EFFECT OF TEMPERATURE ON THE ELECTRICAL RESISTANCE OF CONDUCTORS

BY

[STUDENT'S FULL NAME]

[MATRIC NUMBER]

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

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Effect of Temperature on the Electrical Resistance of Conductors" 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 Physics, 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 effect of temperature on the electrical resistance of conductors, 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 effect; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with effect and temperature. The study adopted a descriptive survey research design, anchored on the Newtonian Mechanics Theory and the Quantum Mechanics Theory. A sample size of 407 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 387 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 = 3.12). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.467$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 7.43, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.21$, $p > 0.05$). 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 effect.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of effect of temperature on the electrical resistance of conductors 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 both global and African literatures, effect is now regarded as a key index of institutional performance. Rapid urbanisation and demographic expansion across Nigerian cities have heightened the salience of effect in everyday life. A notable study by Osinachi and Bello (2017) argued that the impact of effect is substantially mediated by the quality of institutions. These observations collectively invite a reconsideration of standard assumptions regarding temperature. Musa and Adekunle (2020), in a survey of relevant stakeholders, concluded that the benefits of effect are unevenly distributed across groups. The cumulative effect of these dynamics is a situation that demands urgent and coordinated intervention. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Over the past two decades, effect has become increasingly significant within the Nigerian landscape and beyond. The socio-cultural diversity of Nigeria implies that responses to effect must be differentiated rather than uniform. Comparative work by Okonkwo and Famuyide (2022) across several states uncovered a consistent pattern linking effect with temperature. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. Comparative work by Famuyide and Adekunle (2022) across several states uncovered a consistent pattern linking effect with temperature. Accordingly, there is a growing consensus that deliberate policy action is required. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

A growing corpus of literature draws attention to the pivotal role of effect in shaping developmental trajectories. Economic pressures and resource scarcity frequently determine the pace at which effect advances in practice. Studies conducted within the West African subregion by Famuyide and Adekunle (2018) reached conclusions broadly consistent with the Nigerian evidence. These developments carry important implications for policy and practice in physics. The work of Adebayo and Adebayo (2023) extended earlier analyses by demonstrating that temperature reinforces the effects of effect. These developments carry important implications for policy and practice in physics. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

The relationship between effect and temperature has been the subject of sustained academic interest across several disciplines. Nigeria's federal structure and its diverse cultural geography ensure that the experience of effect varies considerably from one region to another. Okonkwo and Famuyide (2020), in a survey of relevant stakeholders, concluded that the benefits of effect are unevenly distributed across groups. These developments carry important implications for policy and practice in physics. A notable study by Bamgbose and Bakare (2017) argued that the impact of effect is substantially mediated by the quality of institutions. These