



RETURNING MATERIALS:
Place in book drop to
remove this checkout from
your record. FINES will
be charged if book is
returned after the date
stamped below.

NOV 2 1989
KJAN 0 3
X4X 0 55

9 89

MAY 1 0 005

**PATTERN OF SPATIAL DEVELOPMENT AND REGIONAL INEQUALITIES
IN PENINSULAR MALAYSIA**

By

Zainul Bahrin Bin Mohd. Zain

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment for the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Urban and Regional Planning Program
College of Social Science

1987

ABSTRACT

PATTERN OF SPATIAL DEVELOPMENT AND REGIONAL INEQUALITIES IN PENINSULAR MALAYSIA

By

Zainul Bahrin Bin Mohd. Zain

The existence of regional inequality is a problem shared by most developing countries. While some degree of regional inequality in development is inevitable, its persistence and increase in magnitude has been recognized as a major obstacle in the achievement of significant development changes. Spatial imbalances not only reflect social inequities in the distribution of development benefits, but also act as impediments in efforts to promote harmonious and cohesive national development. The formulation of effective redressal strategy requires a proper understanding of the pattern of spatial development and the nature of the inequalities.

This study examines the pattern of spatial development and the change of regional inequalities in Peninsular Malaysia between 1970 and 1980. A few studies of regional inequality of Malaysia exist but rely on data for large units of analysis, mainly at the state-level. Data for large units tend to hide some important regional attributes which may be critical for the development of appropriate policies. This study uses smaller units of analysis, namely administrative districts, to detect the distribution of inequalities and the relative

change from 1970 to 1980, a period when the Malaysian Government recognized the resolution of inequalities as a high priority national objective.

Based on data derived from secondary sources, thirty variables indicating different aspects of development are used in the analysis. Indices of development are constructed to measure the level of development of 64 comparable districts of Peninsular Malaysia. The magnitude of regional inequalities is then assessed using Gini coefficient techniques.

Variations and disparities in development performance exist at all scales of analysis. Indices of development and Gini coefficients confirm that variations and gaps in development are more pronounced at the district rather than the state scale of analysis. The study demonstrates that the spatial pattern of inequality that prevailed in 1970 basically remained unchanged, with urban districts receiving greater development benefits than rural counterparts. Similarly, districts in the west coast states fared better than those in the east coast states. Based on the analysis, the study offers a number of general policy directions to foster a more balanced development in Malaysia.

For My Wife, Zaini, and our children,
Airin, Azrin, Edalin and Iskandar.

ACKNOWLEDGMENTS

First and foremost, I would like to express my humble gratitude to God the Almighty for bestowing upon me the ability to undergo through this learning process. Without His blessings this study may never have been undertaken.

My profound thanks goes to the Public Services Department, Malaysia for granting me the opportunity to continue with my graduate studies. Without the study leave and necessary financial support from the P.S.D. it would not have been possible for this study and the Ph.D. program to be completed.

Thanks are also due to the various government departments and agencies in Malaysia for extending their assistance in providing data and information needed for this study. In particular, I am thankful to the Department of Statistics, Malaysia for facilitating the procurement of most of the pertinent data at the district level. Its officers and staff have been graciously helpful in many ways.

Many people, including personal friends, have assisted in some way or other in the preparation and accomplishment of this dissertation. My appreciation and gratitude goes to all concerned.

Special appreciation and thanks goes to Dr. Rene Hinojosa, not only as Director of my Dissertation Committee but also for his

relentless guidance and scholarly advice throughout the development and completion of this study. I am also thankful to Professors Roger Hamlin, Assefa Mehretu, David Campbell, Lawrence Libby, and Keith Honey not only for their willingness to serve on my Guidance and Dissertation Committees, but also for their academic guidance and advice. I would also like to thank Professor Robert McKinley for serving on the defense committee.

To my parents, Hj. Mohd. Zain and Siti Rahmah, I am thankful for giving me constant guidance and hope. The assistance given by both my families are also appreciated.

Finally, my family deserves more thanks and appreciation than I could possibly convey. My very special thanks and deepest appreciation to my beloved wife, Zaini, for her sacrifice, patience and encouragement. To my dearest children, Airin, Azrin, Edalin, and Iskandar, who have innocently sacrificed many of the childhood joys because of this undertaking, I am very grateful for their understanding. My wife and children have been a source of inspiration more than they will ever know.

TABLE OF CONTENTS

	Page
List of Tables.....	xi
List of Figures.....	xv
CHAPTER	
ONE INTRODUCTION.....	1
Spatial Development in Developing Countries.....	2
Background of the Problem in Peninsular Malaysia.....	9
Problem Statement.....	21
Objective of the Study.....	23
Hypotheses.....	25
Significance of the Study.....	26
Key Concepts of the Study.....	29
Organization of the Study.....	32
TWO: REVIEW OF THE LITERATURE ON DEVELOPMENT AND REGIONAL INEQUALITY	
Meaning, Dimensions, and Goals of Development.....	34
Meaning and Dimensions of Inequality.....	47
Space and Region in Development.....	51
Approach to Development.....	59
Measurement of Development.....	71

	Inequality in Development: Empirical Evidence.....	79
THREE:	METHODOLOGY	
	Focus of the Study.....	90
	Time Period of the Study.....	91
	Data for the Study.....	93
	Theoretical Justification for Variables Selected.....	95
	Unit of Observation	117
	Weighting of Variables.....	125
	Research Techniques.....	127
FOUR:	PATTERN OF SPATIAL DEVELOPMENT AND REGIONAL INEQUALITIES IN PENINSULAR MALAYSIA, 1970-1980	
	Introduction.....	137
	Index of Development.....	138
	Pattern of Spatial Development.....	138
	Results of Survey.....	145
	1970 Development Index.....	148
	1980 Development Index.....	161
	Comparison of 1970 and 1980 Development Indices.....	172
	Gaps in Spatial Development.....	189
	Changes Over Time.....	193
	Magnitude of Spatial Inequality.....	195
	Spatial Inequality: States and Districts.....	197
	Spatial Inequality: Urban and Rural Districts....	207

	Spatial Inequality: Western and Eastern Districts.....	214
	Gaps in Spatial Inequality.....	218
	Changes Over Time.....	222
	Summary of Findings.....	225
FIVE:	POLICY IMPLICATIONS FOR EQUITABLE DEVELOPMENT	
	Development Policy Implications From Results of The Study.....	232
	Implications From Results of the Study.....	240
	Implications From Personal Experience.....	240
	Political Will.....	248
SIX:	SUMMARY AND CONCLUSION	
	Contextual Overview.....	251
	Summary of Findings of the Study.....	253
	Suggestions for Further Research.....	255
	Concluding Note.....	257
	APPENDICES	
	1. Indicators of Development: Operationalization and Sources of Data	259
	2(A). States in Peninsular Malaysia, 1970 and 1980...	264
	2(B). Area of States in Peninsular Malaysia, 1970 and 1980.....	265
	2(C). Population of States in Peninsular Malaysia, 1970 and 1980.....	266
	3. States in Peninsular Malaysia, 1970 and 1980: For Comparative Use.....	267
	4(A). Administrative Districts in Peninsular Malaysia, 1970 and 1980.....	268

4(B).	Area of Administrative Districts in Peninsular Malaysia, 1970 and 1980.....	271
4(C).	Population of Administrative Districts in Peninsular Malaysia, 1970 and 1980.....	274
5.	Administrative Districts in Peninsular Malaysia, 1970 and 1980: For Comparative Use...	277
6.	Sample of 'Value Judgment Survey' Forms.....	281
7.	Urban and Rural Districts in Peninsular Malaysia, 1970 and 1980.....	284
8.	Urban and Rural Districts in Peninsular Malaysia, 1970 and 1980: For Comparative Use....	286
9.	Places With Population 10,000 And More in Peninsular Malaysia, 1970.....	288
10.	Places With Population 10,000 And More in Peninsular Malaysia, 1980.....	
11.	Variables Used To Calculate Gini Coefficients...	291
	BIBLIOGRAPHY.....	295

LIST OF TABLES

TABLE	PAGE
1.1: Per Capita Gross Domestic Product, 1971 and 1980 (in Malaysian Ringgit at 1970 Prices.....	16
1.2: GDP by Industry of Origin, 1970 and 1980.....	17
3.1: Development Criteria and Indicators Used In Analysis of Pattern of Spatial Development and Regional Inequalities in Peninsular Malaysia, 1970 and 1980.....	99
4.1: Weights of 30 Selected Indicators of Development (Based on Value Judgement Survey).....	147
4.2: 1970 Comparative Districts, Peninsular Malaysia -- Index of Development (Unweighted) and Ranking.....	149
4.3: 1970 Comparative Districts, Peninsular Malaysia -- Distribution of Development Index (Unweighted) by Geographical Location and Urban and Rural Districts.....	152
4.4: 1970 Comparative Districts, Peninsular Malaysia -- Breakdown of Districts With Positive Index of Development by States.....	154
4.5: 1970 Comparative Districts, Peninsular Malaysia -- Ranking of Districts According to Development Index.....	156
4.6: 1970 Comparative Districts, Peninsular Malaysia: Index of Development (Weighted) and Ranking.....	158
4.7: 1970 Comparative Districts, Peninsular Malaysia -- Distribution of Development Index (Weighted) by Geographical Location and Urban and Rural Districts.....	159
4.8: 1970 Non-Comparative Districts, Peninsular Malaysia -- Distribution of Development Index (Unweighted) by Geographical Location and Urban and Rural Districts.....	160

4.9: 1970 Non-Comparative Districts, Peninsular Malaysia -- Distribution of Development Index (Weighted) by Geographical Location and Urban and Rural Districts.....	160
4.10: 1980 Comparative Districts, Peninsular Malaysia -- Index of Development (Unweighted) and Ranking.....	162
4.11: 1980 Comparative Districts, Peninsular Malaysia -- Distribution of Development Index (Unweighted) by Geographical Location and Urban and Rural Districts.....	165
4.12: 1980 Comparative Districts, Peninsular Malaysia -- Breakdown of Districts with Positive Index of Development by States.....	166
4.13: 1980 Comparative Districts, Peninsular Malaysia -- Index of development (Weighted) and Ranking.....	168
4.14: 1980 Comparative Districts, Peninsular Malaysia -- Ranking of Districts According to Development Index.....	169
4.15: 1980 Comparative Districts, Peninsular Malaysia: Distribution of development Index (Weighted) by Geographical Location and Urban and Rural Districts.....	170
4.16: 1980 Non-Comparative Districts, Peninsular Malaysia -- Distribution of Development Index (Unweighted) by Geographical Location and Urban and Rural Districts.....	171
4.17: 1980 Non-Comparative Districts, Peninsular Malaysia -- Distribution of Development Index (Weighted) By Geographical Location and Urban and Rural Districts.....	172
4.18: Comparative Districts -- Number of Districts With Positive Index of Development.....	173
4.19: Comparative Districts -- Number of Districts With Negative Index of Development.....	173
4.20: 1970 Districts, Peninsular Malaysia: Index of Development (Unweighted) and Ranking.....	175
4.21: 1980 Districts, Peninsular Malaysia: Index of Development (Unweighted) and Ranking.....	176

4.22: Non-Comparative Districts -- Number of Districts With Positive and Negative Index of Development....	178
4.23: Comparative States: Index of Development (Unweighted), 1970 and 1980.....	179
4.24: 1970 and 1980 Comparative Districts -- Western and Eastern Districts With Positive Development Index.....	182
4.25: 1970 and 1980 Comparative Districts -- Western and Eastern Districts With Negative Development Index.....	183
4.26: 1970 and 1980 Comparative Districts -- Urban and Rural Districts With Positive Development Index.....	184
4.27: 1970 and 1980 Comparative Districts -- Urban and Rural Districts With Negative Development Index.....	187
4.28: Distribution of Districts According To Performance of Index of Development for 1970 and 1980.....	188
4.29: Comparative Districts, Peninsular Malaysia: Relative Gap In Development Performance With The Most Developed District, 1970 and 1980.....	191
4.30: Ranking of Comparative Districts, Peninsular Malaysia 1970 and 1980 (According to Development Index.....	194
4.31: Location Quotient for Comparative Districts: Performance of Variables By Districts, 1970.....	199
4.32: Location Quotient for Comparative Districts: Performance of Variables By Districts, 1980.....	200
4.33: Location Quotient for Comparative Districts: Performance of Districts By Variables, 1970.....	201
4.34: Location Quotient for Comparative Districts: Performance of Districts By Variables, 1980.....	203
4.35: Gini Coefficients At State, District, Urban District, Rural District, Western District, and Eastern District Scales of Analysis, 1970.....	205
4.36: Gini Coefficients At State, District, Urban District, Rural District, Western District, and Eastern District Scales of Analysis, 1980.....	206

4.37: Frequency Distribution of Gini Coefficients for State and District Scales of Analysis, 1970 and 1980.....	207
4.38: Comparison of Gini Coefficients at State Scale of Analysis With Other Scales of Analysis, 1970 and 1980.....	210
4.39: Frequency Distribution of Gini Coefficients for Urban and Rural Districts, 1970 and 1980.....	211
4.40: Mean For the 30 Gini Coefficients, 1970 and 1980...	211
4.41: Frequency Distribution of Gini Coefficients for Western and Eastern Districts, 1970 and 1980.....	215
4.42: Gini Coefficient Ratios, 1970: Spatial Inequality Gaps Between State and District Scales of Analysis, Urban Districts and Rural Districts, and Western Districts and Eastern Districts.....	219
4.43: Gini Coefficient Ratios, 1980: Spatial Inequality Gaps Between State and District Scales of Analysis, Urban Districts and Rural Districts, and Western Districts and Eastern Districts.....	220
4.44: Gini Coefficient Ratios -- Direction and Rate of Change.....	221
4.45: Ratios Between Gini Coefficients of 1970 and 1980: States, Districts, Urban Districts, Rural Districts, Western Districts, and Eastern Districts.....	223
4.46: Frequency Distribution of Gini Coefficient Ratios -- Convergence, Divergence, and Status Quo in Rate of Change.....	224
4.47: Ranking of Gini Coefficient Ratios of 1970 and 1980 (Comparisons of Variable Performance Within Regional Units).....	226
4.48: Ranking of Gini Coefficient Ratios of 1970 and 1980 (Comparisons of Variable Performance Among Regional Units).....	227

LIST OF FIGURES

FIGURE	PAGE
2.1: A Hypothetical Model of the Development Path.....	82
3.1: States in Peninsular Malaysia, 1970.....	121
3.2: States, including the Federal Territory of Kuala Lumpur, in Peninsular Malaysia, 1980.....	122
3.3: Administrative Districts in Peninsular Malaysia, 1970.....	123
3.4: Administrative Districts in Peninsular Malaysia, 1980.....	124
4.1: Process of Policy/Program Planning and Implementation, Malaysia.....	144
4.2: 1970 Comparative Districts, Peninsular Malaysia: Level of Development.....	150
4.3: 1970 Districts, Peninsular Malaysia: Level of Development.....	151
4.4: 1980 Comparative Districts, Peninsular Malaysia: Level of Development.....	163
4.5: 1980 Districts, Peninsular Malaysia: Level of Development.....	164
4.6: Distribution of Piped Water Supply in States, Peninsular Malaysia, 1970 and 1980.....	208
4.7: Distribution of Agricultural Extension Service in States, Peninsular Malaysia, 1970 and 1980.....	208
4.8: Distribution of Piped Water Supply in Districts, Peninsular Malaysia, 1970 and 1980.....	209
4.9: Distribution of Agricultural Extension Service in Districts, Peninsular Malaysia, 1970 and 1980.....	209

4.10: Distribution of Piped Water Supply in Urban Districts, Peninsular Malaysia, 1970 and 1980.....	212
4.11: Distribution of Agricultural Extension Service in Urban Districts, Peninsular Malaysia, 1970 and 1980.....	212
4.12: Distribution of Piped Water Supply in Rural Districts, Peninsular Malaysia, 1970 and 1980.....	213
4.13: Distribution of Agricultural Extension Service in Rural Districts, Peninsular Malaysia, 1970 and 1980...	213
4.14: Distribution of Piped Water Supply in Western Districts, Peninsular Malaysia, 1970 and 1980.....	216
4.15: Distribution of Agricultural Extension Service in Rural Districts, Peninsular Malaysia, 1970 and 1980...	217
4.16: Distribution of Piped Water Supply in Eastern Districts, Peninsular Malaysia, 1970 and 1980.....	218
4.17: Distribution of Agricultural Extension Service in Eastern Districts, Peninsular Malaysia, 1970 and 1980.....	218
5.1: A Model Of The Evaluation Process Of Development.....	246

CHAPTER ONE

INTRODUCTION

The pursuit of development is to promote and achieve desirable changes (Cant, 1975; Gore, 1984). Seers (1969) views development as a normative concept that is almost a synonym for improvement. Colman and Nixon (1978, p.2) reinforce the concept when they state:

"Development can be considered . . . as a process of improvement with respect to a set of values. . . . The values in question relate to desired conditions in society." Any adverse consequences and effects resulting from the initiated development process are, therefore, not only undesirable, but also reflect shortcomings and posed constraints in the strategies and execution of development. As Bruton (1985, p.1114) remarks: "What impedes the achievement and exercise of these efforts [to achieve higher welfare] impedes development."

It is a fact that spatial inequalities in development is a common development phenomena found in all countries, regardless of their politico-economic system (Forde, 1968; Slater, 1975; Abu-Lughod and Hay, Jr., 1979; Stohr and Taylor, 1981; Smith, 1982). Some degree of spatial inequalities in development, though undesirable, is inevitable and will always prevail. However, when spatial inequalities in development persist and result in distinctive and polarized differences between sub-national areas, then such phenomena become

problematical to development. The potential polarized trajectory of the development process from such a spatial configuration would not only serve to intensify development problems, but also could negate and stifle the development process being undertaken (Slater, 1975). Regional conflicts may have the detrimental effect of slowing down, and hence jeopardizing, efforts toward achieving a more equitable and integrated development. The incessant persistence of spatial inequalities in development as well as the potential negative impact on future development process cannot, therefore, be considered a desirable change. Hence, Bruton (1985) considers inequality in development as an important and damaging failure. The persistence of spatial inequalities in development as well as their potential to become acute, through polarization over time, therefore, not only provides legitimate concern for its resolution, but also bears important implications and significance as an issue of development.

Spatial Development In Developing Countries

A fundamental concern of considerable importance to most developing countries in their relentless quest for development has not only been over how the development process could generate and produce a more equitable distribution of the benefits of development (Jakobson and Prakash, 1971), but also over the persistence of distinctive disparities in development between geographical areas and the inhabitants therein (Bhooshan and Misra, 1980; Cole, 1981). "The persistence . . . of spatial inequalities in development constitutes a

crucial problem in the territorial organization of Third World countries" (Slater, 1975, p.99).

The view that spatial inequalities in development constitute a problem requiring (policy and planning) intervention hinges upon the arguments asserting that a polarized spatial pattern of development could have adverse implications for overall national development (Gore, 1984, p.20). Consistent with such a concern, governments of most developing countries seek to spread the benefits of development as effectively as possible throughout all geographical entities under their governance so as to achieve a relatively more balanced spatial structure that could improve and increase access of large segments of the population to social, economic and political opportunities (Hoyle, 1974; Rondinelli and Ruddle, 1977). In accordance with the growing interest by governments in developing countries in the way that spatial organization could be articulated to ensure that the benefits of development reach the greatest number of the intended recipients, a variety of development programs have been espoused and implemented with the aim of ameliorating and enhancing the social and economic well-being of the country's various geographical entities. While it is acknowledged that such measures are germane to promoting social and economic advancement, most efforts undertaken lack adequate consideration of the spatial dimension of development. This is clearly reflected by the tendency of most developing countries to deal with development in a sectoral fashion. As Patnaik (1982, p.18) aptly and succinctly stated:

In Third World countries, space as a policy parameter to the socio-economic problems appeared much later. Even now for most of the less developed countries, it is still in a formative stage. Not that these countries do not have regional problems. Rather . . . the regional issues were submerged by issues like unemployment, underemployment, hunger, disease, droughts and floods on a national scale, and no less by the political issues in the wake of their independence [Also] the economists in the Third World are also no less responsible for neglecting space, because of their . . . anxiety for not lagging behind their western counterparts in building macro-economic models for their countries. Most of these economists had their training and derived inspiration from the West They could not . . . look to their domestic problems from a fresh angle, until the pressure of events made them do so. (Emphasis added).

