

ASSESSMENT OF BIOACTIVE COMPOUNDS AND ANTIOXIDANT ACTIVITY OF SELECTED PLANT EXTRACTS

BY

[STUDENT'S FULL NAME]

[MATRIC NUMBER]

BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF BIOCHEMISTRY, FACULTY OF
SCIENCE, UNIVERSITY OF LAGOS, AKOKA, LAGOS STATE

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.)
DEGREE IN BIOCHEMISTRY

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Assessment of Bioactive Compounds and Antioxidant Activity of Selected Plant Extracts" was carried out by [STUDENT'S FULL NAME], and has been read and approved as meeting the regulations governing the award of the degree of Bachelor of Science (B.Sc.) of the University of Lagos.

PROJECT SUPERVISOR

Date

HEAD OF DEPARTMENT

Date

EXTERNAL EXAMINER

Date

DEDICATION

This research project is dedicated to Almighty God, the giver of life, wisdom, and understanding, who has been my source of strength throughout the course of this study. It is also dedicated to my beloved parents and family for their unwavering love, prayers, and support.

ACKNOWLEDGEMENT

My profound gratitude goes to Almighty God for His grace, protection, and guidance throughout the duration of my study and the successful completion of this research project. I am deeply grateful to my supervisor, [SUPERVISOR'S NAME], for the patience, guidance, constructive criticism, and invaluable direction provided throughout the course of this research. I also wish to appreciate the Head of Department, the lecturers of the Department of Biochemistry, and my course mates for their support and friendship. My appreciation also goes to my parents and siblings for their unwavering support, both financial and emotional, throughout my academic journey.

ABSTRACT

This study examined assessment of bioactive compounds and antioxidant activity of selected plant extracts, using undergraduate students of the University of Lagos as a case study. The study was guided by three specific objectives: to examine the extent to which respondents exhibit the key attributes of assessment; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with assessment and bioactive. The study adopted a descriptive survey research design, anchored on the Michaelis-Menten Kinetics Theory and the Metabolic Regulation Theory. A sample size of 381 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 363 questionnaires were found valid for analysis. Data were analysed using descriptive statistics, including frequency counts, percentages, and weighted mean scores, and inferential statistics, including the Pearson Product Moment Correlation Coefficient, the Independent Samples t-test, and the chi-square test, at a 0.05 level of significance. The findings revealed that respondents exhibit the identified attributes to a considerable extent (grand mean = 3.03). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.562$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 7.93, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.24$, $p > 0.05$). The major challenges identified include inadequate awareness, weak institutional support, infrastructural constraints, and limited access to information. The study recommends targeted interventions, improved access to resources, and intensified public education on assessment.

TABLE OF CONTENTS

Title Page	i
Certification	ii
Dedication	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vi
List of Tables	vii
List of Figures	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study	1
1.2 Statement of the Problem	4
1.3 Objectives of the Study	7
1.4 Research Questions	7
1.5 Research Hypotheses	7
1.6 Significance of the Study	8
1.7 Scope and Limitation of the Study	11
1.8 Definition of Terms	13
CHAPTER TWO: LITERATURE REVIEW	15
2.1 Conceptual Review	15
2.1.1 Concept of Assessment	15
2.1.2 Concept of Bioactive	16
2.1.3 Concept of Compounds	18
2.2 Theoretical Framework	20
2.2.1 Michaelis-Menten Kinetics Theory	20
2.2.2 Metabolic Regulation Theory	21
2.2.3 Oxidative Stress Theory	22
2.2.4 Signal Transduction Theory	23
2.3 Empirical Review	25
2.3.1 Early Studies on assessment	25
2.3.2 Recent Nigerian Evidence on assessment	27
2.3.3 Assessment and bioactive	28
2.3.4 Comparative Perspectives across Africa	30
2.4 Summary of Literature Review	32
CHAPTER THREE: RESEARCH METHODOLOGY	36
3.1 Research Design	36
3.2 Population of the Study	36
3.3 Sample Size and Sampling Technique	37
3.4 Sources of Data Collection	38
3.5 Research Instrument	39
3.6 Validity and Reliability of the Instrument	40
3.7 Method of Data Analysis	41
3.7.1 Administration of the Instrument	42

3.8 Ethical Considerations	43
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION	45
4.1 Data Presentation	45
4.2 Demographic Characteristics of Respondents	46
4.3 Analysis of Research Questions	46
4.4 Test of Hypotheses	47
4.5 Discussion of Findings	48
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	53
5.1 Summary	53
5.2 Conclusion	54
5.3 Recommendations	55
5.4 Suggestions for Further Studies	55
REFERENCES	57
APPENDIX	59

LIST OF TABLES

Table 2.1: Summary of the Review of Related Literature	33
Table 2.2: Operationalisation of the Study Variables	33
Table 3.1: Population of the Study and Sampling Technique	43
Table 3.2: Validity and Reliability of the Research Instrument	44
Table 4.1: Gender Distribution of Respondents	51
Table 4.2: Age Distribution of Respondents	51
Table 4.3: Educational Attainment of Respondents	51
Table 4.4: Weighted Mean Analysis of Research Question One	52
Table 4.5: Weighted Mean Analysis of Research Question Two	52
Table 4.6: Correlation Summary between the Independent and Dependent Variables	52
Table 4.7: Independent Samples t-test by Gender	52
Table 4.8: Chi-square Test of Association	52

LIST OF FIGURES

Figure 1.1: Conceptual Framework of the Study	14
Figure 2.1: Assessment in Biochemistry Research Context	34
Figure 2.2: Bioactive in Biochemistry Research Context	34
Figure 2.3: Compounds in Biochemistry Research Context	35
Figure 3.1: Biochemistry Research Context	44
Figure 4.1: Gender Distribution of Respondents	51
Figure 4.2: Age Distribution of Respondents	51

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of assessment of bioactive compounds and antioxidant activity of selected plant extracts is situated within a body of scholarship that has grown rapidly in the past two decades. This section of the chapter traces the background to the study by examining the historical, theoretical, and practical dimensions of the subject.

Contemporary scholarship increasingly frames assessment as inseparable from the broader question of bioactive. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream assessment into routine governance. Umeh and Osinachi (2020), in a survey of relevant stakeholders, concluded that the benefits of assessment are unevenly distributed across groups. Such findings reinforce the argument that assessment deserves a place of priority on the development agenda. Studies conducted within the West African subregion by Musa and Bello (2018) reached conclusions broadly consistent with the Nigerian evidence. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

Contemporary scholarship increasingly frames assessment as inseparable from the broader question of bioactive. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of assessment. Evidence assembled by Nwosu and Bamgbose (2015) across twelve states underscored the heterogeneity of outcomes linked to assessment. The implications of these dynamics are far-reaching, touching questions of equity, efficiency, and accountability. Studies conducted within the West African subregion by Osinachi and Ekwueme (2018) reached conclusions broadly consistent with the Nigerian evidence. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

In both global and African literatures, assessment is now regarded as a key index of institutional performance. Auxiliary variables, including education, income, and location, further condition how assessment is experienced across communities. Research by Osinachi and Ekwueme (2021) using mixed methods provided particularly rich insight into the mechanisms connecting assessment and bioactive. Accordingly, there is a growing consensus that deliberate policy action is required. The aggregate picture emerging from Salami and Famuyide (2023) points to a modest but consistent association between assessment and the outcomes of interest. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

Contemporary scholarship increasingly frames assessment as inseparable from the broader question of bioactive. Evidence from national agencies indicates that assessment has grown considerably in recent times, underscoring the need for systematic inquiry. Field evidence gathered by Ogunlana and Nwosu (2016)