BUILDING-USE CONVERSION AND THE PERCEPTUAL ASSESSMENT OF UTILITIES SERVICEABILITY IN LAGOS METROPOLIS, NIGERIA

BY

ONI, ADEBUKOLA FUNKE (Matric. No. 979005034)
B.Sc. (Hons) Geography, (UNILORIN), M.Sc. Geography, (UNILAG)

THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, UNIVERSITY OF LAGOS, NIGERIA IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY (Ph.D.) DEGREE IN GEOGRAPHY (REGIONAL PLANNING)

OCTOBER, 2015

SCHOOL OF POSTGRADUATE STUDIES
UNIVERSITY OF LAGOS

CERTIFICATION

This is to certify that the Thesis:

"BUILDING-USE CONVERSION AND THE PERCEPTUAL ASSESSMENT OF UTILITIES SERVICEABILITY IN LAGOS METROPOLIS, NIGERIA"

Submitted to the
School of Postgraduate Studies
University of Lagos

For the award of the Degree of
DOCTOR OF PHILOSOPHY (Ph.D.)
is a record of original research carried out

By
ONI, Adebukola Funke
In the Department of Geography

…….	……	……..
AUTHOR'S NAME	**SIGNATURE**	**DATE**
…….	……	……..
1ST SUPERVISOR'S NAME	**SIGNATURE**	**DATE**
…….	……	……..
2ND SUPERVISOR'S NAME	**SIGNATURE**	**DATE**
…….	……	……..
1ST INTERNAL EXAMINER	**SIGNATURE**	**DATE**
…….	……	……..
2ND INTERNAL EXAMINER	**SIGNATURE**	**DATE**
…….	……	……..
EXTERNAL EXAMINER	**SIGNATURE**	**DATE**
…….	……	……..
SPGS REPRESENTATIVE	**SIGNATURE**	**DATE**

DEDICATION

This study is dedicated to the **Almighty God** my present help in time of need. I also, dedicate it to the loving memories of my academic mentors, **Prof. Tayo Fakiyesi** and **Prof. Tokunbo Sofoluwe**. The duo's interest in my attaining the degree was the driving force I had in the face of giving up in the pursuit of it.

ACKNOWLEDGEMENT

I express my deep gratitude to the immense contributions from my supervisors Dr. 'Tunji Babatola and Prof. Ademola Omojola for their expertise, encouragement and intelligent contributions to the study.

I acknowledge the contributions of the erudite scholars in the Department of Geography, University of Lagos who provided the right atmosphere for this study. I must mention retired Prof. Oyeleye and Prof. Akintola-Arikawe who I started the research with before their retirement. Also, mention must be made of the current Head of Department, Prof. S.I Oni and the Departmental PG Co-ordinator, Dr Segun Adeaga (they made sure the research run smoothly through their support and encouragement). Amongst other departmental scholars I must mention are Dr. Alabi Soneye, Dr. Oscar Uluocha, my beloved brother and number one research report editor Dr. Feyisetan Oni (who positively criticized the research report), Dr. Peter Elias, Dr Idowu Balogun, Dr. Vide Adedayo, Dr Emmanuel Ege, Dr Kemi Ojekunle, my beloved brothers Dr Mayowa Fasona and Dr. Sakiru Odunuga. I also appreciate the support of Dr. Bunmi Adegun, Dr. Alex Uriri, Dr. Akintuyi, Kemi Amure and Aunty Joyce.

I equally want to thank the non-academic staff members of the Department of Geography University of Lagos that I benefitted from, Mrs. Kazeem, Aunty Margret, Mr Johnson and Titilayo Adeiga and her family among others. Here also, I wish to thank my field assistants particularly for the huge role played by Kemi Adeniran, Toheeb Egbodoku, Lasisi Olaosebikan, Segun Olajide, Mary Davies, and all my students in the Department of Urban and Regional Planning, Yaba College of Technology that I can't mention here but were active during the field survey.