Such an emphasis, dominantly aspatial in focus, creates problems of equitable spatial organization. Thus, at the Seminar on National Development and Regional Policy, sponsored by the United Nations Center for Regional Development (UNCRD), in 1979, (Prantilla, 1981) some of the participants' major observations were:

- (1) there was a lack of effective integration among national and regional policies in developing countries, and,
- (2) most policies of developing countries on investments tended to be space-neutral.

Chatterji (1976, p.1) also remarked that "over the years, it has been increasingly realised that national planning has not led to a balanced development in most countries. One of the reasons is that . . . most economic planning strategies . . . abstract the notion of space" as well as considerably ignores the social dimension of development (Crooks, 1971). Referring to national plans for most of the countries in South and Southeast Asia, Jakobson and Prakash (1971,

p.26) advanced the view that "they concentrated on the problem of economic growth and increasing financial resources, and [as a result] gave inadequate attention to relating economic development to its spatial consequences." Colman and Nixon (1978) have observed that the preoccupation of the less developed countries with national aggregates and averages inevitably led to the neglect of the problem of spatial distribution of development. As a result, the spatial configuration of development which emerged in most developing countries has been predominantly characterized by small, scattered oases of relatively developed areas and a vast desert of relatively underdeveloped hinterland. Friedmann (1972) referred to such a spatial development landscape as center-periphery configuration. According to Friedmann (1966), a prolonged center-periphery relation led to potentially extreme inequities and hence restricted development.

Economic and social development in most less developed countries has been characterized by centripetal forces of concentration and agglomeration of public as well as private investments favoring the relatively more developed regions (Mehretu, Wittick and Pigozzi, 1981); where the bulk of modern industry, infrastructure, services and institutions were concentrated, underdevelopment remained pronounced in the peripheral rural areas inhabited by the majority of the national population. (Rondinelli and Evans, 1983). According to Boudeville (1971) and Jose A. Smith (1974), the problem of regional inequalities in development was more intense in the developing countries than elsewhere (El-Shakhs, 1976; Abu-Lughod and Hay, Jr.,

1979; Higgins, 1981). Logan (1980, p.iii) pointed out that "there is now . . . widespread acceptance of the necessity for disaggregation in space in the course of planning national development."

The dichotomy that characterizes development in developing countries is reflected in and reinforced by the existence and persistence of a polarized spatial settlement pattern (Rondinelli, 1979/1980). Investments in productive activities, infrastructure, services and facilities have generally been concentrated in the major urban centers (Coates, Johnston and Knox, 1977) in the belief that the higher returns expected in these centers would stimulate growth and accelerate development, and that the resultant benefits would gradually filter and transmit to the peripheral rural hinterland -- as happened in many industrialized nations of Europe and North America. However, "both empirical evidence and theoretical explanations point to the tendencies of development toward concentration or spatial polarization . . . in one or a few core areas within developing national systems" (El-Shakhs, 1976, p.127).

Experiences of most of the Third World countries (TWCs) indicated that the spread effects of concentrated investments in a few major urban centers or geographical areas were not as effective as theoretically anticipated (Ahluwalia, Carter, and Chenery, 1979). The backwash effects tended to be greater than the trickle-down effects. For example, among the major findings of case studies on the impact of growth centers upon their hinterland by Appalraju and Safier (1976) on Third World countries and Gilbert (1975) on Columbia

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

indicated that spread effects from growth centers were usually smaller than expected or less than the backwash effects and had a negative net result on the hinterland (Stohr and Todtling, 1977). Leinbach (1972) remarked that the spatial concentration of development activities around the core areas often becomes deeply ingrained and crystallized over time so that expansion is more marked in the vertical rather than the horizontal dimension. This was also endorsed by Brutzkus (1975, p.640) who stated: "For most of the developing countries spread effects are not at all promising unless a very definite decentralization policy is formulated and vigorously enforced."

The focus of development activities in certain selective urban centers or geographical areas contributed to the emergence of a galaxy of intricate urban problems; manifested by such externalities as squatter settlements, slums, housing shortages, inadequate jobs, surplus unemployed and underemployed labor force, traffic congestion, environmental pollution and degradation, and insufficient infrastructural and social facilities (Yeung, 1976). Rural or peripheral development was also affected because of loss of some of its human resources to the urban areas through rural-urban migration exerted by the centripetal forces of the more developed areas. In an attempt to redress these problems, governments of many developing countries pooled their financial resources and planning efforts together on those areas of population concentration at the expense of the lagging regions. This led to a costly cycle of unbalanced and inequitable development of many Third World countries (Adarkwa, 1983). Thus, in many developing countries the economy and society became

11
8
f
1
b
a
P
a
e
p
f
h
e
P
Q
Q
f
F
r
e
n
s
r
p

more dualistic -- the gap between the modern and traditional economic sectors as well as between the rich and the poor in the society further diverged rather than converged (Nijkamp and Van Pelt, 1983). The spatial system also became more polarized. "The disparity between the center and the periphery [in most less developed countries] has grown with few signs of abating" (Mehretu, Wittick and Pigozzi, 1981, p.1). Such a spatial configuration of development not only failed to reflect, much less generate and facilitate, a more equitable distribution of the benefits of development in the peripheral areas, but also drained them of their resources vital for facilitating rural advancement (Brutzkus, 1975). Indeed such a discordant spatial pattern of development tends to perpetuate and even exacerbated the problem of spatial inequalities in development. Baer (1964, p.269) opined that "once unequal rates of growth develop, they will tend to perpetuate themselves." This is largely due to the fact that as development activities became more concentrated in a particular location the comparative advantage of that location was further enhanced (Hicks, 1959; Mabogunje, 1981; El-Shakhs, 1976). "Once . . . decisions are made to locate a particular activity or institution at a specific point, a kind of self-generating momentum is established which continues to attract related enterprises and indeed multiplies the impact of a given social, economic, or political investment" (Soja and Tobin, 1979, p.158). The principle involved was identified by Myrdal (1957) as one of 'circular and cumulative causation', the effect of which

will be deepening of differences between various areas of a country and giving rise to spatial structures that reflect different patterns and rates of development (Mabogunje, 1981). Such a development also tended to be marked by a corresponding deterioration of other disadvantaged regions. "The disadvantaged regions did not stand still throughout this set of changes. Every development change in the advantaged region was marked by a corresponding worsening of their conditions, especially with the out-migration of the younger, more energetic population to the growing region and the consequent loss of the labor, entrepreneurship and capital which they represent" (Mabogunje, 1981, pp.59-60). The problem of spatial or regional inequality of development, therefore, constitutes an important issue of development planning in developing countries. As stated by Stohr and Todtling (1977, p.33), "the reduction of spatial disparities of living levels is a key objective of most national urban and regional development policies."

Background of the Problem in Peninsular Malaysia

Like most other emerging developing nations, the pursuit of development in Malaysia is, fundamentally, prompted and spurred by the desire to promote and enhance the social and economic well-being of her citizens. The Outline Perspective Plan, 1971-1990, a development policy guideline, posits that one of the paramount objectives of development policy is "modernization of rural life and improvement of living conditions among the urban poor through the provision of a wide

range of social services . . . and community facilities" (Third Malaysia Plan, 1976-1980, 1976, p.51). Reduction of inter-regional disparities in development constitutes an important development planning objective in Malaysia. As stated by the Second Malaysia Plan, 1971-1975 (1971, p.42):

Greater regional equality . . . [constitutes] part of the balance goal The arguments in favour of regional balance fundamentally [rests] on the notion that all regions in Malaysia share in the benefits of development.

It was also stated that "new programmes initiated will emphasize regional balance and integration" (Second Malaysia Plan, 1971-1975, p.46). The Third Malaysia Plan, 1976-1980 again stressed that the objective of regional development strategy in Malaysia was:

to narrow the disparities in the standard [level] of living between regions . . . through the exploitation of the full potential of the human and physical resources of the less developed regions through equitable distribution of the basic services and amenities (p.99)

as well as to:

to bring about closer integration among the states of Malaysia through redressing imbalances among the regions within the country (p.199).

Such policy statements, inevitably implied that the benefits of development activities should permeate and be accessible to all citizens, regardless of their economic functions and geographical locations. As stated by Rondinelli (1979/1980, p.14):

More widespread . . . and more equitable distribution of the benefits of growth are prerequisites to modernization and [also] preconditions for creating socially just and politically stable societies.

Mabogunje (1981, p.40) also argued that spatial accessibility to basic services, infrastructures and amenities associated with development efforts was vital in the endeavor to attain a more equitable distribution of the benefits of development. The importance of spatial accessibility in promoting development was also explicitly recognized by the Malaysian authorities who stated: "Besides contributing to accelerated development of the nation as a whole, the redressal of regional imbalance will ensure greater opportunities for economic and social advancement of people in different parts of the country, thereby enhancing their well-being" (Third Malaysia Plan, 1976-1980, 1976, p.114). In this regard, Kamal Salih (1977, p.38) alluded to the question of regional imbalance by stating that "the critical question of unequal access [to development benefits] in the explanation of poverty, and in evaluating the potential of poverty eradication, cannot be overemphasized." Rondinelli and Ruddle (1977) have also made a similar statement.

The persistence of disparities in the distribution of development benefits is disconcerting to the Malaysian Government; because it is recognized by the Malaysian authorities that such phenomena could negate efforts to redress regional imbalance and also to enhance the social and economic well-being of Malaysians.

The ethnic violence of May 13th, 1969, following the national

elections, was a manifestation of the symptom of lop-sided development that prevailed in Malaysia. The incident was a significant eye-opener that prompted the review and reformulation of Malaysia's development strategy. Prior to the introduction and adoption of the New Economic Policy, an important umbrella policy for national development, the thrust of Malaysia's development strategy was towards the accomplishment of rapid economic growth. The New Economic Policy, however, officially paved the way for the introduction and implementation of the concept of distribution with growth in Malaysia's development strategy (Bruton, 1982). "In the 1950's and 1960's, like the governments of many LDC's, the Malaysian government pursued policies designed to promote economic growth Only in the 1970's, particularly after the communal riots of 1969 and the subsequent formulation of the New Economic Policy (NEP), was there a definite shift of emphasis from mere growth to distribution with growth" (Muniappan, 1982, p.6; see also Aris Othman, 1984).

Realization on the part of the Malaysian authorities of the danger posed by unbalanced development spurred the formulation and enunciation of the New Economic Policy in 1971. The New Economic Policy contained two fundamental, but closely intertwined objectives: (1) eradication of poverty, and (2) restructuring of society. Concern over the persistence of disparities in development in Malaysia was again alluded to by the Deputy Prime Minister of Malaysia, during a parliamentary session in 1983, when he stated: "The [Malaysian] Government has always and will always take serious view of this [disparities in development] widening gap" (The New Straits Times,

1983, p.8). Gaps in the distribution of development benefits connoted that the aim to reduce regional inequality and to upgrade the socio-economic well-being of the people could be hampered and possibly inhibited. That posed a serious setback for development efforts aiming to achieve growth with equity. It was generally agreed by the government that regional maldistribution and inequalities were repulsive not only for their ethical and humanistic implications, but also because of their potential as root causes of discontent, political unrest, and revolution (Soja and Tobin, 1977; Butterfield, 1977; Johari Mat, 1983). As David Harvey (in Smith, 1982, Foreword) succinctly stated: "the existence of . . . social inequality challenges our ethical and moral sense, making us question the fairness and justness of the economic, political, and moral order under which we live . . . [thereby sowing] the seed that bears the bitter fruit of social unrest and revolution." For example, "the political instability in Pakistan [leading to the formation of Bangladesh] was a direct result of . . . regional difference" (Chatterji, 1976, p.2).

In view of its distributive potential, spatial or regional development has been recognized by the Malaysian Government as one of the important instruments of the New Economic Policy. Specifically, regional development programs are expected to redress inter-regional imbalances, reduce rural to urban migration, strengthen agricultural and industrial development in lagging regions, initiate the establishment of new growth centers, and realize the major objectives of the New Economic Policy (such as eradication of poverty and

modernization of the rural communities). The Second and Third Malaysia Plans clearly stated the importance of reduction of regional inequalities. The Fourth Malaysia Plan (1981, p.185) reiterated that "reducing regional disparities . . . remains an important issue in national development." Spatial disparities in development between the various regions in Malaysia is, therefore, an important development problem and issue.

As stated earlier, with the inauguration of the New Economic Policy the thrust of Malaysia's development strategy has been on equity with growth rather than on mere (economic) growth. Between 1970 and 1980 Malaysia had an impressive record of economic growth (Mahangas, 1982; Aris Othman, 1982). The Gross Domestic Product (GDP), after having grown at 6 percent per annum during the 1960s recorded a rate of growth of 7.8 percent per annum during 1971-1980, resulting in a rising per capita income (Fourth Malaysia Plan, 1981). In 1971, the GDP per capita for Malaysia was (Malaysian Ringgit) \$1,172/=, while for Peninsular Malaysia it was \$1,190/=. In 1980 the GDP per capita increased to \$1,836/= for Malaysia and \$1,886/= for Peninsular Malaysia (Table 1.1). The high growth rate was also accompanied by change in the structure of the economy. Table 1.2 indicates the substantial sectoral change of the Malaysian economy during the period.

Despite Malaysia's impressive aggregate rates of economic growth, most of the studies on development performance on Malaysia found little improvement in distributive equity (Griffin and Khan, 1979; Chan, 1979; Cheong, 1979; Mahangas, 1982; Aris Othman, 1984). Cheong

(1979, p.200), for example, found that "in spite of the relatively rapid growth of the Malaysian economy, the various states in Malaysia do not seem to have an equal share of the economic progress." Rather the internal spatial configuration of development indicated that the benefits of development were still largely distributed in areas in and around the major urban centers or regions relatively more developed in Malaysia. In their analysis of regional economic differences in the state of Selangor, Onn and Wan Abdul Rahim (1979, p. 34) found that "significant differences in economic conditions exist between the urban and rural districts of Selangor." They observed that although the state of Selangor has the highest GNP per capita among the states in Peninsular Malaysia, such indicator was not representative of the less developed districts in that state (such as Kuala Selangor and Sabak Bernam). The analyses of the temporal-spatial impress of 'modernization' (viewed as development) in Peninsular Malaysia from 1895 to 1969 by Leinbach (1972) revealed that the development surface was not only clustered around certain urbanized areas, such as Kuala Lumpur, Georgetown, Ipoh, Seremban, Malacca and Johore Bahru, but also that these areas still continued to dominate the spatial development scene. Osborn (1974a, p.361), who

Table 1.1
Per Capita Gross Domestic Product, 1971 and 1980
(in Malaysian Ringgit at 1970 Prices)

States	1971	1980
1) Johore	\$1,083.7	\$1,726
2) Kedah	\$ 728.3 *	\$1,101
3) Kelantan	\$ 564.1	\$ 842
4) Malacca	\$ 877.0	\$1,469
5) Negri Sembilan	\$1,144.5	\$1,817
6) Pahang	\$1,169.8	\$1,486
7) Penang	\$1,035.2	\$2,357
8) Perak	\$1,166.7	\$1,583
9) Perlis	\$ 728.3 *	\$1,094
10) Selangor	\$2,152.9 +	\$2,655
11) Terengganu	\$ 614.8	\$1,316
12) Federal Territory of Kuala Lumpur	-	\$3,991
13) Sabah	\$1,302.9	\$1,847
14) Sarawak	\$ 915.2	\$1,382
Malaysia	\$1,172.2	\$1,836
Peninsular Malaysia @	\$1,189.9	\$1,886

Note: * Due to combination of data, the states of Kedah and Perlis had the same per capita GDP in 1971.

+ This includes the Federal Territory of Kuala Lumpur, formed in 1971.

@ This comprises the states of Johore, Kedah, Kelantan, Malacca, Negri Sembilan, Pahang, Penang, Perak, Perlis, Selangor, Terengganu, and the Federal Territory of Kuala Lumpur.

Source: Fourth Malaysia Plan, 1981-1985, pp.100-101.

Table 1.2
Percent Share of the Gross Domestic Product
By Industry of Origin, Malaysia, 1970 and 1980

Industry of Origin	1970	1980
1) Agriculture, Forestry, and Fishing	31	22
2) Mining and Quarrying	6	5
3) Manufacturing	13	21
4) Construction	4	5
5) Electricity, Water, and Sanitary Services	2	2
6) Transport, Storage, and Communication	5	7
7) Wholesale and Retail Trade	13	13
8) Banking, Insurance, and Real Estate	4) 8
9) Ownership of Dwellings	4)
10) Public Administration and Defence	11	13
GDP at factor Cost	100	100

Sources: Fourth Malaysia Plan, 1981-1985, p.11;
Aris Othman (1982). "Growth, Equality and Poverty in Malaysia, 1957-80." Ph.D. Dissertation, Boston University, Massachusetts.

undertook a spatial analysis of development in Peninsular Malaysia (1974b), and contended that although "development policy has . . . been consistent over time, yet [it] has . . . certain discernible trends in its areal content. Development policy has been [mainly] city-centred in the post-war period." This observation was endorsed by Johari Mat (1983, pp.1-2):

The . . . practice of concentrating development on established core areas was able, in a limited way to strengthen national growth; but, in a more substantive way, the practice failed to develop peripheral and local populations economically and socially.

Development studies from non-spatial perspective, such as those undertaken by Aris Othman (1984), Anand (1983) and Cheong (1979), also testify to the fact that, overall, the problem of socio-economic inequality in Peninsular Malaysia has not been significantly reduced, rather it has exacerbated over time. In his analysis of development in Peninsular Malaysia from 1957 to 1980, Aris Othman (1984, p.v) has made the following conclusion: "In terms of the Kuznets' hypothesis, at Malaysia's per capita income, income distribution should have remained unchanged during 1957-70 but in fact inequality rose sharply. During 1971-80, inequality should have fallen slightly; instead, it increased further." The analysis of the time-path of Peninsular Malaysia's regional growth rates in per capita gross domestic product (GDP) from 1963 to 1970 by Cheong (1979) indicated that not only did inter-regional differences in income exist, but also the reduction of regional inequalities was not significant over time. According to

Cheong's study (1979, p.201), "there appears to have been an increasing trend towards income inequality." Anand (1983, p.273), who undertook analyses of inequality and poverty for Peninsular Malaysia from data generated by the 1970 Post-Enumeration Survey (PES), reached a similar conclusion regarding the inequality problem: "A detailed examination of PES and income concepts shows overall inequality in Malaysia to be high."

The persistence of spatial and socio-economic disparities in the distribution of development is not only dysfunctional for articulating effective diffusion of development benefits, but also is clearly incommensurate with as well as detrimental and prejudicial to the objective of promoting equitable development. In fact, the agglomeration of development in and around the major urban centers or regions relatively more developed tends to perpetuate, as well as accentuate, polarized development. In turn, this gives rise to such problems as overurbanization (Hoselitz, 1957; Sovani, 1964; Gugler, 1982), underurbanization (Rondinelli, Lombardo and Yeh, 1979), pseudo-urbanization (McGee, 1971; Rondinelli, Lombardo and Yeh, 1979), inter-regional disparities in development and excessive rural-urban migration. The concentrated spatial pattern of development not only reflects, but also induces an unbalanced allocation and distribution of national development resources. This means that the effects and benefits of development efforts are, inevitably, limited and constrained by the physical extent of their distribution. Since "the spatial dimension is an important basic framework within

which considerations of developmental problem must be set" (Manshard, in Hoyle's, 1974, Foreword), and the fact that the spatial pattern of development in Malaysia appears to be focused in areas in and around the major urban centers or regions relatively more developed, this suggests that a change in the areal configuration of development is essential and desirable in order to promote and foster the accomplishment of a more equitable distribution of benefits of development. Indeed, change is imperative when it is remembered that discrepancy in the spatial distribution of development also bears significant implications for the New Economic Policy's twin-prong objectives of (1) eradication of poverty, irrespective of ethnic background, and (2) restructuring of society, so as to erase identification of economic functions with ethnicity and geographical location. The phenomena of regional inequalities become crucial when it is further recalled that the bulk of the Malays, the major ethnic group in Malaysia, are prominently to be found in the peripheral rural areas, and the Chinese, the next major ethnic group, are mostly to be found in the urban enclaves (Ariff, 1973; Jin-Bee, 1976; Bussink, 1980). Thus, geographical polarization of development also has ethnic polarization overtones in Malaysia. As Ariff (1973, p.378) aptly remarked: "dualistic development has serious racial [ethnic], regional and political implications in the Malaysian context." Cheong (1979, p.200) endorsed this view:

Regional . . . disparity in Peninsular Malaysia is compounded by the fact that it bears strong racial overtone It is obvious, therefore, that reducing the gap between the Malays and non-Malays . . . would require a reduction in the disparities among regions.

