

ASSESSMENT OF AIR QUALITY AROUND CEMENT FACTORY HOST COMMUNITIES

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 "Assessment of Air Quality Around Cement Factory Host Communities" 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 assessment of air quality around cement factory host communities, 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 air. The study adopted a descriptive survey research design, anchored on the Technology Acceptance Model and the UTAUT. A sample size of 410 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 382 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 = 3.0). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.497$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 6.08, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.14$, $p > 0.05$). 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	14
2.1 Conceptual Review	14
2.1.1 Concept of Assessment	14
2.1.2 Concept of Air	15
2.1.3 Concept of Quality	17
2.2 Theoretical Framework	19
2.2.1 Technology Acceptance Model	19
2.2.2 UTAUT	20
2.2.3 Diffusion of Innovation Theory	21
2.2.4 Systems Development Life Cycle	22
2.3 Empirical Review	23
2.3.1 Early Studies on assessment	24
2.3.2 Recent Nigerian Evidence on assessment	25
2.3.3 Assessment and air	27
2.3.4 Comparative Perspectives across Africa	29
2.4 Summary of Literature Review	30
CHAPTER THREE: RESEARCH METHODOLOGY	34
3.1 Research Design	34
3.2 Population of the Study	34
3.3 Sample Size and Sampling Technique	35
3.4 Sources of Data Collection	36
3.5 Research Instrument	37
3.6 Validity and Reliability of the Instrument	38
3.7 Method of Data Analysis	39
3.7.1 Administration of the Instrument	40

3.8 Ethical Considerations	41
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION	45
4.1 Data Presentation	45
4.2 Demographic Characteristics of Respondents	45
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	31
Table 2.2: Operationalisation of the Study Variables	31
Table 3.1: Population of the Study and Sampling Technique	41
Table 3.2: Validity and Reliability of the Research Instrument	42
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	13
Figure 2.1: Assessment in Chemistry Research Context	32
Figure 2.2: Air in Chemistry Research Context	33
Figure 2.3: Quality in Chemistry Research Context	33
Figure 3.1: Chemistry Research Context	43
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 air quality around cement factory host communities 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.

In recent years, assessment has emerged as a central theme in scholarly discourse on chemistry. Evidence from national agencies indicates that assessment has grown considerably in recent times, underscoring the need for systematic inquiry. Field evidence gathered by Adeniyi and Alade (2016) suggested that stakeholder engagement materially improves the results achieved in matters of assessment. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. Comparative work by Osinachi and Aderemi (2022) across several states uncovered a consistent pattern linking assessment with air. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

assessment continues to command considerable attention among researchers, policymakers, and practitioners in chemistry. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of assessment. Field evidence gathered by Kalu and Osinachi (2016) suggested that stakeholder engagement materially improves the results achieved in matters of assessment. Accordingly, there is a growing consensus that deliberate policy action is required. Studies conducted within the West African subregion by Alade and Adekunle (2018) reached conclusions broadly consistent with the Nigerian evidence. For practitioners, the practical significance of assessment cannot be overstated, given its demonstrable link with air. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

assessment, when examined in relation to air, reveals complex and often paradoxical dynamics. National policies and programmes have sought, with varying degrees of success, to respond to the realities of assessment and air. Studies by Alade and Adekunle (2019) largely support the view that assessment exerts a measurable influence on outcomes of interest. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. Findings reported by Chukwu and Eze (2018) observed that respondents with greater exposure to assessment recorded markedly different results. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

assessment continues to command considerable attention among researchers, policymakers, and practitioners in chemistry. The colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of assessment. Field evidence gathered by Dauda and Chukwu (2016) suggested that stakeholder engagement materially improves the results achieved in matters of assessment. Left unaddressed, the identified