I am grateful for the support I had from my loving husband Professor Samuel Iyiola Oni (Daddiee Ayo) indeed you made me. You distanced yourself from the work despite the relationship to make me believe you did not really care but the end result shows that it is the best attitude for the research. My loving children need mentioning here; Ayomide (my internet research assistant), Ebunoluwa (who doubled as my English grammar editor and prayer partner and thanks for virtually taking over my domestic chores anytime I need to concentrate on my research, my **Best Friend Forever**). Anjolaoluwa (thanks for always staying awake with me to read late and my good listener and a co-editor with your twin sister). Also, my professor in the house Oluwadunsin, (your provoking imagination about my ability to finish especially when I

wanted to abandon the research is a huge drive to the end). **Thank you my family**… No other like you.

I am also indebted to my siblings and family, daddy (Pa Gabriel Ayoade Adeniji) at last this is your degree. Mum thanks for the baby sitting assignment always for the research period. My mama at Ilesa (Mama Modupeola Oni) for your prompt follow up on the research progress and Grand Pa and Grand Ma Ilaje (Pa and Ma 'Lanre Onigbogi). My brother and his wife and family Adeoye and Kasey Adeniji (thanks for always opening your door for my tension relief break. I enjoyed the impromptu holidays in your home to run away from the tension of the research). Peju and Ola Cole and their children (Nifemi, Kikiola, Olamide and Yimika) thank you so much (Uncle Ola thanks for paying the bills for my maps). Yemi Adeniji and family, thanks brother for your concern about the delay in finishing the degree, your encouragement helped. Ayodeji and Afolakemi (my siblings and children) thanks for being there all the time (you made your home my children's second home and they always enjoyed their 'I need my moment alone' period with you guys). Also, my cousins aunty Dayo Sofolahan and family (Aunty thanks for the path you laid out for me to follow), aunty Kehinde Oyeniran and family, Uncle Gboyega Adeniji and family, Ayo Oni and family, Seun Oni and family, The Adeugas, Bunmi and Kola Alabi and family, Mobola Awopetu and family, Kunle Ilesa, Kunle Adepoju. The Olowokudejos (Folake my sister from another mother thank you because you are the only one that knows my heart felt pain in the course of the research and your support and encouragement really helped). My church members, our Aunty Yemi Adekunle, Professor 'Dotun Adekunle and Joshy Baba, Dr. (Mrs) Rebecca Soremekun and family, the Erhies, The Adenirans, Grand Ma Vincent and all Sunday School members.

There are some friends and colleagues that really assisted; they include Prof. Dele Olowokudejo, Pastor Gbenga Adefarakan and family, Prof. Duro Oni, Prof. H.O.D. Longe and family, Dr. Demola Adeleke and family, Dr. Fashanu and family, Prof. Ngozi Osarentin. The Rector (Dr. Kudirat Ladipo), all Management Staffs and Council Members of Yaba College of Technology (I had two years study leave with pay from the College for my field survey), Tpl. D.L Yusuf, Dr. Olaseni, Ms Solola, Bola Badejo, Peju Ogunbanjo, Franca Agamah, Sanya Davies, Kayode Durojaye, Balogun O.R., Fasina and family, Dunni, Sehinde Ogundipe, Prince Adesanya, Omoyemi, both past and present staffs of the Department of Urban and Regional Planning , the Dean and staffs of the School of Environmental Studies, Yaba College of Technology.