In view of the Malaysian authorities' recognition that peace and stability were prerequisites for development (Fourth Malaysia Plan, 1981-1985, 1981, p.vii), a balanced socio-economic development among regions is therefore an essential element of the development planning strategy in Malaysia for achieving. Furthermore, prior to 1970 "area" was largely a residual concern in the development planning strategy of Malaysia. This does not, however, mean that the areal concepts of development were totally absent in the planning deliberations and documents. Rather, the primary focus of Malaysia's development strategy then was heavily bent towards the promotion of rapid national aggregates or that emphasis was more towards the sectoral perspective of development (Osborn, 1974b).

Problem Statement

Spatial disparities in development can be reduced by appropriate planning interventions (Dangschat and Zirwes, 1982). Availability of adequate relevant information is fundamental in efforts to address the problem. However, lack of adequate, comprehensive data pertaining to the problem of spatial development in Malaysia, especially at the district level, can constrain efforts to deal with the problem. A large body of known information pertaining to the problem of spatial disparities in development in Malaysia is available at a scale of analysis that is either too large as to suppress or conceal some of the important details relating to the problem, or too specific so that they have limited relevance and usefulness other than

for the specific area which such information encompass. Most of the available information on development performance, such as those contained in the five-year plan documents, indicates the sectoral performance of development at the state-scale of analysis. While such information is useful, it , however, lacks important details. On the other hand, information made available by different regional studies, undertaken either by private development consultants or by certain government departments and agencies, also has limited utility. This is because these studies are not only based on different terms of reference and objectives, but also cover only certain specific areas during different time periods. According to Abdul Hamid (1979,p. 137): "The various planning 'region' . . . have been . . . studied and planned in isolation at different times by different groups of consultants." Such information, therefore, has limitations with respect to the comprehensiveness of areal coverage.

Comparability of such information is also constrained not only by the different time frame during which such studies are covered, but also because different variables and techniques enter into these isolated studies. The lack of adequate, comprehensive information relating to the problem of spatial disparities in development in Malaysia could, therefore, pose an important constraint in the efforts to deal effectively with the problem. As aptly stated by Elyas Omar (1980, p.48): "The problem of policy planning in Malaysia is related to the availability of information in terms of its sufficiency, relevance and accuracy."

In the absence of adequate data base, articulation of planning strategies would then be characterized by irrational "muddling through" (Lindblom, 1978); resulting therefore in ad hoc and unintegrated action. Actions based on limited information could, in fact, further exacerbate rather than contain the problem. Therefore, adequate data and information on the problem of the extent of spatial disparities in development in Malaysia, especially at a geographical scale that can provide sufficient details, is essential to facilitate efforts to address the problem effectively.

Objective of the Study

There are two basic rationales for pursuing this study. First, it relates to the theoretical proposition that evaluation of the reduction of inequality constitutes an important component of the study of development (Seers, 1972; Adelman and Morris, 1972) as well as the theoretical contention that inequality is a necessary and concomitant process of development, and that it will diminish over time (Kuznets, 1955; Williamson, 1965; Hirschman, 1958). The second fundamental reason for undertaking this study is motivated by the Malaysian Government's concern and interest over the problem posed by inter-regional development inequalities as well as its recognition that reduction of regional inequality is also crucial to the development process. As the Fourth Malaysia Plan, 1981-1985 (p.185) states: "Reducing regional disparities . . . remains an important issue in national development."

As mentioned earlier, the eye-opener on the importance of addressing the problem of inter-regional inequality was the outburst of the 1969 ethnic violence in Peninsular Malaysia. That tragic incident was not only seen as symptomatic of the prevalence of unbalanced distribution of the benefits of socio-economic development, but also clearly demonstrated the negative consequences as well as the danger posed by the persistence of lop-sided development. Furthermore, ensuing policy pronouncements clearly reflected the Malaysian Government's concern over the problem of unbalanced regional development.

Despite the importance of addressing and understanding the problem of regional development disparity, there was little research on the problem. The need to focus on the problem of regional disparities in development was therefore imperative. Further, this was also spurred by the Malaysian Government's disclosure that accomplishment in regional development was marginal.

The marginal success in reducing inter-state [regional] imbalances requires a review and a redirection of the strategy for regional . . . development (Mid-Term Review of the Fourth Malaysia Plan, 1984, p.21).

In light of the importance of the issue of inter-regional inequalities of development in Malaysia, it is appropriate to examine the extent of regional inequalities thereby facilitating a better understanding and appreciation of the problem. Only then can appropriate and sound remedial measures be articulated and

implemented. As Coates, Johnston and Knox (1977, p.2) aptly stated: "Solution [to any problem] requires understanding." With these considerations in mind, the main objective of this study is to examine the pattern of spatial development and assess the extent of inter-regional inequalities in development in Peninsular Malaysia between 1970 and 1980. Specifically, the research will:

- (1) ascertain whether the problem of inter-regional disparities in development in Peninsular Malaysia was reduced or accentuated between 1970 and 1980,
- (2) identify regions which are relatively more developed as well as regions which are relatively less developed,
- (3) determine the effect of using different geographical units of analysis upon measures of spatial inequality, and,
- (4) suggest policy measures to enhance efforts for accomplishing reduction of inter-regional inequality of development as well as in the promotion of a more equitable distribution of the benefits of development in Peninsular Malaysia, in particular, and in Malaysia, in general.

Hypotheses

The hypotheses advanced for this study are:

- (1) Spatial inequalities in development exist at both state and district scales of analysis;
- (2) Regional inequalities in development are relatively more acute at the district rather than the state scale of

analysis;

- (3) Regional inequalities in development are relatively more acute for the rural rather than the urban districts;
- (4) Regions which are relatively more urbanized tend to have relatively higher level of development than regions which are relatively less urbanized;
- (5) Regional inequalities in development are relatively more acute for districts in the east coast states than districts in the west coast states of Peninsular Malaysia;
- (6) The pattern of inter-regional inequalities in development has not changed significantly over time.

Significance of the Study

Despite the importance of understanding the problem of regional inequalities in Malaysia, research on the subject is small-- the examples documented are the 1982 Household Well-Being Survey by the Socio-Economic Research Unit of the Prime Minister's Department, Malaysia; Anand, 1983; Snodgrass, 1980; Cheong, 1979; Abdul Hamid, 1979; Onn and Wan Abdul Rahim, 1979; Ahmad Idris Mohd. Noor, 1983; Leinbach, 1972. In most cases, however, the main focus has been on inter-state variations in economic and social development mainly from an aspatial perspective. While it is not disputed that such studies can and do contribute to some comprehension of inter-state regional variations in economic and social development, they do not, however, shed much light on intra-state regional disparities in development.

Efforts to reduce inter-state regional inequalities in development requires and hinges upon appropriate remedial actions within each state, as well as in cooperation with the other states. Understanding of intra-state regional variations in development is, therefore, also important in the task to address and redress the problem of regional inequalities. This study, therefore, looks at the problem of regional disparities using the administrative districts as its unit of analysis.

An examination of intra-state regional disparities in development is desirable to indicate the extent of the inequality problem within the state as well as in comparison to the other regions in other states. The information and empirical knowledge generated from this study would not only fill some of the gaps in information pertaining to the problem of inter-regional development in Peninsular Malaysia but would also modestly provide some insights regarding the extent of spatial disparities. Thus, this study also examines regional disparities using other geographical units; urban and rural districts and districts in the west coast states and east coast states. Understanding of the magnitude of the problem of spatial inequalities in development is useful, especially to planners and policy-makers, since, as Streeten (1981, p.137) aptly states: "what we know . . . enters into our models and policies." Thus, Cant (1975, p.76) has stated that "the knowledge that can be gained from empirical research is invaluable."

It is also hoped that this study will stimulate further empirical studies as well as generate relevant inquiries and

discussions pertaining to the problem of spatial inequality of development. Planning on the basis of regions has been stated as an important strategy for articulating a more effective reduction of inter-regional inequalities of development in Malaysia (Mid-Term Review, Fourth Malaysia Plan, 1981-1985, 1984, p.21). Undoubtedly, an important pre-condition to facilitating the implementation of this strategy is the determination of the development status of the regions in question. By examining the pattern of spatial development and magnitude of regional inequalities this study could contribute towards making 'planning on the basis of regions' a workable development planning framework.

According to Colm and Geiger (1962, p.66): "it is never enough to judge theories, decision models , etc., only by their logical validity; they must also be submitted to such empirical verification as may be possible." In this regard, this study will modestly enhance the theoretical propositions that evaluation of reduction inequality is an important component of the study of development as well as that development is multi-dimensional in character and therefore requires the use of multiple indicators of development. Perhaps a more important contribution of this study is to test the theoretical proposition that inequality in development will be reduced over time.

Key Concepts Of The Study

Development, inequality, and spatial inequality constitute the three key concepts of this study. Admittedly, they are concepts not easily defined. Nonetheless, to facilitate their understanding as used by this study, it is therefore expedient and useful to conceptualize these terms -- though it should be clearly cautioned that it will not be possible to arrive at an exact and precise definition of these terms.

Development is an intriguing and complex concept. Being abstract and ambiguous, development means different things to different people. Its conceptual meaning also varies in different contexts, culturally (Khan, 1981; Horn, 1984) as well as temporally (Mabogunje, 1981). However, a large consensus sees development as a normative concept, almost a synonym for improvement (Okun and Richardson, 1961; Seers, 1972; Colman and Nixon, 1978; Abdul Hamid, 1979; Honjo, 1980; Bhoshan and Misra, 1980; Bryant and White, 1982). There is also growing consensus that economic growth per se is not development (Patnaik, 1982; Vyasulu, 1977; Weinand, 1973; Colm and Geiger, 1967; Bryant and White, 1982). This is not only because growth involves "merely a set of increases in quantities produced" (Boudeville, 1966, p.168-9), but because the concept of development, in reality, means much more than that: it encompasses all tangible and intangible aspects of life.

With these qualifications, development in this study is taken to

mean a continuous, multidimensional process involving positive change or improvement in both the quantitative (material) and qualitative (non-material) aspects of life for the ultimate well-being of the people (Okun and Richardson, 1961; Harbinson, 1967). Thus, it has been contended that "development means the development of people" (Nyerere, 1968, p.123; Weinand, 1973; Leupolt, 1977). The "qualitative transformations must occur concurrently with quantitative increases" (Colm and Geiger, 1967, p.272). Also, in this study, development is operationally evaluated in terms of certain, selective tangible indicators of development, primarily based upon their theoretical pertinence to development and also upon consideration of availability of data. It should be clear that these indicators are only pointers of development. Throughout the study, the term "development" is often used interchangeably with such terms as improved socio-economic well-being and improved level of living.

According to the Webster's Third New International Dictionary, 1981), inequality means 'the quality of being unequal or uneven'. In the context of development, inequality in development therefore connotes the unequal or uneven distribution of development benefits. Since it is generally agreed that the principal and ultimate beneficiary of development is the people, as well as considering the fact that the population is not uniformly distributed in a geographical space, inequality in development in the context of this study therefore means the uneven distribution of development relative to the proportional geographical distribution of people (Adarkwa, 1982).

This implies that, ideally, the benefits of development should be distributed in accordance with the spatial distribution of the population. Any deviation from this ideal pattern will, for the purpose of this study, be considered inequality. Also, it should be made clear that statements concerning the undesirability of the persistence of inequality in development in Malaysia does not imply that what is sought in redressal measures is action towards creation of equality in development. Equality as an objective of development is realistically an impossible task to accomplish, let alone to pursue; since the concept of equality as applied to mankind implies that all people are equal and that they should have equal status, wealth, and influence (Jumper, Bell and Ralston, 1980). Therefore, the concept of equality is, at best, an idealistic goal.

Spatial inequality relates to the differences existing between different areas based upon spatially-defined and comparable variables. Spatial inequality may refer to both a desired and to an undesired difference. Variation in the landscape is generally considered desirable, while large or growing differences in conditions and level of living are deemed undesirable (Folmer and Oosterhaven, 1979). In the context of development, spatial inequality connotes an undesired difference. It implies not only the unbalanced distribution of development benefits, but also the maldistribution of resources for development. An undesired spatial difference is, therefore, also viewed as spatial inequity. "Spatial inequality associated with . . . an undesired difference . . . [is] defined as spatial inequity"

(Folmer and Oosterhaven, 1979, p.1). Equitable development, therefore, implies actions toward mitigating the problem posed by spatial inequity. This is pertinent as "development . . . now stresses equity as well as growth" (Edwards and Todaro, 1974, p.25). Throughout this study, the term spatial inequality will also be used interchangeably with terms such as spatial variation and regional disparity of development.

Organization Of The Study

This dissertation is organized into six chapters. Chapter One introduces spatial inequality of development as an important issue of development -- both in developing countries in general and in Peninsular Malaysia in particular. Statement of the problem prompting this study is contained in this initial chapter. This chapter also includes the objective, significance, and definition of key concepts of the study. Research questions and hypotheses are presented in this chapter.

Chapter Two provides a review of the literature and theoretical constructs pertaining to development and regional inequality in development. The review provides the theoretical rationale for addressing the problem posed by the problem of spatial inequality of development.

Chapter Three discusses the methodology of the study. It outlines the focus of the study, the variables utilized, the unit of analysis used, and the procedures and research techniques used for analysis of data.

Chapter Four presents the findings of the study, based upon the analyses of data used in the study. It also attempts to answer the research questions posed as well to test the hypotheses that have been advanced for the study.

Chapter Five examines policy and planning implications of the findings of the study for Malaysia and directions for policy guidelines.

Chapter Six summarizes the overall findings of the study, and provides suggestions for future research.

CHAPTER TWO

REVIEW OF THE LITERATURE ON DEVELOPMENT AND REGIONAL INEQUALITY

This chapter reviews some of the relevant propositions and studies from the literature which bear pertinence to development and to regional inequality in development. There are five main objectives: (1) to highlight problems associated with definition and measurement of development, (2) to emphasize inequality as an important issue of development, (3) to rationalize why the spatial aspect of development deserves appropriate consideration in deliberations on development, (4) to highlight relevant theoretical propositions and related empirical studies that are pertinent to development and to inequalities in development, and (5) to derive research questions and hypotheses for this study.

Meaning, Dimensions and Goals of Development

A precise definition of development is difficult (Bruton, 1985; DeKadt, 1985). The literature is abound with different definitions of development, reflecting lack of unanimity among scholars as well as practitioners on what development means. The difficulty in arriving at a uniform definition of development can be attributed to its complexity as a concept. This, inevitably creates ambiguity on what

development entails. Thus, there are varying and subjective notions of development (Furtado, 1977). The result is the emergence of a myriad of perceptions of development (McGranahan, 1972; Streeten, 1981; Bryant and White, 1982).

The various interpretations of development are actually manifestations of different perceptions of development. As DeKadt (1985, p.551) aptly points out: "based on our value judgements, we can give it [development] a meaning." Earlier, Goulet (1969) has expressed a similar view, asserting that standards of good life and good society are based on what the society perceives. Seers (1969) has also opined that development is a normative concept based on value judgements. Colman and Nixon (1978, p.2) have reinforced this notion of development when they state: "development can be considered . . . as a process of improvement with respect to a set of values . . . [which] relates to a desired conditions in society."

Essentially, the various perceptions of development can be viewed into five major conceptualization of development:

- (1) development as growth
- (2) development as change
- (3) development as human well-being
- (4) development as reduction of inequalities, and
- (5) development as liberation from dependency.

All these concepts identify development with positive rather than negative characteristics. There is also general agreement among these different perceptions that development is a process that produces benefits rather than disbenefits.

The perception of development as growth is one in which development is perceived to be rapid and sustained "linear increments in a set of variables in a society which are characterized by being measurable, especially in monetary terms" (Mabogunje, 1981, p.334). The result is seen as contributing to rise in real output per head as well as attendant shifts in technological, economic and demographic characteristics (Dos Santos, 1977). This notion of development gives priority in the development process to increased commodity output rather than human-beings involved in their production. This perception of development is usually identified with those who view development mainly in terms of economic conditions. Hence this view of development is often referred to as economic transformation (Portes, 1976). Dadzie (1980, p.59), for example, states: "development implies profound change in the economic arrangements within as well as among societies."

The conceptualization of development as change is one in which development is seen as involving shift or adjustment from a less desirable to a more desirable condition or state (Okun and Richardson, 1961; Seers, 1972; Colman and Nixon, 1978; Higgins, 1980; Bhooshan and Misra, 1980). As Streeten (1972, p.30) states: "development as an objective and development as a process both embrace a change in fundamental attitudes . . . and in social, cultural and political institutions" (also see Schramm and Lerner, 1976; Inayatullah, 1967). In this respect, two major types of change have been conceived:

- (1) change within the national system or society; such as from

tradition to modernity, agricultural to industrial societies, or less urbanized to more urbanized societies;

(2) change within the individual in values and attitudes.

The first type of change sees development as transformation which societies undergo. Human societies are envisioned as growing organisms which passed through a series of ordered and inevitable stages.

Development is conceptualized as gradual, qualitative passage from less to more differentiated social forms. This occurs through processes of ever more complex specialization and functional interdependence. Through them, social roles are transformed to approach modern standards of universalism, specificity, and achievement (Portes, 1976, p.63).

Drawing on Boeke's (1953) concept of social and economic dualism, the modern sector is rationalized as being responsive to change, while the traditional sector is seen as unresponsive to change. Lewis (1954) calls these industrial and agricultural societies, while Hoselitz (1960) views them as developed and underdeveloped societies. Lerner (1965) and Levy (1966) refers to them as modernity and tradition. This perception is usually identified with the conceptualization of development as social or socio-economic differentiation. Smelser (1966, pp.110-111) provides a clearer picture of what this perception of development means.

When we employ the term [development] we usually have at least four distinct but interrelated processes in mind: 1) In the realm of technology, a developing society is changing from simple and traditionalized techniques toward the application of scientific knowledge. 2) In agriculture, the developing society evolves from subsistence farming toward the commercial production of agricultural goods 3) In industry, the developing

society undergoes a transition from the use of human and animal power toward industrialization proper 4) In ecological arrangements, the developing society moves from the farm and village toward urban concentration.

This perception of development represents a shift from a commodity-oriented emphasis to a human-oriented emphasis. Although a less excessively narrow economic interpretation of development, Mabogunje (1981, p.38) asserts that this view of development is closer to growth-oriented concept of development, since it "involves principally how to make the population of a country understand and accept the new rules of the economic growth game."

The second type of change is where individuals are seen as acquiring values and attitudes that are deemed desirable to the development process as well as for nation-building. This notion of development is represented by Weiner (1966), who feels that the starting point of any definition of development should deal with the character of individuals. The same author observes that "although there are differences among social scientists as to how values and attitudes can be changed, it is possible to speak of one school of thought that believes that attitudinal and value changes are prerequisites to creating a modern society, economic, and political system" (Weiner, 1966, p.9). McClelland (1963, p.17) has even ventured to state: "it is values, motives, or psychological forces that determine the rate of economic and social development." According to Inkeles (1966, p.138): "the ideal of development requires the transformation of the nature of man -- a transformation that is both a means to the end of yet greater growth and at the same time

one of the great ends itself of the development process" (also see Lerner, 1965; Portes, 1974).

The value-enactment view of development is controversial. Critics have noted, for example, its neglect of international and political linkages. As Portes (1976, p.71) points out: "individual action is highly conditioned by external social arrangements [Furthermore] societies are not simple 'additive' sum of individual members."

