

DETERMINATION OF PESTICIDE RESIDUES IN VEGETABLES FROM MARKETS IN IBADAN

BY

[STUDENT'S FULL NAME]

[MATRIC NUMBER]

BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF CHEMISTRY, 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 CHEMISTRY

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Determination of Pesticide Residues in Vegetables from Markets in Ibadan" 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 Chemistry, 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 determination of pesticide residues in vegetables from markets in Ibadan, 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 determination; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with determination and pesticide. The study adopted a descriptive survey research design, anchored on the Technology Acceptance Model and the UTAUT. A sample size of 387 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 356 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 = 3.09). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.548$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 5.26, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.16$, $p > 0.05$). 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 determination.

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 Determination	15
2.1.2 Concept of Pesticide	16
2.1.3 Concept of Residues	18
2.2 Theoretical Framework	20
2.2.1 Technology Acceptance Model	20
2.2.2 UTAUT	21
2.2.3 Diffusion of Innovation Theory	22
2.2.4 Systems Development Life Cycle	24
2.3 Empirical Review	25
2.3.1 Early Studies on determination	25
2.3.2 Recent Nigerian Evidence on determination	27
2.3.3 Determination and pesticide	29
2.3.4 Comparative Perspectives across Africa	30
2.4 Summary of Literature Review	32
CHAPTER THREE: RESEARCH METHODOLOGY	37
3.1 Research Design	37
3.2 Population of the Study	38
3.3 Sample Size and Sampling Technique	38
3.4 Sources of Data Collection	39
3.5 Research Instrument	40
3.6 Validity and Reliability of the Instrument	41
3.7 Method of Data Analysis	42
3.7.1 Administration of the Instrument	43

3.8 Ethical Considerations	44
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION	48
4.1 Data Presentation	48
4.2 Demographic Characteristics of Respondents	48
4.3 Analysis of Research Questions	49
4.4 Test of Hypotheses	50
4.5 Discussion of Findings	51
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	57
5.1 Summary	57
5.2 Conclusion	58
5.3 Recommendations	59
5.4 Suggestions for Further Studies	59
REFERENCES	61
APPENDIX	63

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	45
Table 3.2: Validity and Reliability of the Research Instrument	45
Table 4.1: Gender Distribution of Respondents	54
Table 4.2: Age Distribution of Respondents	54
Table 4.3: Educational Attainment of Respondents	55
Table 4.4: Weighted Mean Analysis of Research Question One	55
Table 4.5: Weighted Mean Analysis of Research Question Two	55
Table 4.6: Correlation Summary between the Independent and Dependent Variables	55
Table 4.7: Independent Samples t-test by Gender	55
Table 4.8: Chi-square Test of Association	55

LIST OF FIGURES

Figure 1.1: Conceptual Framework of the Study	14
Figure 2.1: Determination in Chemistry Research Context	34
Figure 2.2: Pesticide in Chemistry Research Context	35
Figure 2.3: Residues in Chemistry Research Context	36
Figure 3.1: Chemistry Research Context	46
Figure 4.1: Gender Distribution of Respondents	54
Figure 4.2: Age Distribution of Respondents	54

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of determination of pesticide residues in vegetables from markets in Ibadan 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.

Debates on national transformation repeatedly return to the role of determination and its attendant dynamics. Within Lagos State, the country's most populous commercial hub, the dynamics of determination are observed in their starkest form. Findings reported by Chukwu and Adeniyi (2018) observed that respondents with greater exposure to determination recorded markedly different results. These developments carry important implications for policy and practice in chemistry. Studies by Bamgbose and Adebayo (2019) largely support the view that determination exerts a measurable influence on outcomes of interest. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

Contemporary scholarship increasingly frames determination as inseparable from the broader question of pesticide. Economic pressures and resource scarcity frequently determine the pace at which determination advances in practice. Studies conducted within the West African subregion by Ogbeide and Bakare (2018) reached conclusions broadly consistent with the Nigerian evidence. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Findings reported by Dauda and Bamgbose (2018) observed that respondents with greater exposure to determination recorded markedly different results. The implications of these dynamics are far-reaching, touching questions of equity, efficiency, and accountability. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

Over the past two decades, determination has become increasingly significant within the Nigerian landscape and beyond. Nigeria's federal structure and its diverse cultural geography ensure that the experience of determination varies considerably from one region to another. The work of Dauda and Bamgbose (2023) extended earlier analyses by demonstrating that pesticide reinforces the effects of determination. Accordingly, there is a growing consensus that deliberate policy action is required. Field evidence gathered by Adigun and Salami (2016) suggested that stakeholder engagement materially improves the results achieved in matters of determination. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Contemporary scholarship increasingly frames determination as inseparable from the broader question of pesticide. The colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of determination. Studies conducted within the West African subregion by Eze and Adekunle (2018) reached conclusions broadly consistent with the Nigerian evidence. Left unaddressed, the identified patterns