TABLE OF CONTENTS **Page**

Title Page i

Certification ii

Dedication iii

Acknowledgement iv

Table of Content vi

List of Tables x

List of Figures xiii

List of Charts xiv

List of Plates xv

List of Appendices xvi

Abstract xvii

CHAPTER ONE

INTRODUCTION 1

1.0 Background to the Study 1

1.1 Statement of the Problem 4

1.2 Research Questions 7

1.3 Aim and Objectives of Study 7

1.4 Significance of the Study 8

1.5 Scope and Delimitation of the Study 9

1.6 Hypothesis 10

1.7 Operational Definition of Terms 11

1.8 Study Area 13

1.8.1 Physical Characteristics 14

1.8.2 Socio-Economic and Cultural Characteristics 14

1.8.3 Demography and Housing 16

1.8.4 An Overview of Physical Planning and Development Control in Lagos State 19

CHAPTER TWO

LITERATURE REVIEW, THEORETICAL AND CONCEPTUAL FRAMEWORK 31

2.0 Introduction 31

2.1.1 Use-Conversion and Underpinning Factors 31

2.1.2 Housing Stock and Diminishing Residential Stock 35

2.1.3 Use Conversion and Use Pressure 36

2.1.4 Redevelopment of Residential Properties and Social Equity 36

2.1.5 Overview of Slum Indicator Threshold 37

2.2 Theoretical Framework 38

2.3 Conceptual Framework 42

CHAPTER THREE

RESEARCH METHODOLOGY AND DATA COLLECTION 45

3.0 Introduction 45

3.1 Research Design 46

3.2 Data: Sources and Collection 46

3.2.1 The Study Area (The Macro-Area) 46

3.2.2 The Study Population (The Micro-area) 47

3.3 The Sampling Procedure 48

3.4 Research Analytical Methods 54

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION 56

4.0 Introduction 56

4.1 Building Stock and Use-Approval at Completion 56

4.2 The Use-Specific Pattern of Building-Use at Completion in the Study Area 64

4.2.1 Spatial Pattern of Building-Use at Completion 65

4.3 Spatial Distribution of Buildings-Use at Completion 70

CHAPTER FIVE

BUILDING-USE DYNAMICS IN LAGOS METROPOLIS 72

5.0 Introduction 72

5.1 Pattern of Building-Use Dynamics in Lagos Metropolis 72

5.1.1 Use-Conversion in the Commercial-Use Region of Lagos Metropolis 74

5.2 Spatio-Temporal Pattern of Building-Use Dynamics in the Neighbourhoods 76

5.3 Test of Proportion of Temporal Pattern of Building-Use Conversion 87

5.3.1 Test of Proportion in Urban Fringe Neighbourhood (Ifako-Ij aiye LGA) 88

5.3.2 Test of Proportion in Administrative Neighbourhood (Ikeja LGA) 89

5.3.3 Test of Proportion in Colonial Neighbourhood (Lagos Mainland LGA) 90

5.3.4 Test of Proportion in Traditional Neighbourhood (Shomolu LGA) 90

5.3.5 Test of Proportion in Post Colonial Neighbourhood (Surulere LGA) 91

5.3.6 Test of Proportion High Commercial-Use Region of the Study 92

5.3.7 Test of Proportion Low Commercial-Use Region 92

CHAPTER SIX

FACTORS AND VARIABLES OF BUILDING-USE CONVERSION 94

6.0 Introduction 94

6.1 Variables of Building-Use Conversion in Lagos Metropolis 94

6.2 Factors of Building-Use Conversion 97

6.3 Description of Variables of Building-use Conversion 98

6.3.1 Age of Building in Lagos Metropolis 100

6.3.2 Building Use-Approval in Lagos Metropolis 100

6.3.3 Number of Floor in Buildings in Lagos Metropolis 101

6.3.4 Main-Use of Building at Completion in Lagos Metropolis 101

6.3.5 Number of Rooms in Building in Lagos Metropolis 102

6.3.6 Residential Weight of Buildings in Lagos Metropolis 102

6.3.7 Type of Building Title in Lagos Metropolis 102