The third major perception of development is one which views development as improvement in human well-being. Nyerere's (1968, p.123) view that "development means the development of people" and Honjo's (1980) perception that development should be geared to the betterment of human beings as a whole are, perhaps, indicative and representative of the growing consensus that the fundamental and ultimate objective underlying development is the people. Hence, Misra (1980, p.21) has asserted that "all development processes aim at human welfare" and Mabogunje (1981, p.236) has contended that "improvement in the 'quality' of the population is, of course, what development is all about" (also see Weissmann, 1968; Webster, 1980). Even Schumacher (1973) has opined that development does not start with goods but, rather, with people (also see DeKadt, 1985). Such assertions are also in line with Seers' (1972) view that development means creating conditions for the realization of the human personality as well as with Ellis' (1980) contention that the ultimate purpose of development is to secure a better quality of life for the people (also see

Lentnek, 1980). As Goulet (1968, p.387) has eloquently noted:

Although development implies economic, political and cultural transformations, these are not ends in themselves but [they are] indispensable means for enriching the quality of human life.

Development as reduction of inequalities is the fourth major perception of development. Seers (1972) and Adelman and Morris (1972) view reduction of inequalities as an important criterion of development. Such an assertion is logical since the overriding purpose of development is, normatively, to bring about desired, positive changes (Gore, 1984; Cant, 1975). Implicit in this notion of development is an equitable distribution of development benefits and opportunities.

The fifth major perception of development is related to its conceptualization as liberation from internal and external dependency. As Portes (1976, p.77) notes: "development consist . . . of liberation from external control and from the internal structures of inequality which it promotes" (also see Frank, 1967). Dependency can be defined as a situation in which the economy of certain countries (or parts thereof) is conditioned or dictated by the development and expansion of another economy to which the former is subjected (Dos Santos, 1970). This is based on the notion that contemporary development is not a matter of autonomous change but are composed largely of exchange and confrontation in an integrated world or national system (Wallerstein, 1974; Portes, 1974; Sunkel, 1974). Involvement in the New International Economic Order and pursuit of the principles of national resilience and self-reliance are manifestations of the

efforts to deal with the dependency issue.

The existence of various conceptualizations of development testifies to the fact that development comprises and encompasses a number of dimensions or aspects. This is clearly indicated by Todaro (1977, p.62) who aptly states that development is a "multidimensional process involving major changes in social structures, popular attitudes and national institutions as well as the accumulation of economic growth, the reduction of inequality, and the eradication of poverty." A similar view has also been expressed by the Brandt's Commission (Brandt, 1980, p.40):

Development is more than the passage from poor to rich, from traditional rural economy to a sophisticated urban one. It carries with it not only the idea of economic betterment, but also of greater human dignity, security, justice, and equity.

It should be noted, however, that the various dimensions of development are not mutually exclusive of each other, rather they are interdependent.

The fact that development has been conceived in many different ways suggests that there exists no congruity among theorists, as well as practitioners, as to what development exactly means and how it should occur (see Gore, 1984). As such, it is not surprising that there have emerged and ensued all kinds of debates regarding development -- such as growth versus distribution, growth versus growth with equity, top-down versus bottom-up approach to development, growth-pole versus agropolitan development, centralization versus decentralization, people prosperity versus place prosperity.

Notwithstanding these polemics, scholars generally agree that no single factor can adequately account for a process as complex as development.

There is also broad and growing agreement in the literature behind the notion that growth is not synonymous with development (see Patnaik, 1981; Mabogunje, 1981; Vyasulu, 1977; de Souza and Porter, 1974; Weinand, 1973). Seers (1972) pioneered the notion that economic growth could not be equated with development. His question "Why do we confuse development with economic growth?" is reflective of the confusion that exists between growth and development (Seers, 1972, p.21). As Datto and Gray (1978, p.252) observe:

The significant distinction between 'growth' and 'development' is becoming more widely accepted in the face of mounting evidence that rapid economic growth is not necessarily accompanied by the structural changes essential for social and economic progress to benefit society as a whole.

Distinction between development and growth is crucial since the way these phenomena are perceived bears significant influence not only upon the way in which development is executed, but also in the pattern and nature of spatial development that could emerge. As Mabogunje (1981, p.334) points out: "growth has tended to be concerned with linear increments in a set of variables in a society which are characterized by being measurable, especially in monetary terms." On the other hand, "development, while it embraces . . . growth goes beyond it to involve changes in the relations between various classes in society and between them and the environmental resources on which

they depend" (also see Boudeville, 1966). Earlier, Boulding (1956, cited in Mabogunje, 1981, p.334) has remarked: "development involves not only changes in the overall size of the system but also in its complexity."

There is also broad consensus in the literature on development that no absolute standard exists for specifying what type of change constitutes development; since the criteria will be based on different preferences, problems or needs of the society or culture. The criteria of desirable change also varies for different time periods (Coates, Johnston, and Knox, 1977). As Gore (1984, p. 241) aptly points out: "development . . . in terms of both rhetoric and actual policy measures, varies considerably between states" (see Frankel, 1952). Since problems and needs of different nations also varies in nature and magnitude, it would not, therefore, be appropriate to gauge development performance of any country, which are guided by different development goals and objectives, in terms of development performance criteria as used by other countries. This, McGee (1974, p.32) contends, is because development is not a simple unilinear change. McGee (1974) and Khan, M. R. (1981) have, therefore, asserted that development in Third World countries should not be viewed in terms of development as happened or prevailing in the more advanced countries, such as Western Europe and the United States; where, conventionally, development has been viewed in terms of change from tradition to modernity; a shift from agricultural to industrial societies; from lowly urbanized societies to highly urbanized societies. According to Bruton (1985, p.1103): "in both the literature and in practice,

development came to mean a replication of the West . . . [In these countries] the underlying theme of development has been to imitate the West as quickly as possible in terms of the form and content of their economic [development] performance." Since the process of development should be indigenous and unique to each society, it has, therefore, been suggested that developing countries must find and pursue a course of development which reflects their own peculiarities, capacities and style (Portes, 1976). As Soedjatmoko (1971, cited in Hunter, 1972, p.122-23) has stated: "each nation will have to develop its own vision of the future, out of the materials of its own history, its own problems, its own natural make-up" (also see Friedmann, 1980; Bruton, 1985). Illich (1969) has gone to the extent of calling on developing nations to abandon the model offered by already more advanced countries.

From the various conceptualization of development, it can be seen that the goals of development can be summed up in terms of fostering and achieving (1) improved quality of life, (2) increased (material) productivity, and (3) desirable values and attitudes. These are pursued with a view to achieve 'independence', progress and stability (which includes national unity and defence). These broad goals of development capture both the tangible (or quantitative) and intangible (or qualitative) aspects of life. These goals are not independent of each other, rather they are inter-related to one another.

These five major perceptions of development are evident in Malaysia's development policy. The pursuit of economic growth

programs in Malaysia's development strategy clearly manifest the incorporation of the growth perception of development. As the Fourth Malaysia Plan (1981, p.3) states: "Rapid growth . . . carries with it the promise of structural change, the creation of a modern economy, and the generation of employment opportunities in productive activities." Programs to achieve modernization, promote urbanization and transform agriculture from subsistence to commercialization reflect the perception of development as change (within the national system). The statement that "further progress with stability in development will require the adoption of values which are progressive and consistent with the needs of a modernizing and industrializing plural society" indicates the inclusion of the perception of development as change in values and attitudes (Mid-Term Review of the Fourth Malaysia Plan, 1984, p.13).

Within the Malaysian context, the social well-being notion of development also exists. Tun Haji Abdul Razak (1973, p.7), the second Prime Minister of Malaysia from 1971-1975 and also popularly hailed as 'Malaysia's Father of Development', has stated:

While economic development is a very basic and significant step in national development, we must not forget that it is only a means towards a higher objective, i.e. of creating a better social order in which our people can enjoy a higher standard of living, peace and happiness.

This view of development has been reiterated by the Minister of Agriculture, Anwar Ibrahim, during a speech to the Farmers' Organization in Trengganu in March, 1986. The Minister made the the remark that 'the [Malaysian] Government is committed to bringing

development to the people and to upgrading their living standards' (The New Straits Times, Malaysia, 1986).

The notion of development as reduction of inequalities is clearly evident from the New Economic Policy's objectives of eradication of poverty and restructuring of society. Various policy statements in the official five-year plan regarding programs of narrowing inter-regional inequalities also indicate this notion of development.

Malaysia's involvement in the drive for the New International Economic Order as well as her adoption of national resilience and self-reliance concepts are clear manifestations of the incorporation of the perception of development as liberation from dependency in Malaysia's development policy. Four major characteristics are apparent regarding development:

- (1) development is normative -- it is concerned with progress towards desired goals;
- (2) development is multi-dimensional -- it is concerned with all aspects of life and the various needs of people and society;
- (3) development is unique for each country -- it is concerned with a particular set of goals formulated at a particular point in time, or, in other words, different nations have different styles of development; and,
- (4) development must be a coherent process -- if a variety of goals are to be sought simultaneously they must first be reconciled with each other.

In this study development is viewed as a multidimensional process involving all the major perceptions of development as mentioned. Growth is a necessary but not a sufficient condition of development by itself. So, too, is social development.

Meaning and Dimensions of Inequality

Like development, inequality is also a concept that is difficult to define. There also exist different perceptions of inequality (Seers, 1973; Atkinson, 1978). Essentially, the different perceptions of inequality revolve around two major viewpoints:

- (1) inequality as a natural phenomenon
- (2) inequality as an artificial phenomenon.

That inequality implies the quality of being different seems to be a common theme of most literatures that deal with the question of inequality. Generally, there is consensus in the literature that inequality due to inherent characteristics, as between man's height and weight or between different environmental features (deserts, plains, mountains, etc) are accepted as natural and inevitable. What generates controversy is inequality that is the outcome of differences in (1) opportunity, (2) treatment, or (3) benefits (Gans, 1972; Atkinson, 1978; Hoe, 1982). Inequality of this type is regarded as artificial and undesirable. Also, inequality that is generated through differences in opportunity, treatment, or benefits raises problems and controversies because of its derogative implications.

Since development undertaken by nations are conscious efforts aimed at accomplishing desirable ends, inequality that prevail within such developmental context implies not only shortfalls in development strategies, but also lack of development opportunities and benefits. Wilson (1966) views inequality as 'the fact of occupying a more or less advantageous position'. To Waldman (1977, p.229) "inequality is . . . the extent of disproportion between each share of things held and the proportion each category or holder constitutes of the total number of categories or holders." In the context of development, inequality therefore connotes the unequal or uneven distribution of development opportunities and benefits.

In the context of development, inequality can be discussed from different perspectives:

- (1) income distribution (Kuznets, 1955; Williamson, 1965; Ahluwalia, 1974; Atkinson, 1975; Ahluwalia, Carter and Chenery, 1979);
- (2) economic growth (Rodan-Rosenstein, 1943; Lewis, 1954 and 1955); or
- (3) socio-economic development, level of living or social well-being (McGranahan, 1970; Drenowski, 1970 and 1974; Knox, 1974; Smith, 1974; UNRISD, 1976).

For each of these aspects there are also various dimensions of spatial configuration of inequality upon which discussion and analysis can pursue -- global, supra-national [grouping of countries such as the Association of South-East Asian Nations (ASEAN)], inter-national, intra-national (i.e. between sub-national areas, such as provinces or

states), inter-regional, inter-urban, intra-urban, inter-rural, intra-rural, inter-city, or intra-city (Slater, 1977; Wood, 1977; Colman and Nixon, 1978; Cole, 1981). Thus, the way in which regional inequality in development is perceived depends also on the spatial framework used to assess it. As Smith (1982, p.9) states: "Each nation, region and city has its own distinctive pattern of inequality."

Whatever the debates that ensue on development -- whether it is growth versus distribution, top-down versus bottom-up strategy of development or centralization versus decentralization -- the fundamental questions that arise essentially hinge on the status of the people. More specifically, what is the status of the people vis-a-vis these issues? As, theoretically, development implies the generation of benefits and greater opportunities for advancement, any discrepancy in the delivery or receipt of benefits and opportunities for (further) advancement connotes and creates a situation where inequality is said to prevail. Such a situation is deemed to be undesirable for the accomplishment of development goals, not only because it imposes artificial constraints upon those who are affected but also because the continued persistence of such a phenomenon provides a ready-made ammunition for provoking potential social tension and conflict (Chatterji, 1976; Smith, 1982). Social disharmony and political instability not only could slow down the pace of development, but also could, if it deteriorates, stifle and even negate the development process. No less important, disparity in development also implies an allocation or distribution of development

resources that ignore the importance of addressing the inequality issue. Hence, the existence, and most of all the persistence, of inequality as well as its attendant implications to create polarization between people and places not only challenges our moral sense, but also raises the question of the fairness and justness of the political and economic order which prevail (see Harvey, in Smith, 1982, p.1). Indeed, "inequality in its various forms is one of the most serious problems facing the contemporary world" (Smith, 1982, p.7).

The terms inequality and inequity have also received attention in the literature relating to development. The use of these terms have often been confusing. There are views that spatial inequality can refer both to a desired and to an undesired difference. For example, difference in the landscape is generally regarded as desirable, while spatial differentiation in living conditions are generally considered as undesirable. In making such distinction, Folmer and Oosterhaven (1979, p.1) have clarified: "Spatial inequality . . . describing an undesired difference, will be defined as spatial inequity." It has also been stated that inequality can be evaluated in terms of the deviation measured from a hypothetical state of perfect equality, applying such statistical techniques as Gini coefficient and Lorenz curve. In contrast, as Hoe (1982, p.68) points out: "'equity' can only be assessed, not by such statistical methods but by appealing to subjective values or ethical judgements."

Apart from its unethical connotations as well as its implications to create polarization between people and places, the undesirability

of inequality in development in Malaysia is compounded by the threat of communist insurgency. The persistence of inequality in development could be exploited by the communist to provoke dissension and stir instability. Since national unity and security are important foundations for stability and progress, reduction of inequality is therefore an important development issue and objective in Malaysia.

In this study, inter-regional inequalities in development is viewed as the uneven distribution of development opportunities and benefits relative to the proportional spatial distribution of the population.

Space and Development

Friedmann and Alonso (1964, p.1) have contended that "regions and space . . . are necessary dimensions of the theory and practice of economic development" (also see Richardson, 1973; Wood, 1977). Society, it has been theorized, is spatially organized -- in the sense that human activities and social interactions are 'space-forming' as well as 'space-contingent'. As Soja and Tobin (1979, p.158) explains: "they are space-forming in that they work to shape and structure human interaction in space [and] they are space-contingent. . . [in that] their space organizing influence is itself shaped by the existing spatial framework" (also see Friedmann and Sullivan, 1972; Coates, Johnston and Knox, 1977, p.3; Mabogunje, 1981, p.51). This point has also been coherently stated by Hilhorst (1968, p.21):

Human beings for the execution of their activities require space. These activities are of differing nature and include at least those of a public administrative, economic, political, recreational and social character. The relationships resulting from these activities will necessarily have spatial dimensions.

Since society is spatially organized, Friedmann (1972, cited by Soja and Tobin, 1979, p.157) has contended that "the development process will also be influenced by the existing pattern of spatial relation and the dynamic tensions that will result from them." Friedmann and Alonso (1964, p.1) have further reinforced the importance of the spatial aspect of development when they state: "not only must decisions be made on how much a scarce resources shall be allocated to a given purpose, but also on where investments [will] take place." In claiming that each activity requires a locational decision, J.P. Lewis (1964), acknowledged the importance of the spatial aspect of development. Space has been viewed as an important and an implicit factor in any study of development (see Wood, 1977).

In terms of development (as distribution of benefits), two theories can be identified as being pertinent to spatial development. These relates to: (1) Hagerstrand's Innovative Diffusion Theory (1967), and (2) Friedmann's Theory of Polarized Growth (1966). Hagerstrand's work describes the spatial stages in the spread of a number of new ideas and techniques. It provides a useful understanding of how development changes can occur in space over time. As a geographical concept, Hagerstrand's diffusion process occur down the hierarchy of cities (Bradford and Kent, 1978). On the other hand, Friedmann's theory of polarized development is relevant as it

demonstrates how and why spatial imbalances in development occur and how eventually the regions of a nation are gradually integrated over time.

Other theories which indicate the importance of the relationship between space and human activities include:

- (1) Christaller's and Losch's Central Place Theory
(Bradford and Kent, 1978)
- (2) Von Thunen's Agricultural Land Use Theory (Hall, 1966)
- (3) Weber's Industrial Location Theory (Smith, 1971)
- (4) Burgess' Concentric Zone Theory (Park, 1925)
- (5) Hoyt's Radial Sector Theory (Mayer and Kohn, 1959)
- (6) Harris-Ullman's Multiple Nuclei Theory (Mayer and Kohn, 1959).

The first three theories consider the organization of economic activities within an hypothetical plain, while the latter three theories deal with the organization of space for relevant land-use activities within an urban setting.

Despite the recognition that there exist close inter-relations between spatial forms and social processes (see Mabogunje, 1981; Smith, 1982), the spatial aspect of development has not received as much attention and consideration in treatment of development (Soja, 1976). This relates to the fact that the adoption of the growth model of development which focus development in sectoral rather than spatial terms. In reference to this point, Higgins (1980, p.v) has remarked that "sectoral planning had been tried in the fifties and sixties, along with the application of growth models, . . . [but] it has not

worked very well." Katchamat (1978, p.144-45) also states:

The major weakness of most of most national economic development planning lies in the fact that the development plan is carried on only in global and sectoral orientations. The . . . allocation of resources is made with little or no consideration of their location.

An understanding of the relationship between space and development is therefore essential for the analysis of the spatial aspect of development, as well as for the formulation of appropriate spatial policies that can effectively influence the development process. Hence, Cubukgil (1981, p.57) has stated: "If spatial policies are to be effective, it is essential that the relationship between space and development be articulated properly." Since "societies occupy territories" and in reality the level of living vary according to where people live, then geographical space and the organization of life in this space have a bearing on who gets what (Coates et al, 1977, p.3; Smith, 1982, p.18). The importance of the spatial aspect of development is further endorsed by Coates et al. 1977, p.5) who remarked: "If we do not expect to discriminate against people on the basis of race, religion, colour, or social class, then neither should we discriminate against people on the basis of location." Manshard (in Hoyle, 1974, in Foreword) has, therefore, asserted that "the spatial dimension is an important, basic framework within which developmental problem must be set" (see Rhoda, 1982, p.4).

The terms space and region deserves amplification, since they can have different connotations depending upon the context in which

they are conceptualized. According to Boudeville (1966), space can mean either geographic, economic or mathematical space. Geographic space is usually identified with geographers. This dimension of space is one which views the relationship and activities of man in the natural environment. Economic space, an entity of the economists, relates to the environment in which economic variables or activities take place. Both geographic space and economic space can be regionalized. However, mathematical space, derived on the basis of logic, is entirely abstract and is geographically non-existent. In reference to the latter, it has therefore been stated that "space is not necessarily a region" (Patnaik, 1982, p.27).

Region is used to mean territorial framework which can be viewed at different scales -- depending upon what the spatial framework is in reference to -- global, supra-national, national, sub-national, rural, or urban (Chatterji and Nijkamp, 1983; Patnaik, 1982; Cole, 1981; Colman and Nixon, 1978; Wood, 1977; Slater, 1977). Such a numerous spatial notion of region has led Perloff (1971), at one point, to express scepticism regarding the practicality of regional planning.

Since space and region can have different connotations, some conceptual clarity is needed. In reference to development, space as used in this study, refers to geographical space. However, "for . . . planning or policy (purposes) . . . the concept of region is more useful than the concept of space" (Patnaik, 1982, p.27). This is because the concept of region tends to be associated not only with relatively more defined territorial framework, but also with territorial contiguity. This has been endorsed by Bandman (1975) who

states that Soviet scientific literature on regional research have used the word territory more often than space to emphasize reference to a specific territory. Except as use in a geographic context, space is abstract (as mathematical space) and have no defined territorial boundary (as economic space).

