Part I

2009

- 56) Difficulties for Exegesis and Translation: The Inversion in Genesis 18.7a
- 57) “We Must Have Blood”
- 58) How Persuasive is “Persuasive Words of Human Wisdom”? The Shortest Reading in 1 Corinthians 2.4
- 59) “The Way I See It”: As a Paradigm for Reader-Response Criticism
- 60) Performance Criticism and its Implications for Bible Translation: Part I: Oral Performance and New Testament Studies

2013

- 61) Israelite or Universal Horizon: Zephaniah 3.8–10 in the Hebrew and Greek Bibles
- 62) The Layout of the Song of Moses (Deut 32) in Masoretic Manuscripts and Biblia Hebraica Quinta
- 63) Celebrating 400 Years of Ruyl’s Malay Translation of Matthew’s Gospel
- 64) The Impact of the KJV in Caribbean Bible Translation Work: An Exploratory Introduction
- 65) The King James New Testament: How a Translation Determined Christian Thought on Marriage and Celibacy for Nearly Four Hundred Years

2016

66) “Novum Testamentum editum est”: The Five-Hundredth Anniversary of Erasmus’s New Testament

67) Erasmus’s Translation of the New Testament: Aim and Method

68) Erasmus and the Johannine Comma (1 John 5.7-8)

69) On the Reception of Erasmus’s Latin Version of the New Testament in Sixteenth-Century Spain

70) Erasmus’s Revision of the New Testament and Its Influence on Dutch Bible Translations: The Dossier Revisited

2018

71) At What Level Does Translation Occur?

72) Translation to the Third and Fourth Generations: The Gbaya Bible and Gbaya Language Enrichment

73) A Case Study for Study Bibles: The Book of Haggai

74) The Origins of Interpreting in the Old Testament and the Meturgeman in the Synagogue