6.3.8 Occupancy Status of Building in Lagos Metropolis 103

6.4 Model of Building-Use Conversion 104

6.4.1 Model of Building-Use Conversion in Lagos Metropolis 104

6.4.2 Model of Building-Use Conversion in the Commercial Regions of Lagos Metropolis 110

6.4.3 Model of Use-Conversion in Sub-Regions of Lagos Metropolis 113

CHAPTER SEVEN

SPATIO-TEMPORAL ANALYSIS OF SERVICEABILITY RATING OF UTILITIES OR THEIR RELATED SURROGATES 117

7.0 Introduction 117

7.1 Temporal Analysis of Serviceability Rating of Utilities or Related Surrogates 117

CHAPTER EIGHT

'PARETO-EQUITY' ASSESSMENT OF SERVICEABILITY OF UTILITIES OR THEIR RELATED SURROGATES 123

8.0 Introduction 123

8.1 Pareto Equity Assessment of Serviceability of Building Utilities or Related Surrogates in Buildings of Conversion/Non Conversion 124

8.2 'Pareto-Equity' Assessment of Serviceability of Utilities/Surrogates in the Regions 127

8.3 'Pareto-Equity' of serviceability of Utilities/Surrogates between Stakeholders 133

CHAPTER NINE

SUMMARY OF FINDINGS, RECOMMENDATION AND CONCLUSION 136

9.0 Introduction 136

9.1 Summary of Findings 137

9.2 Conclusion and Recommendation 139

9.3 Contributions to Knowledge 140

9.4 Suggestion for Future Research 141

9.4.1 Wider Scope of the Study 141

9.4.2 Academic Research 142

REFERENCE 143

APPENDICES 150

LIST OF TABLES **Page**

Table 1.0	Population Projection for Local Government Areas (LGAs) in Lagos Metropolis	18
Table 2.I.5	Selected Slum-Indicators and Variables for the Study	38
Table 3.0:	Selected Neighborhood of the Study and Questionnaires Distribution	53
Table 4.1	Building-Use Type by Approval Status at Completion	56
Table 4.1.1	Building-Use Approval at Completion in Urban Fringe Area	57
Table 4.1.2	Building-Use Approval at Completion in Administrative Area	58
Table 4.1.3	Building-Use Approval at Completion in Colonial Area	59
Table 4.1.4	Building-Use Approval at Completion in Traditional Area	60
Table 4.1.5	Building-Use Approval at Completion in Post Colonial Area	61
Table 4.1.6	Building-Use Approval at Completion in Commercial-Use Regions	63
Table 4.1.7	Building-Use Approval at Completion in Lagos Metropolis Sub-Regions	64
Table 4.2	Building-Use Pattern at Completion in the study Area	64
Table 4.2.1	Pattern of Building-Use at Completion in Urban Fringe	65
Table 4.2.2	Pattern of Building-Use at Completion in Administrative Area	66
Table 4.2.3	Pattern of Building-Use at Completion in Colonial Area	67
Table 4.2.4	Pattern of Building-Use at Completion in Traditional Area	68
Table 4.2.5	Building-Use at Completion in Post-Colonial Area	70
Table 4.3.1	Pattern of Building-Use at Completion in High Commercial Region	71
Table 4.3.2	Pattern of Building-Use at Completion in Low Commercial Region	71
Table 5.1	Pattern of Building-Use Conversion in Lagos Metropolis	72
Table 5.1.1	Pattern of Building Use Conversion in Low Commercial Region	75
Table 5.1.2	Pattern of Building Use Conversion in High Commercial Region	76
Table 5.2.1	Pattern of Building-Use Conversion in the Urban Fringe Neighbourhood	77
Table 5.2.2	Pattern of Building-Use Conversion in the Administrative Neighbourhood	79
Table 5.2.3	Pattern of Building-Use Conversion in the Colonial Neighbourhood	80
Table 5.2.4	Pattern of Building-Use Conversion in the Traditional Neighbourhood	82