From the perspective of development policy and planning, the conceptualization of region as territorial framework at the sub-national scale is more realistic and pragmatic; since region at such scale is within the de jure control and purview of the respective government. Also, according to Misra and Prantilla (1983), regional planning at the sub-national level provides the necessary linkage for the attainment of integrated national development. However, region conceptualized as territorial framework at the global or supra-national scale may not be as useful from development policy and planning perspective unless commitment by all the governmental parties concerned is possible to deal with their 'regional' problems. As observed by Perloff (1971) and Patnaik (1982), a consensus is evolving which suggests region as space which is larger than any single urban area or group of villages and that its spatial framework is sub-national (also see Bendavid-Val, 1983).

Planning at the national level is a hallmark of the growth approach to development. As alternative to national planning, disaggregation in space has been advocated as a means of bringing about a more effective distribution of development benefits (see Higgins, 1980). In this regard, two major approaches are evident in

the literature:

- (1) through hierarchy of centers
- (2) through regional planning.

Rondinelli (1979/1980; 1982; 1983; 1985) is most noted for advocating the development of a hierarchy of centers as a means to achieve a more balanced spatial system as well as for bringing about more equitable distribution of development benefits (also see Rondinelli and Evans, 1983; Rondinelli and Ruddle, 1977). Friedmann is noted for regional planning, especially with his agropolitan model proposal (1979). The other approaches to regional planning are in terms of the application of Perroux's economic model of growth poles and growth centers (Darkoh, 1977). Stuckey (1975) has criticised Friedmann's agropolitan model of development in terms of failure to incorporate the influence of external factors in development of regions. Darkoh (1977) has argued that growth poles and growth centers are essentially still growth-oriented approach to development.

In studies on development as well as on regional inequalities in development, many studies have focussed on the largest or fairly extensive administrative units as their analytical base. Slater (1975) has attributed this to data constraints at the smaller administrative units. The application of the growth model of development also accounted for the utilization of macro- rather than micro-unit of observations. In this regard, studies on regional inequality in Malaysia is also no exception. Difficulties in obtaining appropriate data below the state-level have produced more studies on inter-regional inequalities in development being undertaken

at the state-scale of analysis (Cheong, 1979; Aris Othman, 1983) than at the sub-state territorial framework. For that matter, Malaysia's five-year development plan documents also have used the state-scale of analysis to evaluate Malaysia's development performance.

When intra-state differentiation in development are considered very often they tend to deal only with considerations of a region of the country or they used geographical points, such as towns and villages, as their units of analysis. In this regard, most of the analysis on development performance in Peninsular Malaysia have been conducted either using the component states of the peninsula or using the urban centers and local governments units; the former exemplified by studies such as Cheong's (1979), Anand's (1983), Aris Othman's (1983) and Malaysia's five-year development plan documents, while the latter are as undertaken by studies such as Osborn's (1974) and Kow's (1978). Leinbach's study (1972) can be considered as significant departure from the other studies since it utilized units of analysis that are smaller than the state-level. However, the shortcomings of Leinbach's study is its failure to produce units of observations that are in congruence with any existing administrative boundary -- state or district. In fact, Leinbach's hexagonal construct not only do not fit with even the smallest administrative unit boundary (i.e. the district), but also in some instances, they overlapped district and state boundaries.

Since studies on development and inter-regional inequality at smaller scale of analysis would provide more details for understanding

of the nature and problems of development, this study therefore focusses on the district administrative units for examination of the pattern of spatial development and the magnitude of spatial inequality in Peninsular Malaysia. As stated by Chetwynd, Jr. (1983, p.15):

Breaking [up] national development into specific regional contexts, it was found, reduced complexity, helped to identify . . . imbalances and pinpointed specific regional problems and opportunities . . . all ultimately to facilitate achieving development goals.

Examination of spatial development and spatial inequality in development at this scale, especially with extensive coverage, is relatively few. Also, the district constitutes the smallest administrative units in the country.

Approach to Development

In practice, the different perceptions of development, especially within a capitalist or capitalist-oriented politico-economic system, can be viewed in terms of two major themes of development strategy:

- (1) development that emphasizes on the growth approach
- (2) development that emphasizes on growth with equity or distribution.

The growth approach to development has been most pervasively applied both by developed and developing countries. The growth with distribution or equity model of development, on the other hand, is an alternative approach to the growth model, emerging only as a

consequence of disillusionment with the growth performance.

Much has been written about the growth model of development (Lewis, 1955 and 1961; Ford, 1966; Okun and Richardson, 1961). Suffice it is to state here the fundamental features of this model. Basically, the growth approach to development is one which places strong emphasis on increase in production and size of the productive sectors based upon the principles of (1) efficiency, (2) economies of scale, (3) agglomeration economies, (4) comparative advantage and (5) (limited) public intervention to regulate the market. High and rapid growth rates of the Gross National Product (GNP) of the economy is viewed as essential for initiating and stimulating development. This is to be attained mainly in terms of accumulation of capital and its investment in industrialization and urbanization. The focus on economic growth comes with it an aggregate bias about development; that it has to be planned and executed by national governments and through the use of capital-intensive technology. By virtue of its focus on certain productive and efficient sectors, as well as its tendency to concentrate investments in certain locations of comparative advantage, proponents of economic growth have generally asserted that "inequality . . . is an inevitable concomitant and condition of growth." (Hirschman, 1958, p.184). It is generally believed that the expansion of the productive economic sectors will give rise to multiplier and spread effects to the other sectors of the economy. Hence, through the filtering-down process economic growth will result in a broad permeation of benefits throughout the society.

Inequality is considered as an essential part of growth

(Hirschman, 1958). In the interest of efficiency, development under the growth model concentrates investments only in certain localities or regions. However, this model of development presumes that over a period of time, through the trickle-down effects, benefits of development will filter to the peripheral areas or regions. Such process will then reduce inequality.

Most of the developing countries, especially those in the Third World, have adopted the growth approach to development. They were heavily influenced by this model of development for a number of reasons. First, it relates to the fact that most of the development planners and bureaucrats in newly independent Third World countries received their education and professional training in the West and were inspired by their school of thought on development (Patnaik, 1982). Most of the western countries strongly subscribed to the view that economic growth was the answer to the problems of underdevelopment of Third World countries.

Another reason relates to conditions imposed by aid donor countries and international development funding organizations, such as the United Nations and the World Bank, which require that recipient nations apply the growth model to development (Rogers, 1976; Rondinelli, 1985). Experiences of technological and economic advancement by western countries applying the economic growth approach to development have led to the belief among these nations, including international development-funding organizations, that the economic growth model would be the appropriate development strategy to be

applied by the underdeveloped countries of the Third World. Professor W. Arthur Lewis (1955), a major proponent of economic growth, has asserted that economic growth (as measured by GNP) increases the range of human choice. Such view have had a profound influence upon the development process of most of the Third World countries. This point has been endorsed by Bruton (1985, p.1099) as follows:

Development economics originated in the late 1940s in response to a real world question, the existence of extremely rich countries alongside extremely poorer ones. That fact set in motion . . . and resulted a great outpourings of literature and a great array of concepts and models . . . -- dual economy, labor surplus, low level equilibrium trap, balanced growth, vicious circles of poverty, critical minimum effort, big push, dependency, center and periphery -- Virtually every poorer country had become interested in its economic development. Policymakers were directly concerned with the findings of the economists, and economists were much in demand as consultants. Economists were listened to, and [they] did in fact influence [development] policy.

The growth model to development has been advocated for developing countries in view of the limited capital resources which they have. It has been rationalized by proponents of the growth model that with limited resources it would be inefficient and ineffective to attempt to sprinkle development investments thinly over the national territory. Rather, key urban centers or regions will be selected for concentrated investment programs that would benefit from economies of scale and external economies of agglomeration. This model is also advocated because in the long-run, through the trickle-down effects, beneficial spread effects will flow and permeate to the lagging regions.

Despite the force with which the hardline economists have

expressed their views and the extent to which their recommendations have been followed in the Third World, there is scant evidence that a narrow focus on economic growth has resulted in a broad permeation of benefits throughout society. Indeed, the tendency appears to be towards greater rather than less income disparity as growth occurs (Ahluwalia, 1974; Drakakis-Smith, 1980). Streeten, 1981). As Ahluwalia, Carter, and Chenery (1979, p.299) state: "despite the developing countries' impressive growth of the past 25 years, its benefits have only reached the poor to a very limited degree." Logan (1972) and Mehretu (1986) have attributed this to the structural biases that were put in place in most of the Third World countries during colonial times. As Mehretu (1986, p.30) points out: "Socio-spatial polarization in levels of living was accelerated by post-independence models of development as these served to extend the colonial extractive pattern or were too weak to prevent the lagged effect of colonial policies." Failure to dismantle the extractive structure frustrated attempts to increase the rate of growth and development in Africa, for example. Mehretu also stated that spatial biases in production and distribution were among the intractable problems that frustrated broad-based development in Africa.

Some of the major disillusionment with the growth approach to development were:

- (1) that although overall the rates of growth increased, the benefits of growth have not been equitably distributed between social groups and regions (Streeten, 1981; Ranis,

1977b; Lakshamanan, 1982);

- (2) that growth model to development tends to deepen differences between 'growth' points and lagging areas -- thereby giving rise to spatial structures reflecting different patterns and status of development. According to Mabogunje (1981), favored localities and regions are fortified and sustained by ever increasing internal and external economies and gain at the expense of other localities and regions. Myrdal (1957) has rationalised this in his 'circular and cumulative causation' principle;
- (3) that spread effects from growth centers have been minimal than expected (Stohr and Todtling, 1979; Appalraju and Safier, 1976; Waller, 1974; Gilbert, 1975);
- (4) that although some innovations have been observed to flow down from development centers after the manner postulated by adherents of diffusion view, the nature or content of such spread effects may not necessarily be in the interest of the lagging areas. As Smith (1982, p.325) contends: "what diffuses may simply reflect the values and preferences of the metropolitan elite which may have little bearing on the real needs of the people in the countryside."

The contention by the growth proponents that inequality is essential and inevitable for growth was also challenged. Myrdal (1968 and 1971) argued that the opposite was in fact a necessary pre-condition for more rapid development.

Inequality and the trend towards rising inequality stand as a complex of inhibitions and obstacles to development and that, consequently, there is an urgent need for reversing the trend and creating greater equality as a condition for speeding up development (Myrdal, 1971, pp.63-64).

For all its success in raising growth rates of GNP, the dominant post-war strategy of economic growth came under heavy criticism for its failures: continued unemployment, growth in income inequality within and across nations and an increase in poverty. In response, several alternative approaches to achieve more effective development in the Third World countries have emerged. These are termed as growth with equity or distribution. In this regard six major approaches may be mentioned:

- (1) Employment Generation
- (2) Redirecting Investment
- (3) Meeting Basic Needs
- (4) Human Resource Development
- (5) Agriculture First Development
- (6) Integrated Rural Development

All spring from a conviction that traditional reliance on growth of GNP alone will not benefit the poor or would not benefit them quickly enough. These alternative approaches to growth also share a common feature of recognizing the importance of social, political, and cultural factors in development. They agree that one of the crucial limitations of past approaches have been their narrow focus on economic factors.

The need to increase employment is one of the approaches in the growth with equity or distribution model to development. This came about as a result of widespread and growing unemployment in some of the Third World countries despite the growth of the GNP. This perspective calls for focus of attention on the informal sector of the various Third World countries; where a great deal of entrepreneurial talent exists but the main barrier to greater contribution on their part was access to capital on terms competitive with the formal sector. In developing this strategy, the International Labor Organization (ILO) (1970 and 1972) places primary emphasis on increasing the availability of capital in this sector and concentrating expenditures on employment creating activities. Particular attention was also given to the rural area, especially to the use of labor-intensive production techniques in agricultural growth.

The second approach deals with the reorientation of capital formation, away from large-scale centralized projects, to investments which will relate directly to the poor: education, health, credit. Investments in those sectors will lead to increase in productivity of the poor and hence increase their income. Chenery, Ahluwalia, Bell, Duloy, and Jolly (1974) are major proponents of this approach to development. This approach is based on the premise that the poor must have greater capital to generate income necessary to meet their needs. While in the short-run such reorientation of capital formation may affect growth, in the long-run increased productivity and income of

the poor will raise incomes of all members of the society.

Perhaps, the most notable of these alternative approaches to growth is the basic needs approach. This approach was officially launched by the World Employment Conference of the ILO in May, 1975 (ILO, 1977). Mahbub ul Haq (1973) and Streeten and Burki (1977) also favor the basic needs approach to development. Essentially, the basic needs approach include 2 elements. First, it advocates certain minimum requirements of a family for private consumption: adequate food, shelter, clothing, and certain household equipment and furniture. Second, it requires essential services to be provided by and for the community at large, such as safe drinking water, sanitation, transport, health, education and cultural facilities (ILO, 1977; Singh, 1979).

Adelman (1975) is the proponent of the human resources development route to achieving growth with equity. A precondition for success of this approach is redistribution of productive assets -- land and physical capital -- as occurred in Japan, Taiwan and South Korea. Also provision must be made to ensure continued access to assets for the poor once the redistribution has taken place. This is followed by a massive program to develop human resources. The next step is a human resource-intensive industrialization and growth strategy. The high rate of employment to be generated by industrialization will provide income which will lead to a demand for the goods produced and thereby ensure a wide distribution of benefits. This approach requires strong government, for the process of human resources development can be accompanied by slow growth of the GNP,

resulting in social tension and political instability.

The emphasis on agriculture first approach was advocated by Mellor (1976). This approach requires land reform first. In this approach agriculture is envisaged to play two major roles:

- (1) Agriculture must supply the wage goods which are necessary for employment creation. Increases in agricultural production are essential to achieve this.
- (2) Agriculture must supply employment, through technical change in agriculture, primarily biological research: new seeds, new fertiliser practises, and irrigation. Though the resultant increased output would not directly raise employment, the increased spending of farmers will; through the multiplier effects.

The integrated rural development approach, as advocated by Waterston (1974/1975), is based on the premise that top-down approaches to development have not been successful in meeting the social needs of the rural poor. Waterston (1974/1975) contends that strategies that focus on agriculture alone can result in enrichment of the already rich farmers; since only those farmers who could afford the necessary inputs could take advantage of the new high-yielding varieties with their concomitant needs for water, fertilizer, pesticides, and insecticides. He also argues that social service provision by government leads to "welfare mentality" as he saw in Tanzania and Sri Lanka. Thus, this approach advocates agricultural development along with social infrastructure and services. Six

elements are necessary for success of this approach, with the precondition that land first be equitably distributed.

- (1) labor intensive farming by small farmers;
- (2) use of off-season labor surplus in building minor development works and infrastructure;
- (3) labor-using light industry for processing of agricultural products, production of intermediate goods for agricultural production, and production of light consumer goods based on local raw materials;
- (4) self-help or self-reliant;
- (5) implementation by a government organization with power cutting across ordinary ministry jurisdictions;
- (6) "regional planning" with a hierarchy of development centers bridging the gap between villages and the capital city.

There are at least three major features characterizing the various alternatives to the growth approach to development:

- (1) an equity orientation, emphasizing a direct attack on poverty and setting of minimum of consumption thresholds;
- (2) a recognition that more production and better distribution must be generated together to define development; and,
- (3) a preference for self-reliance, 'bottom-up' planning styles.

It is apparent that even some of the alternative approaches to growth may be difficult to implement, especially where they involve land reforms. It is also clear that emphasis on any one of these alternative approaches to growth will not necessarily lead to more

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

effective distribution of development benefits. Since development is a multidimensional process, a combination of these approaches together with the growth strategy is needed to bring about desirable changes.

As mentioned earlier, the conventional approach to development (the growth model) involves the national spatial framework for planning, implementation or evaluation of development. However, the new approaches to development advocate the use of smaller territorial framework for more effective distribution of development benefits. As Higgins (1980, p.vi) aptly states:

All point to planning development in terms of smaller geographical units Smaller political and geographic units [are] . . . more responsive to the aspirations and needs of the people than a central government can be.

Thus, regional planning and decentralized form of urbanization are new spatial frameworks for more equitable distribution of development benefits.

Like other Third World countries, Malaysia, too, had adopted the growth approach to development. In fact, the growth approach to development dominated Malaysia's development strategy until the inception of the New Economic Policy in 1971. Since then Malaysia has embarked upon the growth with equity or distribution approaches to development.

Measurement of Development

Extensive discussions on measurement and measures of development exist in the literature. What is clear is that just as it is difficult to clearly define development, it is also equally as difficult to measure development. "This multiplicity of possible indicators for any given . . . dimensions of development simply compounds the problems arising from the existence of several . . . dimensions [of development]" (Colman and Nixon, 1978, p.6). This has been borne out by the fact that the literature have indicated that development performance can be measured by a number of different indicators. Furthermore, there is also the question of dealing with qualitative or subjective aspects of development. Although it has been and continues to be debated whether qualitative or subjective aspects of development can satisfactorily be measured by indirectly using indicators that are directly measurable, the majority of scholars seem to agree with the conclusion of such writers as Easterlin (1974), Campbell et al. (1976) and Knox (1976) "that subjective indicators serve as a useful and necessary supplement to the 'hard' objective measures" (Dale, 1980, p.504). Knox and MacLaran (1977) have found a positive and statistically significant correlation between objective and subjective measures in their study of level of living for Dundee, Scotland. Thus, they have concluded: "in view of the positive correlation we have found between objectively measured circumstances and both values and perceptions of most life-

4

7

p

de

us

an

per

the

per

Fri

emp

beco

use

rec

that

deve

pers

domains, we . . . conclude that, for the purpose of generally describing or evaluating . . . disparities in well-being, conventional 'hard' data are as good a surrogate as any."

It is apparent from the literature that there is no straightforward, widely accepted way of measuring development (Cole, 1977). The choice of methods for measuring and evaluating development performance depends largely on what is implied by the concept of development. The different perceptions of development calls for the use of different indicators for measuring development.

There are at least two major ways in which development have been and can be measured:

- (1) in terms of growth (sectoral approach)
- (2) in terms of distribution of development benefits
(composite approach)

The most widely used indicators for measuring development performance has been the use of the macro-economic accounts, such as the gross national product (GNP), gross domestic product (GDP), income per capita, etc. (de Souza and Porter, 1974; Hicks and Streeten, 1979; Friedmann, 1980). The use of such measures indicate and reflect the emphasis placed upon the economic-growth model of development. It is becoming increasingly apparent in the more recent literature that the use of economic criteria alone to measure development is now generally recognized to be insufficient and far from satisfactory; on grounds that it does not measure the wider or multi-dimensional aspects of development, and also because it neglects the distributional perspective of development. "GNP alone cannot satisfy various

structural changes and distribution problems which constitute the central and essential issues of development" (Takamori and Yamashita, 1973, p.111; also see Knox, 1974; Hay, Jr., 1979). Another limitation of the use of the GNP, or other macro-economic accounts, is that they fail to take into account economic activities conducted outside the national monetized accounting system. Such activities, known as the informal economy play an important, if not dominant, part in the lives of many people in the Third World countries (Bor, 1982). Another severe limitation of the macro-economic accounts is that they do not portray inequities in their internal distribution of development or the social costs imposed on the community (Hay, Jr., 1979; Friedmann, 1980; Encel et al., 1975; Todaro, 1977; Rhoda, 1982; Carley, 1983; Bruton, 1985). This is because aggregate statistics as average income or total value of goods and services produced may hide the fact that great inequalities still exists (see Smith, 1982).

The use of macro-economic indicators per se to gauge development is, conventionally, related to the conceptualization of development as economic growth. This approach to development has been criticised on grounds that growth is not synonymous with development. This view has been aptly sounded by Baster (1972, p.1): "However important the economic dimension of development, it is dangerous to use it as a proxy of development." While it is generally accepted that economic growth is one of the multi-dimensional aspects of development, it has been argued that economic growth can take place without development (Streeten, 1972). Weissman (1968, p.97) has thus stated: "Human

progress is not an automatic result of economic growth. To obtain it, the nation must . . . allocate a suitable share of the wealth it produces to social development." Indeed, as Weisskopf (1983) has argued, concentration of attention on economic growth performance as well as attempts to explain development merely in terms of a limited set of economic variables tends to reinforce the false notion of an underlying similarity in development experience and development potential across all societies and systems. The idea that economic growth was the answer to the underdevelopment of the developing countries have generally been promoted by western economists based on the economic and technological success of such approach to development in the Western nations.

