

CONTINUITY AND LIMITS WITH APPLICATIONS TO ECONOMIC FUNCTIONS

BY

[STUDENT'S FULL NAME]

[MATRIC NUMBER]

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DEGREE IN MATHEMATICS

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Continuity and Limits with Applications to Economic Functions" 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 continuity and limits with applications to economic functions, 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 continuity; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with continuity and limits. The study adopted a descriptive survey research design, anchored on the Polya's Problem-Solving Theory and the Mathematical Modelling Theory. A sample size of 408 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 389 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 = 3.19). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.573$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 5.47, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.04$, $p > 0.05$). 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 continuity.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of continuity and limits with applications to economic functions 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, continuity is now regarded as a key index of institutional performance. Economic pressures and resource scarcity frequently determine the pace at which continuity advances in practice. Findings reported by Adebayo and Ogbeide (2018) observed that respondents with greater exposure to continuity recorded markedly different results. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. Research by Kalu and Obiora (2021) using mixed methods provided particularly rich insight into the mechanisms connecting continuity and limits. 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.

Scholars have long recognised continuity as a critical determinant of outcomes in mathematics. Globalisation and technological change have intensified both the opportunities and the challenges associated with continuity. The work of Umeh and Famuyide (2023) extended earlier analyses by demonstrating that limits reinforces the effects of continuity. For practitioners, the practical significance of continuity cannot be overstated, given its demonstrable link with limits. Findings reported by Adekunle and Musa (2018) observed that respondents with greater exposure to continuity recorded markedly different results. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

The salience of continuity in national discourse has grown steadily, driven by changing social conditions and technological penetration. Globalisation and technological change have intensified both the opportunities and the challenges associated with continuity. The work of Adekunle and Musa (2023) extended earlier analyses by demonstrating that limits reinforces the effects of continuity. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Evidence assembled by Ibrahim and Obiora (2015) across twelve states underscored the heterogeneity of outcomes linked to continuity. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

continuity continues to command considerable attention among researchers, policymakers, and practitioners in mathematics. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of continuity. A notable study by Ibrahim and Adeniyi (2017) argued that the impact of continuity is substantially mediated by the quality of institutions. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. Studies conducted within the West African subregion by Osinachi and Alade (2018) reached conclusions broadly consistent with the Nigerian