Table 5.2.5	Pattern of Building-Use Conversion in the Post Colonial Neighbourhood	83
Table 5.3	Significance of Residential Building-Use at completion and time of Survey	93
Table 6.1.1	KMO and Bartlett's Test	95
Table 6.1.2	Total Variance Explained	95
Table 6.1.3	Extracted Variables of Building-Use Conversion in Lagos Metropolis	97
Table 6.2	Factors of Building-Use Conversion in Lagos Metropolis	98
Table 6.3.1	Age of Building in Lagos Metropolis	100
Table 6.3.2	Building Use-Approval in Lagos Metropolis	100
Table 6.3.3	Number of Floors in Building	101
Table 6.3.4	Number of Rooms in Building	101
Table 6.3.5	Number of Rooms in Building	102
Table 6.3.6	Residential Weight in Buildings	102
Table 6.3.7	Type of Building Title in Lagos Metropolis	103
Table 6.3.8	Owner Status	103
Table 6.4.1	Case Processing Summary Lagos Metropolis	106
Table 6.4.2	Classification Table[a] Lagos Metropolis	106
Table 6.4.3	Classification Table[a,b] Lagos Metropolis	107
Table 6.4.4	Variables in the Equation Lagos Metropolis	107
Table 6.4.5	Omnibus Tests of Model Coefficients Lagos Metropolis	108
Table 6.4.6	Variables in the Equation for Use-Conversion Model Lagos Metropolis	109
Table 6.4.2.1	Case Processing Summary Commercial Regions	110
Table 6.4.2.2	Classification Table[a] Commercial Regions	110
Table 6.4.2.3	Classification Table[a,b] Commercial Regions	110
Table 6.4.2.4	Variables in the Equation Commercial Regions	111
Table 6.4.2.5	Omnibus Tests of Model Coefficients Commercial Regions	111
Table 6.4.2.6	Variables in the Equation for Use-Conversion Model in Commercial Regions	112
Table 6.4.3.1	Case Processing Summary Sub-Regions of Lagos Metropolis	113
Table 6.4.3.2	Classification Table[a] Sub-Regions of Lagos Metropolis	113

Table 6.4.3.3	Classification Table[a,b] Sub-Regions of Lagos Metropolis	113
Table 6.4.3.4	Variables in the Equation Sub-Regions of Lagos Metropolis	114
Table 6.4.3.5	Omnibus Tests of Model Coefficients Sub-Regions of Lagos Metropolis	114
Table 6.4.3.6	Variables in the Equation for Use-conversion in Sub-Regions of Lagos Metropolis	115
Table 7.1	Spatio-Temporal Analysis of Serviceability Rating of Utilities or Related Surrogates in Study Neighbourhoods	118
Table 8.1	'Pareto Equity' Assessment via Serviceability of Utilities/ Surrogates in Use-Conversion/Non Use-Conversion Buildings	126
Table 8.2.1	'Pareto Equity' Assessment via Serviceability Rating of Utilities/Surrogates Urban Core versus Fringe	129
Table 8.2.2	'Pareto Equity' Assessment via Serviceability Rating of Utilities/Surrogates High versus Low Commercial-Use Regions	132
Table 8.3	'Pareto Equity' of Serviceability of Utilities/Surrogates between Stakeholders	135

LIST OF FIGURES **Page**

Figure 1.0	Regional Division Lagos Metropolis and the Study Neighbourhood	15
Figure 2.2	Bid-Rent Curve	40
Figure 3.1.1	Lagos Metropolis and the Commercial-Use Regions Category of the Study	50
Figure 3.1.2	Lagos Metropolis and the Sub-Use Region (Urban Core/Fringe) Category of the Study	51
Figure 5.2.1	Building-Use in the Study Area at Completion	85
Figure 5.2.2	Building-Use in the Study Area at the time of Survey	86

LIST OF CHARTS **Page**

Chart 2.0	Conceptual Framework	44
Chart 3.0	Research Methodology Flow Chart	45
Chart 3.1	Showing Selections of the Study Neighbourhood	52