Since it is generally accepted that development does not merely involves the maximization of economic growth, but also includes other concerns, such as quality of life and equitable distribution of development benefits, other alternative methods for gauging development performance have been and are still being devised in order to arrive at a more meaningful measurement of development. Sussman (1972), a sociologist, has argued that the economic growth model tends to result in preoccupation with materialistic objects and hence divert attention from some of the more important intangible aspects of life. Sussman (1972, p.133) has stated: "Mental well-being has been an increasingly recognized needs of society." In this regard, one of the most common approaches emerging as an acceptable alternative to replace the use of the macro-economic accounts per se is the application of a method that combines several indicators of diverse

dimensions of development, economic and non-economic, to form a composite index which is treated as a proxy measure for development (see United Nations Organization, 1954; Drewnowski, 1974; OECD, 1976; Smith, 1973). The selection of indicators of development depends very much upon how development is perceived.

The indicators of development used must not only be properly quantified, especially if they represent some aspects of development that are intangible or qualitative in nature, but also they must be standardized to enable comparison to be made; since the different variables could have been measured in different units. It should be noted that the various indicators of development do not lend themselves to aggregation in the same way as does the use of the macro-economic accounts; since the direction of the indicators must be considered in combining the different indicators' values (see Knox, 1974). For certain indicators negative instead of positive values would be desirable for development -- for example, those for mortality rates.

The use of the composite index of development requires selection of appropriate measures to reflect the different components and aspects of development. On this question of the measurement of development, there is increasing evidence in the literature calling for the usage of both economic and non-economic indicators (see Ram, 1982; Wheeler, 1980; Hicks and Streeten, 1979; Hicks, 1979). However, lack of reliable, comparable, readily obtained data commonly limit the use or choice of indicators that may be more relevant than others.

1

2

6

a

c

i

P

o

c

i

v

a

d

ec

19

o

19

de

si

Ya

Nonetheless, the use of this method to gauge development performance is generally considered to be improvement over the use of macro-economic accounts alone, since the composite development index also attempts to include, and hence in doing so reflect, the other facets of development that would otherwise be excluded. In any case, no ideal set of indicators can ever be derived or produced for the purpose of measuring development as long as it is recognized that development is a complex process with limitless possibilities in terms of its attributes. This is also related to the fact that development is not a static but rather a dynamic process. Furthermore, the various aspects of development are somehow intricately interrelated to one another.

Measurement of development, as well as inequalities in development, can be undertaken in terms of a social (including economic) or spatial categorization of people and activities (Soja, 1976; Seers, 1972). However, since "the social and spatial structures of inequality are sensitively and dialectically interactive." (Soja, 1976, p.1), it is necessary that the complex dynamics of the development process considers the spatial and non-spatial dimensions simultaneously. Such a view has also been expressed by Takamori and Yamashita (1973, p.111):

Interdisciplinary approaches should be taken for purposes of . . . measurement First, because economic development cannot be treated separately from the interlocking links with cultural, social, ecological, and political factors Secondly, there is increasing criticism against the overemphasis on economic growth.

In reference to spatial inequalities, Gore (1984, p.25) therefore has aptly pointed out that "regional disparity in development . . . may be measured using various indicators."

Performance of development can be analysed using the sectoral approach or the spatial approach (Rhoda, 1982). Sectoral analysis of development is one in which a country's economy is divided into sectoral components, such as agriculture, education, health, etc., and then investigation on the characteristics and interaction within the sectors are undertaken. In contrast, the spatial approach starts by dividing a country into spatial units, such as states, districts, cities; and then examination on the activities, processes and dynamics within and between the selected units of analysis are undertaken.

Sectoral analysis of development, which is aspatial in nature, has been the dominant mode of evaluating development performance. This is due to the fact that development strategies of developed and most TWCs have been based on sectoral planning orientation as a consequence of pursuing the growth-oriented model of development (Prantilla, 1981; Chatterji, 1977). The abstraction of space in such mode of planning tended to give rise to spatial polarization of development through the 'deviation-amplifying' principle (Soja and Tobin, 1979, p.158) and 'circular and cumulative causation' principle (Myrdal, 1957). Such a planning and development orientation, it is contended, creates inequities in the benefits of development among regions within a country (see Katchamat, 1978).

Seers (1972) and Adelman and Morris (1972) have suggested that one way to assess development performance would be to examine the

problem of inequality in development, i.e. to investigate whether inequality has increased or decreased in magnitude. Such an assertion seems logical and appropriate since, after all, the overriding purpose of development is, at least normatively, to bring about desired, positive changes. Since inequality in development implies a relative deprivation of development benefits and opportunities, it cannot, therefore, constitute a desirable change. The existence of inequality in development also reflects irregularities in the development process. Their persistence poses more of a problem than an incentive to development. Also, their persistence will inevitably, exert strain upon resources needed to redress them.

DeKadt (1985, p.552) aptly points out that "information can influence what policies may be considered in the future." This is generally true, since "what we know . . . enters into our models and policies" (Streeten, 1981, p.137). According to the planning-programming-implementation process, information derived from the evaluation of development performance also provide important inputs for further and future planning; which ,in turn, would determine development programs to be formulated and projects to be implemented in future (Robbins, 1976). This is based on the fact that 'knowledge of and knowledge about the development process in a particular environment at a particular time is the product of the development process itself' (Tendler, 1975, cited by Bruton, 1985, p.1109). Therefore, the way in which development performance is measured has important implications and bearing upon future development planning,

formulation of development programs and implementation of development projects. As stated by Bruton (1985, p.1109): "One must also recognize that 'formal knowledge' --[such as] models . . . -- that are misleading may actually impede . . . efforts to bring to bear one's knowledge . . . on an issue."

Inequality in Development: Empirical Evidence

Two major characteristics are evident from the literature dealing with the issue of inequality in development. First, inequality in development is assessed in economic (aspatial) or spatial terms. Between the two, there seem to be more literature on the non-spatial perspective of inequality in development. Second, the Kuznet's divergence-convergence hypothesis (also known as "U" or "Inverted-U" hypothesis) is often referred to in order determine or establish the pattern of the empirical observation.

Within the context of development, two major theoretical views are pertinent to discussions on the phenomena of spatial inequalities in development. These, incidentally, coincide with the two major approaches to development: (1) the growth model, and (2) the growth with equity or distribution model.

Literature on both the economic growth approach and the growth with equity or distribution have indicated, implicitly or explicitly, that they are concerned with resolving the phenomena of (spatial) inequalities in development. However, they differ distinctively in the manner in which reduction in inequalities in development is

to be accomplished. The growth approach to development regards the inequality issue not only as a natural and concomitant process through which the development path will occur but also consider that inequality will, through the trickle-down effect, be reduced in magnitude over time. On the other hand, the various alternatives to the growth approach to development consider inequalities in development as unnecessary and undesirable to development. The growth with equity or distribution model to development, therefore, calls for a direct approach to deal with the inequality problem.

Figure 2.1 illustrates the different hypothetical development paths which these two major approaches to development travel and how, in turn, they affect the question of inequality in development. In reference to Figure 2.1, an ideal development path is one which travels along the 45 degree trajectory. This development path indicates that there is both growth and equality or less inequality. In reality, however, this is difficult, if not impossible, to accomplish.

Under the economic growth approach, it is hypothesized that the path of development will be one which moves from 'A' to 'B' and, through the spread or trickle-down process, the development path is expected to continue along 'C'. However, if that fails, due probably to faulty operations or irregularities of the growth approach, then the development path ends up travelling along 'D'; implying, therefore, that there will be growth but with greater inequality or inequity.

On the other hand, under the growth with distribution or equity approach to development appropriate measures would have to be undertaken to bring about effective and equitable distribution of development benefits. According to this theoretical postulate, the development path will first travel from 'A' to 'E', and, then, as the development process picks up, it is hypothesized that this will occur along 'F'. However, if the system fails, then the development path under the growth with equity or distribution approach will proceed along 'F'; implying that there will be less inequality/inequity but little growth.

According to Streeten (1981) and Bryant and White (1982), different perceptions of development will not only result in the application or adoption of different approach to the implementation of development, but also, in turn, will have different consequences upon the pattern of spatial development as well as spatial inequality in development. The Structure-Conduct-Performance (SCP) model (Shaffer, 1980) supports such contention. In essence, the SCP model postulates that the performance of any firm (or organization) can be rationalized in terms of the organization's 'structure' and 'conduct'. In the context of development, development policies and strategies can be viewed as making-up the 'structure' of development, while actual development programs and projects can be said to constitute the 'conduct' of development.

Regarding the different patterns of spatial development that can emerge as a result of the application or adoption of the different

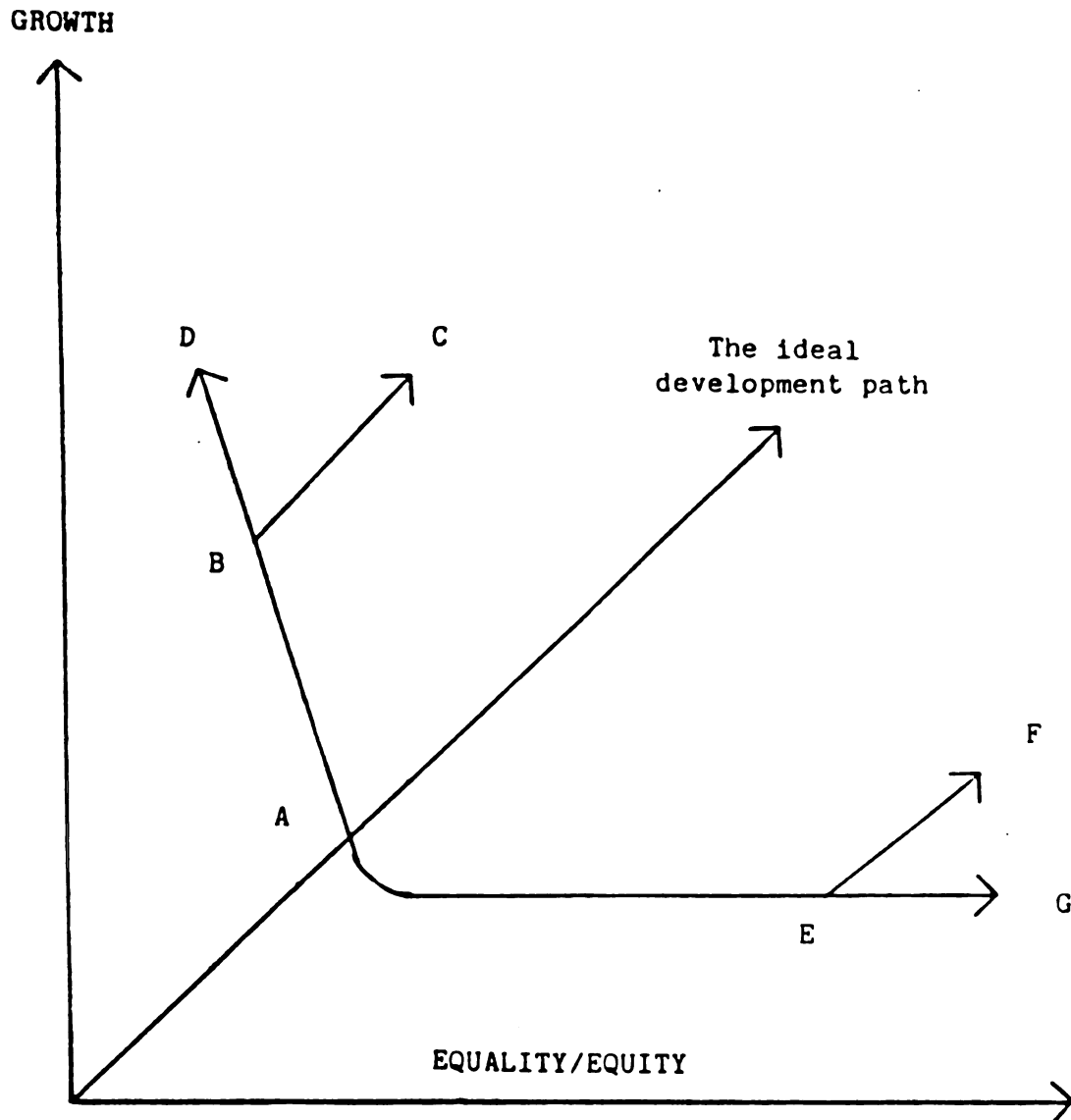


Figure 2.1: A Hypothetical Model of the Development Path.

Source: Paul Chan. (1979). "The Third Malaysia Plan and Social Economics," in C.K. Cheok, K.S. Mun and R. Thillainathan. eds. Malaysia: Some Contemporary Issues in Socio-Economic Development. Kuala Lumpur, Malaysia, University of Malaya Press.

approach to development, Knox (1982) has theorized that three major patterns are likely to emerge, namely (1) convergence, (2) divergence, and (3) status quo. Convergence refers to a spatial pattern which is the outcome of a relative reduction in the level of differentiation between regions over a period of time. Divergence relates to a spatial pattern which is the outcome of a relative increase in the level of differentiation between regions over a period of time. Status quo refers to a spatial pattern of development which exhibits no significant change from the previous spatial configuration.

The contention that inequality in development is an inevitable condition of growth and that as growth proceed inequality will be gradually reduced has been backed by two major empirical studies -- those by Kuznets' (1955 and 1963) and Williamson's (1965). Both these studies, based upon comparisons of macro-economic accounts, found that the development process followed the course of an inverted U direction; whereby inequality would first increase during the early stages of development and then over time lag, through the spread or trickle-down effects, inequality would gradually decline.

A number of studies -- Adelman and Morris (1973), Paukert (1973), Chenery and Syrquin (1975), Ahluwalia (1976) and Fields (1980) -- using different and progressively more reliable sets of cross-country data, have reported confirmation of Kuznet's hypothesis to some degree. For example, Ahluwalia's study has indicated that the poor has gained in income as the GNP rises. Field's study, based on time series data for thirteen countries, have found that economic growth

has been successful in upgrading the economic conditions of a significant number of the population in 10 of the 13 countries he studied -- namely in Bangladesh, Brazil, Costa Rica, Pakistan, Puerto Rico, Singapore, Sri Lanka, Taiwan, Thailand and Mexico. Only three countries, namely Argentina, India and Phillipines, showed that absolute inequality worsens inspite of significant growth in their economy.

While acknowledging that the conventional aggregate measures of economic performance are, for the various groups of less developed countries for the 1950-80 period, generally acceptable, Bruton (1985, p.1100) admits that "the variance around the average is high." There are frequent arguments and assertions, therefore, that 'development' that has, in fact, occurred has brought less satisfaction than anticipated. Hence, there were also studies that produced results that were contrary to Kuznets' or Williamson's studies. Studies by the International Labor Organization (1969, 1979a, 1979b) and Griffin and Khan (1978) have found that growth has been accompanied by an absolute as well as relative decline in the average income of the poor. For example, the study by Griffin and Khan (1978) have indicated that in several Asian countries -- such as Malaysia, Bangladesh and Sri Lanka and Phillipines -- the problem of poverty and inequalities have remained unchanged despite their growth in production. "While some developing nations showed impressive aggregate rates of economic growth in the 1960s and 1970s many did not; and almost all experienced mounting problems of inequality." (Weisskopf, 1983, p.896). With specific reference to countries in

Southeast Asia, particularly those in the Association of Southeast Asian Nations (ASEAN) -- then comprising Malaysia, Indonesia, Thailand, Philippines and Singapore -- Mahangas (1982, p.270) has observed that "the ASEAN region has experienced tremendous economic growth but with little improvement in distributive equity." That the application of the economic growth approach to development has not proven to close the inequality gap in most Third World countries, as well the realization that the phenomena of inequalities in development continue to persist in even the most developed countries of the west, including the United States, have therefore begged a host of questions among development theorists and practitioners regarding the usefulness and practicality of the economic growth model as an appropriate development strategy for Third World countries to emulate.

The economic growth emphasis to development also creates problems of spatial inequality in development. In pursuance of efficiency in production, this approach to development focussed on concentration of investments in certain strategic locations of comparative advantage. Two major arguments have typically been invoked to justify policies of concentrating economic growth within a few selected places or 'growth centers'. The first is that concentration engenders certain economies of agglomeration. The second argument is that spatial concentration is an efficient means of indirectly promoting higher levels of development over a much wider area. According to Berry (1969, p.288): "Growth impulses and economic development . . . trickle-down to smaller places and ultimately infuse dynamism into even the most

tradition bound peripheries."

Both empirical evidence and theoretical explanations have pointed to the tendencies of development toward concentration or spatial polarization, during the early stages, in a few core areas within the developing national systems (see El-Shakhs, 1972 and 1977; Alonso, 1968; Friedmann, 1973). As El-Shakhs (1977, p.127) pointed out: "Such tendencies become stronger the more they reinforce the favorable position and comparative advantage of these cores." Although some degree of spatial inequality in development is inevitable, its persistence is viewed as undesirable for the development process. There is general consensus that the problem of inequalities in development cannot be indirectly tackled through the dynamics of the growth or market forces. Rather, inequalities in development must be directly addressed through public intervention as well as adoption and implementation of appropriate policies. As Bruton (1985, p.1100) aptly asserts:

We must find ways to design a development process that includes these [economic] variables as part of the [development] process itself . . . [Also] we must seek a development process that includes, as an inherent part, acceptable rates of growth . . . along with an acceptable distribution of [development] output.

There is also growing contention that balance rather than inequality is more desirable for development. Friedmann (1966) contends that inter-regional balance are essential conditions for national development. Amongst some of the major reasons which Friedmann has given for the undesirability of spatial inequalities are:

- (1) the powerful region 'reduces the rest of the space economy to the role of a tributary area' (p.99);
- (2) the periphery is 'drained of its resources, manpower and capital (due to migration)' (p.99);
- (3) that once the dualistic center-periphery structure is established, 'the unrestrained forces of a dynamic market economy appears to be working against a convergence of the center and periphery (p.18); and,
- (4) a lasting center-periphery relation leads to extreme inequities . . . and tends to restrict development (p.99).

Since the experiences of most Third World countries have shown that inequality tends to increase rather than decrease over time, Hicks and Streeten (1979, p.568) have therefore remarked: "Inequality and poverty were found not to be a necessary condition of growth and indeed were often an obstacle to it."

There are also growing views in the literature that blind adoption of western-oriented concept of development should be rejected. The general argument forwarded has been that what works for the western developed countries may not now be suitable for the Third World countries' needs. Seers' (1981) echoes such view. He has asserted that developing countries, as late-comers in the field of development, essentially face problems which are of different nature from the early starters. Seers also disagreed with the total adoption of the concept of stages of development that is implicit in the economic growth concept of development. Seers (1978) argued that the

linear view of development ruled out options for different styles of development as well as the fact that development problems and needs are unique to each society and nation.

Studies on inequality in development in Malaysia are relatively of recent origin (see Mahangas, 1982). This can, perhaps, be attributed to the fact that concern for inequality in development was first implicitly recognized as an important development policy issue with the incorporation of poverty eradication policy and programs in the First Malaysia Plan, 1966-1970 (see Abu Asmara, 1982). It was only with the enunciation of the New Economic Policy in 1971, as incorporated in the Second Malaysia Plan, 1971-1975, that concern for inequality in development became more explicit.

Studies on inequalities in development were often from the perspective of development that emphasized performance in terms of economic growth (Cheong, 1979; Onn and Wan Abdul Halim, 1979; Anand, 1983; Aris Othman, 1984). Studies that attempt to assess inequality based upon the multi-dimensional character of development is relatively few. The prevalence of studies on inequality in development in terms of economic growth were, in fact, self-explanatory of the prominent part which the economic growth model play in the national development strategy of Malaysia before the enunciation of the NEP (see Muniappan, 1982; Aris Othman, 1984).

Most studies that have examined Malaysia's development performance have found that although Malaysia has experienced increased economic growth there have been little improvement in distributive equity (Lim, 1983; Chan, 1979; Cheong, 1979; Mahangas,

1982; Aris Othman, 1984).

This study is undertaken not only to examine the pattern of spatial development between 1970 and 1980 but also to establish whether regional inequalities have been reduced or accentuated over time. Since this study uses composite indicators to measure development, the findings can also be used to compare with economic growth figures to indicate whether development has benefitted or not from growth.

CHAPTER THREE

METHODOLOGY

This chapter elucidates the methodological approaches and procedures employed to undertake this study on patterns of spatial development and magnitude of regional inequalities in Peninsular Malaysia from 1970 to 1980. The first part of this chapter is devoted to explanations of the focus of the study, the time period involved, the variables selected, the unit of analysis used and the theoretical justification of the variables chosen for this study. The second part covers the procedures employed for deriving weights of the variables as well as presents the research techniques used to determine the pattern of spatial development and the extent of regional inequalities in Peninsular Malaysia.

Focus of the Study

This study is concerned with the question of the spatial distribution of development within a developing country. Specifically, this study examines the problem of spatial inequalities in development as they were found in Peninsular Malaysia between 1970 and 1980. Both synchronic and diachronic analyses are used to investigate the phenomenon. The choice of Peninsular Malaysia, instead of the whole country, Malaysia, is based on consideration of

the availability of relevant and comparable data. Region, as used in this study, refers to two different types of administrative units: (1) administrative district, a constituent unit of the state, and, (2) state, a component unit of the country. Between the two, the administrative district constitutes the main focus of this study.

Time Period of the Study

Ideally, a comparative investigation and assessment of spatial development and regional inequalities in Peninsular Malaysia should commence and have its base year from a time period immediately following the country's attainment of political independence, i.e. in 1957 for Peninsular Malaysia (then known as the Federation of Malaya). However, for the purpose of this study, this is not possible since the 1957 Census, as well as the earlier censuses, did not contain sufficient details of data at the district level. Also, it is not possible to undertake an up-to-date examination of the spatial variations in regional development in Peninsular Malaysia because of the lack of up-to-date data. Due to these constraints, this study could only examine the problem of spatial development and regional inequalities in Peninsular Malaysia for the years 1970 and 1980.

The selection of 1970 and 1980 as the base years for analysis is primarily dictated by the availability of data. Even though most of the data at the district level have not been documented and published, either in the 1970 or 1980 Censuses, relatively adequate comparable

data at this regional scale could be obtained for 1970 and 1980 from unpublished records at the Department of Statistics, Malaysia. Apart from that, 1970 and 1980 also constitute important temporal points for evaluating the spatial aspects of development in Peninsular Malaysia since they marked two different eras of development. 1970 was the terminal point of Malaysia's development strategy that heavily emphasized on rapid national economic growth, while 1980, as reflected by the adoption of and commitment to the New Economic Policy (NEP), witnessed a decade of relatively more conscious efforts on the part of the Malaysian Government, to address and redress regional disparities in development, as well as to promote and foster a more equitable distribution of the benefits of development.

The use of two time dimensions, 1970 and 1980, differentiates this study from some of the earlier studies dealing with the inequality issue in development in Peninsular Malaysia. The earlier researches were either based on only one time period (examples, Abdullah, 1979; Anand, 1983) or had their year of analysis ending in or before 1970 (examples, Leinbach, 1972; Cheong, 1979). "Since the pattern [of development] is always changing, comparisons which ignore time may be of a limited value" (De Souza and Porter, 1974, p.26) (emphasis added).

Data for the Study

Being a complex concept and multi-dimensional in character makes development a difficult phenomenon to define and measure. However, if it were accepted that development broadly connotes a complex societal transformation involving relatively improved and sustained social, economic and physical well-being, then it would, at least, be possible to visualize and operationalize the phenomenon of development on the basis of those dimensions and attributes that are perceived to be salient constituents of development. From such a conceptual framework, development is also recognized to have multi-dimensional attributes. Since "development . . . is multidimensional, involving changes in structure, capacity, as well as output" (Baster, 1972, p.1), then, as Horn (1984, p.178) aptly states: "Development . . . therefore requires indicators from many fields of human activity." (Also see Forde, 1968; Takamori and Yamashita, 1973; Knox, 1974; Gore, 1984; Smith, 1982).

In view of the abstract and subjective nature of development, the variables used to measure it are, therefore, at best, merely indicators or surrogates for development. The choice of indicators of development for this study were based on considerations of (1) their theoretical pertinence to development, (2) their use or application in other empirical studies on development, (3) availability of comparable data at both the district and state level, and (4) availability of data for both 1970 and 1980.

While it is true that, theoretically, there can be as many dimensions and criteria of development as there are ways to perceive development, in practice only a limited number of the many dimensions of development can be operationalized for the purpose of measuring development performance. As Colman and Nixon (1978, p.6) states: "This multiplicity of possible indicators for any given . . . dimension of development simply compounds the problems arising from the existence of several . . . dimensions." The absence or lack of documented data, published or unpublished, for certain dimensions of development, the absence or lack of documented data at the district scale of observation, and also the difficulty of obtaining comparable data 1970 and 1980 limit the scope of the development dimensions that can be operationalized and used in this study. As Scott (1979, p.453) aptly states: "the kinds of data collected . . . depend to some extent on the available sources." In view of such constraints, aspects of development such as politics, nutrition, environment, attitudes, etc. have not formed part of the variables used in this study. Smith (1973) and Oyebanji (1982), for example, clearly recognized that paucity of data makes it impossible for any single study, even in the advanced countries, to include every necessary variable.

Both input and output type of indicators of development are used in this study. This is because both are important to development. Most output indicators are also inputs. As stated by Hicks and Streeten, 1979, p.572): "For purposes of assessing policies and monitoring performance [of development], both sets of [input and output] indicators are necessary." In cases where data for certain

indicators of development are not readily available or are difficult to acquire, estimates have been computed to fill such data gaps (see Appendix 1 for relevant notation).

Thirty variables, referred to as indicators of development are used in the analysis. Data for the selected variables were derived from several sources; the main ones being from the 1970 and 1980 Population and Housing Censuses of Malaysia and related documents, unpublished records at the Department of Statistics, Malaysia and Malaysia's Five-Year Plan documents. Also, part of the data relating to weights for the variables were derived from a survey conducted among a selected panel of Malaysian professionals and scholars who were studying or working in the United States during the time the survey was undertaken.

Theoretical Justification For Variables Selected

Variables chosen for this study are based upon their theoretical relevance to the development process, especially as they are pertinent to Malaysia, as well as their general application by other empirical studies on development. However, lack of suitable and comparable measures of development, especially at the district level, inevitably limits the scope of variables that can be selected and used in this study.

As a normative concept, development has been perceived and conceived in many different ways, varying in emphasis and substance from nation to nation and from time to time. Fiscal constraints are

also considered a major determinant in the articulation and shaping of matters of priority in development, especially in times of global economic recession. Recognizing that the conceptualization and prioritization of development is unique to the circumstances and needs prevailing in a given country, it is, therefore, only logical to assume that for any country, at any given point in time, the set of criteria that are important for gauging the performance of development will not necessarily be similar. It should also be noted that even though certain set of criteria for measuring development performance have consistently been utilized by most countries, that does not, however, necessarily mean that the process of development is uniform for all countries. Rather, it means that those criteria that have been repeatedly utilized are considered by many countries as being fundamental to the development process.

Bearing in mind that development is a multi-dimensional process involving numerous dimensions or aspects (Baster, 1972; Seers, 1972; Todaro, 1977a; Colman and Nixon, 1978; Horn, 1984) performance of regional development in Peninsular Malaysia will, therefore, be gauged by a set of variables that reflect or manifest some of these salient aspects of development. Based on data availability and also their relevance to the development process for Malaysia, the following indicators have been used to develop criteria of progress:

- (1) Education
- (2) Health

- (3) Housing
- (4) Amenities
- (5) Public Security
- (6) Communications
- (7) Manpower
- (8) Economic Development
- (9) Rural Development
- (10) Urban Development
- (11) Women's Participation
- (12) Eradication of Poverty
- (13) Restructuring of Society

Table 3.1 shows the list of development criteria and associated indicators as used in this study for the analysis of the pattern and of spatial development and regional inequalities in Peninsular Malaysia between 1970 and 1980. It should be pointed out that these set of criteria by no means encompass all the possible aspects of development for Malaysia. As already stated, availability of suitable indicators constrained the generation of other relevant facets of development, such as environmental, nutritional, and attitudinal aspects. Nonetheless, the set of development criteria that have been developed for this study constitute some of the principal significant concerns that have consistently been embodied and included in Malaysia's development plan documents, i.e. the Five-Year Development Plan.

Education, formal or informal, is indeed, as has always been, one of the major conventional instruments in the process of human resource

development. The educational system is not only designed to develop human resources for economic reasons, but also, as equally important, to impart and shape desired values, ideas, attitudes and aspirations which are conducive for the development process and nation-building. The former is not only in terms of increasing the opportunity of individuals in the labor market to earn higher incomes (Chiswick, 1968; Bowles, 1972; Boudon, 1974; Buchanan, 1975; Simmons, 1979; Taylor and Williams, 1982), but also in terms of improving the capabilities or skills of the labor force and hence enhance their productivity and output (Schultz, 1967; Bogle, 1977; Streeten, 1979). According to Chandrasekhar and Hultman (1967, p.xiii), "the poor quality of the labor force stemming from lack of education . . . retard worker mobility, and limit [their] economic opportunities." Harbinson (1967, p.189) has expressed the view that "development of human resources -- i.e., the building and effective utilisation of the skills of people -- is an essential element of any modern development strategy." On the other hand, the inculcation of desirable national values and social norms, which transcends religious, cultural, and regional barriers, are also critical for fostering and forging national integration and unity -- a vital element in national development and nation-building of a plural society such as Malaysia. "Without educational advancement," according to Jumper, Bell and Ralston (1980, p.27), "the receptivity of a population to change and

Table 3.1
Development Criteria and Indicators Used In Analysis of
Pattern Of Spatial Development and Regional Inequalities in
Peninsular Malaysia, 1970 and 1980.

<u>Criteria</u>	<u>Indicators</u>	<u>Direction*</u>
Education	1) Population with schooling	+
	2) Population literacy	+
	3) Teacher-population ratio	+
Health	4) Infant mortality rate	-
	5) Maternal mortality rate	-
Housing	6) Housing stock	+
	7) Availability of flush toilets	+
Amenities	8) Piped-water supply	+
	9) Public-supply electricity	+
Public Security	10) Access to public law and order personnel	+
	11) Access to fire service	+
Communications	12) Road availability	+
	13) Access to postal service	+
Manpower	14) Availability of professional and technical manpower	+
	15) Availability of administrative and managerial level personnel	+
	16) Availability of public servants	+
Economic	17) Availability of manufacturing activities	+
	18) Availability of commercial sector	+
	19) Gross domestic product	+
Rural Development	20) Access to telephone in rural areas	+
	21) Access to agricultural extension services	+
Urban Development	22) Urban population	+
	23) Urban places	+
Women's Participation	24) Female literacy	+
	25) Women's participation in secondary and tertiary sectors	+
Poverty Eradication	26) Population above poverty line	+
	27) Access of poor to housing	+
	28) Malays in agricultural vocations	-
Restructuring of Society	29) Malay participation in manufacturing sector	+
	30) Malay participation in commercial sector	+

Note:* + means high positive scores are 'good' and low scores 'bad'
- means high negative scores are 'good' and low scores 'bad'

its capacity to innovate are likely to stagnate at the lowest possible levels." The significance of education for the development process has also been clearly stressed by the United Nations (1951, p.13), which states that "the greatest progress will occur in those countries where education is widespread." This is due to the fact that "the spread of education makes both men and women more receptive to new ideas" (Drakakis-Smith, 1980, p.8). Thus, education is an important instrument of development (see Taylor and Williams, 1982; Ahluwalia, 1976). Brimer and Pauli (1971, p.127) have even ventured to state that education "is the most profitable of all social investment." Schumacher (1973) acknowledged that the gift of knowledge is infinitely preferable to the gift of material things.

The indicators used to reflect this aspect of development are (1) literacy of the population, (2) population with formal schooling, and (3) teacher-population ratio. The literacy indicator is a direct measure of the literacy status of the area, which in turn is fundamental in the efforts to impart desired values, attitudes, ideas and aspirations conducive to the development process and overall nation-building. Also, "literacy measures the effectiveness of the educational system" (Hicks and Streeten, 1979, p.572; also see Rao, 1984; Cole, 1981; Wheeler, 1980). According to Schumann, Inkeles and Smith (1967, p.11), "literacy specifically . . . open a man's mind to new ideas [and] they can change those of his attitudes." Increase in literacy also reflects "a distributional improvement because the proportion of beneficiaries has risen" (Hicks and Streeten, 1979,

p.571). Thus, "literacy is itself a valuable skill in the development process" (Dixon, 1984, p.768). A high percentage of population literacy is desirable. The schooling experience indicator not only reflects the general educational level of the region in question (see McGranahan, 1972, p.91), but also indicates the potential socio-economic status of the people in the region; since higher educational level improves the opportunity and access of the people to relatively better-paid economic positions, which in turn has important influence upon their socio-economic status and well-being. Hence, of the thirty Articles of the United Nations' Universal Declaration of Human Rights, adopted in 1948 by the General Assembly of the United Nations, Article 26 declares: "Everyone has the right to education," (cited in United Nations Social Development Division, 1969, p.404). A high percentage of population with formal schooling is desirable. Teacher-population ratio indicates the availability of the teaching resources, which in turn may have bearing upon the general educational performance. High teacher-population ratio is desirable.

Good health is a vital prerequisite and an essential aspect of the quality of life that have significant bearing for high levels of productivity (Hicks and Streeten, 1979; Streeten, 1979). Improvement of health conditions and the availability of the requisite health and medical facilities and services, constitute an important part of socio-economic development (Rao, 1984; Taylor and Williams, 1982). The state of health is an important criterion for the prolongation of life as well as for stimulating active and productive activities of the society.

The indicators used to reflect the health criteria of development are (1) infant mortality rate, and (2) maternal mortality rate. Infant mortality rate is a sensitive indicator of the availability, utilization and effectiveness of the health services (Armstrong, 1966; McGranahan, 1972). "Deaths to infants during the last 11 months of their first year of life reflect . . . the impact of economic and social conditions" (Hauser, 1959, p.101). Maternal mortality rate indicates the risk to mothers during pregnancy and child-birth. It is influenced by the general socio-economic conditions, including health and nutrition, as well as maternal health care. In sum, mortality rates capture differences in health care, the incidence of diseases and reflects the nutritional status of the community. Also, according to Hicks and Streeten (1979, pp.571-72), "measures such as infant mortality . . . indicate the degree to which basic needs have been fulfilled." Hence, health indicators represent presumed causes or instruments of good health (see McGranahan, 1972, p.93). Low mortality rates are more conducive to development.

It should be noted that the health indicators used only reflect conditions of health and not availability or use of health services; mainly because lack of data for these other aspects of health at the district level. Nonetheless, the indicators on conditions of health indirectly also reflect the availability and effectiveness of the health services. The nutritional aspect of health is also not included due to the unavailability of data, especially at the district level. However, the nutritional aspect of development is indirectly

covered by the mortality rate measures.

Shelter, in the form of housing, has universally and always been recognized and cited as one of the fundamental basic needs for mankind (Taylor and Williams, 1982). The type and quality of housing in which people are sheltered and the facilities available in the environment in which it is located have important bearing upon the general quality of life and well-being of the inhabitants (Rhoda, 1982). Access to housing as well as improvement in availability of housing constitutes a pertinent component of social and economic development (Rao, 1984; Higgins, 1980). The indicators used to manifest this aspect of development are (1) ratio of occupied housing units to population, and (2) percentage occupied housing units having flush and pour-flush toilet system.

The indicator of housing-population ratio reflects the adequacy or inadequacy of housing stock within a region in question. Housing shortages reflected by this indicator imply housing needs. Although this indicator does not indicate the quality of housing, the second indicator relating to the availability of flush and pour-flush toilet system indirectly reflects that aspect of housing. As Webber (1978, p.98) states: "decent, sanitary . . . housing is itself one of the salient attributes of good life." Generally, availability of flush and pour-flush toilet system are more commonly found in the relatively younger and more modern living quarters. The presence of flush and pour-flush toilets in the rural areas, in a way, also reflect the socio-economic status of the inhabitants, since only those who could

afford will have such sanitation system installed. Furthermore, the United Nations recognized that sanitation is important in controlling the spread of diseases such as diarrhoeas, typhoid, fevers, etc. A high housing-population ratio and high percentage of occupied housing units with flush and pour-flush toilet system would be positive for the development process.

Water and electricity are not only basic needs for the people, they are also essential infrastructural requirements for development (Meerman, 1979). Almost every economic activity requires the use of electricity and/or water to generate production. The importance of such infrastructure has been clearly stated by Busterud (Jumper et al., 1980, p.90): "infrastructure . . . influences the concentration of growth which might otherwise have occurred elsewhere in the region." Also, water and electricity are vital to social advancement and hence improvement in human capital investment (Chandrasekhar and Hultman, 1967; Taylor and Williams, 1982). As Meerman (1979, p.613) states: "As a household consumption good, it [electricity] provides numerous opportunities for activities that would otherwise be difficult or impossible. As a means of production available for many possible uses, it expands the opportunity horizon of the household or firm." Much of the interest in water stems from its importance to public health. In many developing countries, waterborne and water-related diseases are among the major causes of death. The World Health Organization considers the provision of a safe and convenient water supply to be 'the single most important activity that could be undertaken to improve the health of people living in rural areas' (World Bank, 1976, p.5).

The indicators used to reflect the infrastructural aspect of development are (1) occupied housing units that have piped-water supply, and (2) occupied housing units that have public-supply electricity. Both indicators also reflect the extent of public investment for social and economic advancement. A high percentage for both indicators would be desirable for development.

Public order and security are important matters of social concern (Rao, 1984; Taylor and Williams, 1982). Public safety is considered a necessary prerequisite for the survival and development of societies. In fact, safety needs is considered by Maslow (1970) as one the five levels of needs for human development. Potential economic investors are also concerned over security of the environment. The indicators used to denote public order and security are (1) ratio of public security enforcement personnel to population, and (2) ratio of fire service personnel to population. A high ratio for both indicators would be desirable for development.

Communications and telecommunications, in terms of connectivity and interaction, although not a direct measure of the level of living, forms part of the necessary infrastructure for national development. This is not only in terms of the extent to which communications facilitate the flow of people, goods, services and information between places (Cole, 1981, p.48), but also of the interaction between people in different places. Coates, Johnston and Knox (1977) view communications not only in terms of reduction in 'distance friction', but also in terms of 'cost reduction'. It was implied by Losch (1954)

that residents in location where transportation network is relatively poor would, theoretically, have lower net income since they must pay a higher proportion of their income in transport, goods and services (Morril and Wohlenberg, 1971). This has been endorsed by Coates et al. (1977, pp.3-4) who state: "The cost of movement are an element in real incomes: the less travel involved in moving you to what you want and/or in moving what you want to you, the more of your income you can spend on goods and services other than travel". Communications also constitutes an important media for 'transfer of information and ideas', which Zimmerman (1951, p.10) regards as "the mother of all other resources." According to Pryor (1973, p.53), "the flow of information, in its broadest sense, is directly related to the degree of elaboration and linkages of the . . . communications systems." Communications also facilitates diffusion of information and innovation through interaction. As Pedersen (1978, p.310) states: "the speed of diffusion increases when the the interaction grows." The availability and provision of an efficient linkage or communication system, therefore, is an important integral part of the development process. The existence, as well as improvement or expansion of the communication networks could, potentially, serve to facilitate and accelerate the development process. The indicators used in this study to reflect the communications aspect of development are (1) road density, and (2) ratio of postal service worker to population.

The indicator road density reflects not only the potential flows of people, goods, services and information but also the extent of

accessibility of the population to other areas. Road density also bears significance for the exploitation and marketing of resources.

"Road transport infrastructure is one of the crucial factors of development; its spatial pattern is closely related to that of development as a whole" (Smith, J.A., 1974, p.308). Mabogunje (1981, p.293) is also of the view that "transport is an infrastructural element with profound implications for overall development." The indicator of ratio of postal service worker to population indicates the degree of potential social and economic interaction.

Communication, therefore, have important bearing upon improving the flow of goods, services and information as well as in facilitating the accessibility and interaction of the population to other areas and also to prevailing goods and services in and outside the area concerned. As Colman and Nixon (1978, p.155) said: "Differential access to modern sector facilities (education, health, housing, employment) is both a cause and consequence of economic and social inequalities." High road density and high ratio of postal service personnel to population are deemed desirable for the development process.

