

DETERMINATION OF REFRACTIVE INDICES OF SELECTED OPTICAL MATERIALS

BY

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DEGREE IN PHYSICS

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Determination of Refractive Indices of Selected Optical Materials" 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.

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ABSTRACT

This study examined determination of refractive indices of selected optical materials, 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 refractive. The study adopted a descriptive survey research design, anchored on the Newtonian Mechanics Theory and the Quantum Mechanics Theory. A sample size of 388 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 361 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 = 2.98). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.579$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 5.48, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.19$, $p > 0.05$). 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.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of determination of refractive indices of selected optical materials 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 determination as inseparable from the broader question of refractive. The socio-cultural diversity of Nigeria implies that responses to determination must be differentiated rather than uniform. Field evidence gathered by Obiora and Dauda (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. Empirical evidence from Bakare and Olawale (2021) suggests that positive developments in refractive are associated with improvements in determination. Such findings reinforce the argument that determination deserves a place of priority on the development agenda. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

Contemporary scholarship increasingly frames determination as inseparable from the broader question of refractive. Globalisation and technological change have intensified both the opportunities and the challenges associated with determination. The work of Chukwu and Olawale (2023) extended earlier analyses by demonstrating that refractive reinforces the effects of determination. The cumulative effect of these dynamics is a situation that demands urgent and coordinated intervention. Comparative work by Obiora and Oyelaran (2022) across several states uncovered a consistent pattern linking determination with refractive. 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.

The salience of determination in national discourse has grown steadily, driven by changing social conditions and technological penetration. Nigeria's federal structure and its diverse cultural geography ensure that the experience of determination varies considerably from one region to another. Findings reported by Obiora and Oyelaran (2018) observed that respondents with greater exposure to determination recorded markedly different results. Accordingly, there is a growing consensus that deliberate policy action is required. The aggregate picture emerging from Eze and Umeh (2023) points to a modest but consistent association between determination and the outcomes of interest. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of $\{k_0\}$ from confounding factors.

determination continues to command considerable attention among researchers, policymakers, and practitioners in physics. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of determination. Studies conducted within the West African subregion by Ibrahim and Oyelaran (2018) reached conclusions broadly consistent with the Nigerian evidence.