LIST OF PLATES **Page**

Plate 1	Evidence of Residential-use Layout in Urban Fringe Area	66
Plate 2	Evidence Residential-Use Layout in Administrative Area	67
Plate 3	Evidence Residential-Use Layout in Colonial Area	68
Plate 4	Evidence of Residential-Use in Traditional Area	69
Plate 5	Evidence of Residential-Use Layout in Post-Colonial Area	70
Plate 6a	Evidence of Mixed-Use of Building in Urban Fringe	78
Plate 6b	Evidence of Mixed-Use of Building in Urban Fringe	78
Plate 7a	Conversion to Commercial-Use in Ikeja LGA	78
Plate 7b	Conversion to Commercial-Use in Ikeja LGA	78
Plate 7c	Conversion to Religious-Use in Ikeja	79
Plates 7d	Conversion to Institutional-Use in Ikeja	79
Plate 8a	Mixed-Use in Lagos Mainland	81
Plate 8b	Commercial-Use in Lagos Mainland	81
Plate 9a	Mixed-Use in Shomolu	82
Plate 9b	Mixed-Use in Shomolu	82
Plate 10a	Total Conversion of Residential Building in Shomolu	82
Plate 10b	Total Conversion of Residential Building in Shomolu	82
Plate 11a	Commercial-Use in Surulere	83
Plate11b	Commercial-Use in Surulere	83
Plate 11c	Mixed-Use of Buildings in Surulere	84
Plate 11d	Institutional-Use in Surulere	84

LIST OF APPENDICES **Page**

APPENDIX 1	Population Projection formula	150
APPENDIX 2a	Streets Identification and Labeling for Selection of Study Area	151
APPENDIX 2b	Questionnaire	162

Abstract

This study has analysed the spatio-temporal pattern of building-use conversion and its explanatory variables with a view to assessing the serviceability of utilities arising from their use-pressure in parts of Lagos metropolis. The study focused on identifying the spatio-temporal use-specific patterns of building stock and the dominant building-use attributes at completion. Also, among the study spotlights are the spatio-temporal dynamics of building-use conversion and the factors that are associated with the event of use-conversion, the implication of use-conversion on its supporting utilities for livable neighbourhood and the 'Pareto-equity' problem of use-pressure on the utilities from the perception of the metropolitan regions and the stakeholders. The study employed both purposive and multi-stage sampling techniques to obtain the metropolitan tracts in which the study samples were drawn. Further analysis employed the degree of commercial activity to reclassify the metropolitan area. Among others, the study analyzed the degree of building-use conversion in different regions of the metropolis and it examined the magnitude of loss and gain among uses to which the sampled buildings were used between their completion and the time of the study survey using Markov Chain analysis. Factor analysis was employed to obtain the factor classification of the variables that underpin use-conversion. A more detailed analysis employed the logistic regression to model variables that are associated with the event of use-conversion. Analysis of the serviceability of the selected utilities in the context of building conversion is operational in terms of whether such utilities have experienced positive or negative changes in their service performance rating across the years of analysis as perceived by the respondents in the metropolis using student's t-test analysis. Five (5) relevant hypotheses were tested. Findings among others show that residential purpose constitutes the modal approved use for the covered period. Residential-use also experienced greatest loss to other uses while building in the mixed-use category experienced the greatest proportional gain from other use categories. Consequently, building in the mixed-use category constitutes the modal group at the time of the study. Factor analytical procedure was used to compress the initial 21 variables to two factors namely; building-related factor and neighbourhood-related factor. The logistic regression analysis shows that location, age of building, type of title a building holds and ownership status are variables that significantly associated with the event of use-conversion in Lagos metropolis. Respondents on the average, perceived the changes in the serviceability rating of the building supporting utilities or related surrogates between designated years as 'fair' except those at the metropolitan suburban neighbourhood. Interestingly, observed differences in the levels of 'approval/disapproval' of serviceability rating of utilities or related surrogates across the designated period did not differentiate the landlords from the tenants. The study concludes by highlighting the apparent inevitability of use-conversion in the current Lagos metropolis setting and the need to step up further researches which are directed at producing clues for addressing its implications.

Key Words: Use-Conversion, Building-Use, Utilities Serviceability and 'Pareto Equity'.

Word Counts: