

Table of Contents

	Page
Acknowledgements	iii
Abstract (Thai)	v
Abstract (English)	vii
List of Tables	xiv
List of Figures	xv
Chapter 1 Introduction	
1.1 Problem Statement	1
1.2 Significance of the Problem	4
1.3 Objectives of the Study	4
1.4 Scope of the Study	5
1.5 Concept of Hypothesis Testing	13
1.6 Structure of the Remainder of the Thesis	23
Chapter 2 Literature Review	
2.1 Anatomy of the review of literature for the research	24
2.2 The Theoretical and Thematic Literature	26
2.2.1 Complex Systems in Dynamic Evolution	26
2.2.2 Welfare Economics	29
2.2.3 Environmental Economics	36
2.2.4 Natural Resources Economics	39
2.3 Literature on Place: The Challenges and Success of Sustainable Development in Myanmar and South East Asia	41
2.4 Literature on Method: How to Measure and Explain Well-being, Poverty and Systemic Linkages	47
2.4.1 Measuring Poverty	47
2.4.2 Measuring Environmental Impacts	48

2.4.3 Testing Systems Linkages	49
2.4.4 Explaining Ecological Behaviors	50
Chapter 3 Research Design and Methods	
3.1 Internal Logic of the Research Design	53
3.2 Logical Framework of the Hypothesis Testing and Statistical Tests	54
3.3 Variable Definition and Creation	57
3.4 methods of Data Analysis	62
3.4.1 Descriptive Statistics	62
3.4.2 The Lorentz Curve and Gini Coefficient	63
3.4.3 Sen's Welfare Coefficient	68
3.4.4 Incidence, Depth, and Intensity correctives to the Gini Coefficient	68
3.4.5 Tests of Means	70
3.4.6 Cross-tabulation analyses and bar-charts with Chi-square and other tests of significance for ordinal and nominal categories	71
3.4.7 Correlations Matrix Analysis	71
3.4.8 Regression Analysis and Final Hypothesis Testing	72
3.4.9 The Structure of the Linked Hypothesis	73
3.4.9.1 Adjusted R-Square	74
3.4.9.2 F-statistics and Level of Significance	74
3.4.9.3 t-statistics for each Variable and Group of Variables	74
3.4.9.4 Logic of the Signs	75
3.5 Methods of Data Collection	75
3.5.1 Questionnaire	77
3.5.2 Pre-test	77
3.5.3 Pilot Survey	78

Chapter 4 Welfare and Descriptive Statistics	
4.1 Descriptive statistics (means, standard deviation, coefficients of variation)	79
4.2 Calculations of Lorenz Curves, Gini Coefficients, Decile and Quintile Ratios	80
4.3 Calculations of the incidence, depth, and severity of poverty	86
4.4 Tests of Means of all of the above by Village, Region, Gender, and Social Group	87
4.5 Cross-tabulation Analyses and Bar-charts with Chi-square and other Tests of significance for Ordinal and Nominal Categories	88
4.6 One Way ANOVA	100
Chapter 5 The Regression Analysis	
5.1 Correlation Matrix Analysis	106
5.2 Regression Equation Analysis	107
5.3 Preliminary Hypothesis Testing from the Remaining Variables in the Correlation Matrix	109
5.3.1 Environmental Awareness	113
5.3.1.1 Theoretical justification for the hypothesis:	113
5.3.1.2 Interpretation:	114
5.3.2 Environmental Knowledge	118
5.3.2.1 Theoretical justification for the hypothesis:	120
5.3.2.2 Interpretation:	121
5.3.3 Environmental Attitudes	123
5.3.3.1 Theoretical justification for the hypothesis:	126
5.3.3.2 Interpretation:	126
5.3.4 Environmental Behavior	129
5.3.4.1 Theoretical justification for the hypothesis:	129
5.3.4.2 Interpretation:	130
5.3.5 Environmental Well-being	132

5.3.5.1 Theoretical justification for the hypothesis	132
5.3.5.2 Interpretation:	133
5.3.6 Physical Well-being	135
5.3.6.1 Theoretical justification for the hypothesis	136
5.3.6.2 Interpretation:	136
5.3.7 Economic Well-being	139
5.3.7.1 Theoretical justification for the hypothesis	139
5.3.7.2 Interpretation	139
5.3.8 Economic Efficiency or Technical Efficiency	142
5.3.8.1 Theoretical justification for the hypothesis	142
5.3.8.2 Interpretation:	143
5.3.9 Social Well-being	146
5.3.9.1 Theoretical justification for the hypothesis	146
5.3.9.2 Interpretation	146
Chapter 6 The Regression Analysis	
6.1 Brief summary of the real-world problem and scientific problem, as well as the purpose of the goals of the research	150
6.2 Brief reminder of the regions and villages selected for study and the methods of data collection and analysis	151
6.3 Results of econometric hypothesis testing	160
6.4 Policy recommendation from the system equations	160
6.5 Limits of the research Conclusions	162
6.6 Suggestions for future research	163
References	165
Appendix	
Appendix A	176
Curriculum Vitae	193

List of Tables

Table	Page
3.1 Definitions and calculation formulae of the composite variables	59
4.1 Summary of Inequality Measures in two Eco-marketing Zones	86
4.2 Cross-tabulation between region and diet diversity	89
4.3 Cross-tabulation of wealth and diet diversity	90
4.4 Cross-tabulation between wealth and land quality	92
4.5 Cross-tabulation between wealth and sufficiency of land.	93
4.6 Cross-tabulation between wealth rank and rice production	94
4.7 Cross-tabulation of Wealth and shifting cultivation	95
4.8 Chi-square test of shifting cultivation	95
4.9 Cross-tabulation of wealth and income improvement	96
4.10 Chi-square test of wealth and income improvement.	97
4.11 Cross-tabulation of wealth and ability of loan repayment.	98
4.12 Chi-square test of wealth and capacity to loan repayment.	98
4.13 Wealth and capacity to pursuit of education.	99
4.14 Chi-square test of wealth and ability to pursuit of education	99
4.15 Post Hoc Test	102
5.1 The summary of hypothesis (1a)	115
5.2 The summary for hypothesis (1b)	117
5.3 The summary of hypothesis 2	122
5.4 The summary for hypothesis (3a)	127
5.5 The summary for hypothesis (3b)	128
5.6 The regression summary of hypothesis 4	131
5.7 The regression summary of hypothesis 5	134
5.8 The regression summary of hypothesis 6	137
5.9 The regression summary of hypothesis 7.	140
5.10 The regression summary of hypothesis 8.	144
5.11 The summary of regression analysis and correlation matrices for hypothesis 9	147
6.1 Summary of Hypotheses, Regression Analyses and Descriptives	154

List of Figures

Figures	Page
1.1 Location of UNDP projects in Myanmar.	10
1.2 Map of Myanmar Economical Land use plan.	11
1.3 Estimate position of two sample villages in Bagan	12
1.4 Map of Kyaintali showing the location of villages in the data collection.	13
1.5 Theoretical Framework of Hypothesis	17
2.1 The grid of literature review	25
3.1 Logical Frame-work of the hypothesis	55
3.2 Analytical Framework and components of statistical tests	56
3.3 Lorentz Curve and Gini Coefficeint.	67
4.1 Comparison of Land Distribution in Two Study Area	81
4.2 Income Inequality in Bagan and Kyaintali	83
4.3 Equality of Physical Welfare in Bagan and Kyaintali	84
4.4 Equality in Nutritional Expenditure in Bagan	85
4.5 Cross-tabulation of Wealth Rank and Household Size	88
4.6 Bar graph showing wealth rank against diet diversity	91
4.7 Wealth Against Improvement of Income	97
5.1 The conclusion of hypotheses testing from regression equations.	110
5.2 Results of regression summary from equations separate for Bagan	111
5.3 Summary of hypotheses testing in Kyaintali	112