Adequate manpower with critical skills is important to development. "The rate of modernization of a country is associated with both its stock and rate of accumulation of human capital . . . [for] the process of change . . . requires large 'doses' of strategic human capital" (Harbinson, 1967, p.192; also see Chenery et al., 1974). The indicators used to reflect the availability of strategic

manpower with critical skills for development are (1) labor force in professional and technical group occupations, (2) labor force in administrative and managerial group occupations, and (3) ratio of government officials to population.

The indicator of labor force in professional and technical group occupations reflects the availability of manpower with requisite technical skills for promoting development. Labor force in administrative and managerial group occupations reflects the availability of manpower with management and organizational skills. Such skills are also important for development planning and implementation. The indicator of ratio of government officials to population manifests the implementation capabilities existing in the area in question. "Most government officials in developing countries . . . are seen by the citizens as instruments of regulation and control as providers of information and sometimes of capital [and] also . . . are perceived as 'listeners and facilitators'" (Butterfield, 1977, p.10). A high percentage or ratio for all these indicators are considered desirable for the development process. As Robertson (1971, p.32) aptly opined, a region which is less prosperous than other parts of the country, will among other signs, display "an occupational structure which is short of the professional and other higher occupations."

Economic structure, as reflected by prevailing economic activities, indicates the general economic status as well as potential for further economic growth and development (Baer and Herve, 1966; Blandy, 1972; Bairoch, 1973; Rhoda, 1982). The indicators used to

reflect the economic structure are (1) labor force in the manufacturing sector, (2) labor force in the commercial sector, and (3) gross domestic product.

The indicator of labor force in the manufacturing sector is a proxy measure for the degree of industrialization. A high percentage of the labor force engaged in this sector is considered desirable for economic growth and the socio-economic benefits that it generates. As Kasper (1973, p.23) noted: "Industrialization has increasingly been the major driving force in Malaysia's economic growth and job creation since Independence." The indicator of labor force in the commercial sector reflects the degree of commercial activities which exist. Commercial activities indicate the availability of market and service centers for transaction of economic goods and services. Such activities are essential not only for stimulating the local economy, but also in providing for the necessities of the local population. A high percentage for this indicator is considered desirable for the development process. The indicator of gross domestic product is generally a function of economic growth and development. Although gross domestic product may not directly measure social well-being -- because it does not address directly the distributional aspect of growth -- its merit lies in its simplicity and effectiveness as a general measure of an area's economic level in terms of productivity. A high value for gross domestic product per capita is considered to be positive for development.

Urbanization, despite the problems which it creates, also have its positive aspects in terms of development. To Malaysia, "urbanization . . . is [viewed as] an important process towards modernization" (Mid-Term Review, Fourth Malaysia Plan, 1984, p.29). Urbanization may be viewed as the process by which the population has become urbanised (either through living in urban areas or being exposed to urbanism) and/or the increase in both the number and size of urban centers (McGee, 1971; Tisdale, 1942). In terms of urbanised population, urbanization implies the extent to which the population has access to modern amenities, facilities and services. This is because urbanization is the process through which modernization is being transmitted and manifested (Eisenstadt, 1973). In terms of growth of urban centers, urbanization reflects the availability of a wide array of social, economic, educational, health and public services needed by both the urban and rural population (Rondinelli, 1983). They also constitute important sources for employment opportunities, educational advancement, medical facilities, cultural facilities, social services, modern technology and commercial and business services. Urban centers are therefore important instruments of the development process (Friedmann, 1969 and 1973; Pryor, 1973; Mabogunje, 1981; Rondinelli, 1983). In fact, the literature has provided increasing evidence in support of a correlation between the spatial distribution of urban growth and the process of development" (El-Shakhs, 1972 and 1976; Berry, 1971; Soja and Tobin, 1979). Urban centers also serve as markets for food crops from the rural areas (Mabogunje, 1981) and function as centers for agricultural supply and

agribusiness (Dannhaeuser, 1981; Wanmali, 1983). Urban centers are also nodes of transportation and communication as well as social interaction. Within such context, urban centers are, therefore, also important centers of diffusion of ideas and information. Urban centers, therefore, not only offer a wide variety of economic opportunities and social services but through their availability offer potential socio-economic advancement for the individual and hence the community (see Berry, 1969). As Chatterji (1976, p.13) pointed out: "The activities in . . . urban centers not only affects the system within . . . but it also affects . . . elsewhere." Thus Friedmann (1980, p.46) has emphasized that "the existing functional system of cities must be considered because . . . this system . . . will help articulate rural development spatially."

The indicators used to reflect urbanization level are (1) urban population, and (2) large urban centers. A high percentage of urban population is considered desirable for the development process. Also, existence of large urban centers are deemed to be useful for promoting the development process.

"Rural development is . . . a process by which the rural population of a nation improves its level of living on a continuing basis" (Butterfield, 1977, p.8). It is undoubtedly an important component of the development process since the rural areas, especially in developing countries, since the majority of the population who, on the average, falls within the category of those classified as being in the lower income group. Thus, Friedmann (1980, p.46) has remarked

that "rural development . . . is development for the benefit of the . . . people who live in rural areas." Also, rural development constitutes the major source for agricultural and food production. "Rural development offers solution to the multiple problems of food shortages, . . . unemployment, income maldistribution and rising rural discontent The result of inattention are instability, insurgency and political upheaval" (Butterfield, 1977, p.8).

The indicators used to reflect rural development are (1) ratio of rural telephone booths to rural population, and (2) ratio of agricultural extension station acreage to labor force in agricultural sector. The former indicates the degree of potential social and economic interaction of the rural population with its external environment as well as the potential exposure to creative and innovative information which can be vital to overall development and nation-building. The latter indicator reflects the extent to which efforts are being made to promote the agricultural sector. In alluding to this matter, Schultz (1964, p.204) has noted that improving (traditional) agriculture constitutes an important investment in farm people. As recognized by Kasper (1973, p.22): "A country with abundant land resources and with a big share of its population in rural activities cannot disregard agricultural development . . . , even if the dynamism of development springs from the non-agricultural sector." Agricultural stations are being used as proxy for agricultural extension services; since data on the distribution of agricultural extension personnel are difficult to obtain, especially for 1970. A high ratio for both indicators on

rural development are considered desirable for the development process.

Women's participation in development is not only a manifestation of women's emancipation but also of social justice and equality of opportunity. Female literacy is also viewed as an important indicator of modernization; since in societies at low levels of modernization mass education for females begins later than that for males (Abdul Hamid, 1979). Alluding to this, Overholt et al. (1986) contend that consideration of women's role in development should be an integral part in any assessment of development. The indicators used to reflect women's participation in development are (1) female literacy, and (2) female labor force in non-agricultural economic activities.

Female literacy not only indicates the extent to which the female population benefitted from the educational development process, but also it reflects the extent to which development efforts have been effective in providing opportunities and benefits to all segments of the population. As Dixon (1984, p.768) states: "Literacy [of female] . . . may reveal the extent to which social benefits are available to women" (also see Morris, 1979). A high percentage for this indicator is desirable for development.

Women's participation in the non-agricultural economic activities is an important aspect of the development process. Traditionally, the majority of women labor force in the developing countries have been found to be prominently engaged in the agricultural sector. Women's entry into the secondary and tertiary

sectors of the economy also reveal the extent to which social benefits have been made available to women. According to Rao (1984), the percentage of women in non-agricultural employment may be an appropriate indicator of women's participation in economic activity. A high percentage for this indicator is considered positive towards the development process.

Since it is generally contended that the primary purpose of development should be to improve and enhance the social and economic well-being of the community (Nyerere, 1967; Leupolt, 1977), eradication of poverty, therefore, constitutes an important aspect of development (Todaro, 1977; Higgins, 1980). Seers (1972) has therefore contended that evaluation of whether poverty has been reduced (or not) ought to be one of the central focus and concerns of development. The incorporation of this aspect of development is also related to the Malaysian Government's pronouncement on this matter. Eradication of poverty constitutes one of the twin-prong objectives of the New Economic Policy -- the umbrella policy upon which all development programs and projects are to be based. It has stated by the Deputy Prime Minister of Malaysia, on December 17th, 1986, that between the two-prong objectives of the New Economic Policy, the objective of eradication of poverty constitutes the top priority (The New Straits Times, December 18, 1986). The indicators used to reflect this facet of development are (1) labor force above the poverty line, (2) ratio of public low-cost housing to labor force below poverty line, and (3) Malay labor force in agricultural vocations.

"A direct indicator of the extent of poverty is the proportion of population below the poverty line" (Rao, 1984, p.213; also see Rhoda, 1982). The indicator labor force above the poverty line is an inverse reflection of the extent of poverty. Poverty line has been used as the determination of poverty since income is generally considered as an important measure of the power and capacity to purchase goods and services (Cole, 1981). According to Todaro (1977b), the welfare level of a person depends primarily on the amount of income he receives. Although the Fourth Malaysia Plan, 1981-1985 does not define poverty, Quazi (1982) has found that official circles in Malaysia generally regard a household income of Malaysian Ringgit (or dollar) of \$300/= per month as low income. Quazi also found that the Kuala Lumpur Master Plan Team, for instance, had designated households earning below Malaysian Ringgit \$300/= per month as being 'poor'. The ratio of public low-cost housing to labor force below the poverty line indicates the extent to which the poor have access to housing. A high ratio is considered positive for development. Public low-cost housing here is limited only to the conventional ones constructed by the public sector as part of its programs to provide housing to those with low-income. Those of the non-conventional types -- such as found in slums and squatter settlements -- as well as those of the conventional private ones are not included mainly because of the difficulty of obtaining data on them for the two time periods in question (see Drakakis-Smith, 1980 for further details on conventional and non-conventional types of low-cost housing). Malay labor force in

agriculture indicates the extent to which the Malay population are in the lower income group. This is because, on the average, remunerations for those engaged in the agricultural sector are relatively lower than those in the other economic sectors (Cole, 1981; Anand, 1983). A low percentage for this indicator is desirable for development (Rao, 1984).

The Malaysian Government has also embodied the objective of restructuring of society as one of the twin-prong objectives of the New Economic Policy. For a plural society like Malaysia, this objective also constitutes an important component of the development process; whereupon national stability, a necessary precondition for development, is to a large extent also dependent upon national unity. It is implicit in the restructuring of society objective that the persistence of socio-economic gap between the various ethnic component of the population in Malaysia would not be conducive for fostering national unity and also national stability. "Whatever their proximate causes, the racial riots of May 1969 owed their origin to inadequate efforts to redress socio-economic imbalances which have characterized Malaysian society for so long A society marked by significant . . . imbalances was no longer acceptable. A concerted effort to accelerate the removal of these imbalances become imperative" (Third Malaysia Plan, 1976-80, p.6).

The indicators used to reflect restructuring of society are (1) Malay participation in the manufacturing sector, and (2) Malay participation in the commercial sector. Malay participation in both these sectors are considered important because not only most of the

Malay labor force have hitherto been found in the agricultural sector, but also because there were relatively few Malays in these modern sectors of the economy. Greater participation of Malays in these sectors also imply greater urbanization or modernization of the Malays. A high percentage for both these indicators is considered positive for development.

Unit of Observation

This study uses the administrative districts in Peninsular Malaysia as the main unit of analysis; the other unit of analysis being the state. The latter is also used for purposes of making comparisons with the districts in terms of the magnitude of spatial inequalities. Administrative districts have been chosen as the main unit of analysis because few studies have used this political unit for assessing development performance; although the district occupy longstanding pivotal positions vis-a-vis development planning and implementation. Most of the studies on the issue of spatial distribution of development in Malaysia, particularly for Peninsular Malaysia, have used the states as the unit of analysis (examples: Othman, 1984; Anand, 1983; Cheong, 1979). Also, the official monitoring and evaluation of regional development performance in Malaysia, as manifested by the contents and coverage of the Five-Year Development Plan documents, mainly continues to be based on the performance of the constituent states. While it is not disputed that such studies do provide useful comprehension regarding inter-state

inequalities in development in Malaysia, they do not, however, shed adequate light on the nature and magnitude of intra-state regional disparities in development. Furthermore, the state scale of analysis is too broad and many local variations are masked by averaging the measures of development. Hence, Smith (1982, p.107) states: "For more details we must look at smaller territorial units." Higgins (1980, p.vi) also concur that "smaller geographic units [are] somehow more responsive to the aspirations and needs of the people." Friedmann (1980) considers the district as an appropriate level for development; since the district is large enough to meet most of the basic needs of the population and, at the same time, it is small enough so that the entire population of the area might have reasonable physical access to the center for political decision-making, planning and administration. Furthermore, there has been relatively few known analyses of development performance, of a comprehensive nature, undertaken at the district level.

Since efforts to redress inter-state inequalities in development requires appropriate actions within each state, understanding of intra-state regional disparities in development is, therefore, essential in the task to address the problem of regional inequalities in development. An analysis of the nature and extent of intra-state regional disparities in development would not only facilitate identification of relatively less-developed areas within the state concerned, but also through the information that it generates would enable appropriate redressal measures to be articulated. The

usefulness of understanding the status of development at the district scale of observation and analysis has been alluded to by the United Nations Organization (1971) in the early 1970; it calls for development of appropriate indicators at district level to reflect the distribution of development benefits. According to Friedmann (1980, p.54), "the choice of district as the basic unit of organizing . . . development may be readily justified."

Since the number of districts and states differ between 1970 and 1980, some adjustments have been made to ensure comparability over space and time. Figures 3.1 to 3.4 show the states and administrative districts in Peninsular Malaysia for 1970 and 1980, respectively. For the purpose of comparing the status of regional and inter-regional inequalities in development between states and districts in 1970 and 1980, respectively, only eleven (11) states will be considered, namely Johore, Kedah, Kelantan, Malacca, Negri Sembilan, Pahang, Penang, Perak, Perlis, Selangor (including Wilayah Persekutuan) and Terengganu (see Appendix 3). Wilayah Persekutuan, in reference to The Federal Territory of Kuala Lumpur, has been incorporated as part of the state of Selangor because it was created from part of the latter. As for the districts, with the exception of those in the states of Perak and Selangor, all the newly created districts that emerged after 1970 have been treated as part of the original district from which they were created. Hence, Pendang (in Kedah) was incorporated with Kota Setar, Jempol (in Negri Sembilan) with Kuala Pilah, Rompin (in Pahang) with Pekan, and Kuala Krai (in Kelantan) with Ulu Kelantan. Such arrangement was possible because these new districts have been created

from part of their original districts. However, the new districts that emerged in the states of Perak and Selangor, cannot be adjusted in a similar fashion because they involved major shifts in the boundaries of all or most of their districts. Also most of the new districts in these states were formed from combined parts of more than one district. For Perak state, although only one (1) new district emerged after 1970, i.e. the district of Perak Tengah, three districts are responsible for its creation, namely the districts of Manjung (known as Dindings in 1970), Kuala Kangsar and Perak Hilir. In view of this, these four districts will be combined as one in 1980 for the purpose of enabling comparison of inter-regional inequalities in development to be made with 1970. With regard to the state of Selangor, major adjustments had to be made as all the districts in the state have undergone dramatic territorial changes following the formation of the Federal Territory of Kuala Lumpur in 1971. To facilitate comparison of inter-regional inequalities in development, the following districts in Selangor have been merged as one district:

- (1) Kuala Selangor and Sabak Bernam
- (2) Kuala Langat, Sepang and Ulu Langat
- (3) Gombak, Kelang, Kuala Lumpur+, Ulu Selangor
and the Federal Territory of Kuala Lumpur.

For the purpose of showing the level of development the actual status of states and districts as they prevailed in 1970 and 1980, respectively, will be used. (See Appendix 2 on 'States in Peninsular Malaysia in 1970 and 1980', Appendix 3 on 'States in Peninsular

**PENINSULAR MALAYSIA:
STATES, 1970**



Figure 3.1: States in Peninsular Malaysia, 1970.

**PENINSULAR MALAYSIA:
STATES, 1980**



Figure 3.2: States, including the Federal Territory of Kuala Lumpur, in Peninsular Malaysia, 1980.

Figure 3.3: Administrative Districts in Peninsular Malaysia, 1970.



Figure 3.4: Administrative Districts in Peninsular Malaysia, 1980.

Malaysia, 1970 and 1980 -- For Comparative Use', Appendix 4 on 'Districts in Peninsular Malaysia in 1970 and 1980', and Appendix 5 on 'Districts in Peninsular Malaysia, 1970 and 1980 -- For Comparative Use').

Weighting of Variables

Bearing in mind that the process of development "is not a uniform linear progression of a set of variables but rather a changing complex of factors which move at different rates in relation to each other . . . at different levels of development and in different types of country" (UNRISD, 1972, p.4), the variables chosen for this study have been assigned 'weights' to indicate the different degree of influence or contribution which each of these variables exerts in the process of development (Colman and Nixon, 1978). As aptly remarked by Islam and Khan (1985, p.150), "weights should be attached to . . . indicators [of development] rather than treating all of them equivalently." Undoubtedly, this process of deriving weights will not be an easy and uncontroversial task. Generally, scholars and practitioners share the view that the process of assigning weights to variables is very much a subjective or judgemental process, and as such it is unlikely that consensus can easily be achieved. In any case, every decision-making act inevitably involves a subjective or judgemental procedure (Davidoff and Reiner, 1978).

For the purpose of this study, weights for the variables have been derived through a 'Value Judgement Survey' from a panel of

Malaysian professionals and scholars working or studying in the United States (see Appendix 6 on survey documents used). On the basis of a paired-comparison technique, every respondent was asked to indicate how each of the (selected) variable compares to every other variable used in this study in terms of their relative importance to the process of development. This was done by distributing a total of ten (10) points to each pair of indicators being compared. This means that for every cell in the 30 x 30 matrix (see Appendix 6) there would be two values given by the respondent that sums to ten. A value distribution of ten for a particular variable and the automatic 0 (zero) for the other variable in the pair being compared means that the former variable is regarded by the respondent as being absolutely more desirable to development than the other variable; 0 (zero) means absolutely unimportant to development. On the other hand, a value distribution of 5 and 5 for each of the variables in the pair being compared indicates that the respondent considered these two variables to be equally important or desirable to development. The different combination of values assigned to each pair of variables being compared reflects the relative degree of importance of the variables to development.

The relative weight for each variable was derived using the following procedures:

- (1) values given to every variable by each respondent were summed and then expressed as a percentage point of the total points for all the variables;

- (2) the percentage point for every variable [as derived from (1) above] for all the respondents were then summed;
- (3) the total points for each variable by all respondents [as derived from (2) above] were then computed as a percent of the total points for all the variables by all respondents.

The values obtained in step number (3) above would be used as weights for the variables.

Research Techniques

In order to examine and assess the pattern of spatial development as well as the magnitude of regional inequalities in Peninsular Malaysia it is necessary to use procedures which can reflect and measure the pattern of spatial development as well as indicate the extent or magnitude of regional inequalities in development. While it is true that development is a multidimensional phenomena that is not always possible to quantify, some process of quantification is needed in order to be able to determine the pattern of spatial development and the magnitude of regional inequalities in development.

All the 30 variables were used in examining and assessing the pattern of spatial development as well as the magnitude of spatial inequalities in development in Peninsular Malaysia between 1970 and 1980. Two types of analytical approaches are employed:

- (1) examination of spatial development and inter-regional inequalities in development in 1970 and 1980, respectively;

- (2) comparisons of spatial development and inter-regional inequalities in development between 1970 and 1980.

The first approach, called synchronic analysis, involves "comparisons at a given point of time . . . of the situation in different regions of the same country." (Horn, 1984, p.179). The second approach, called diachronic analysis, is based on "comparisons of change over time" (Horn, 1984, p.179).

To enable both the synchronic and diachronic analyses of regional development and inter-regional inequalities in development in Peninsular Malaysia to be undertaken, some form of value must be produced as a yardstick for making the assessment and comparison. For this purpose, the study will generate a composite value or index of development.

Using the 30 variables as indicators of development, four major steps were taken to produce the composite value of development. Firstly, all the data, for all variables and regions, were controlled for their population. Secondly, since the selected variables are in different types of measures the data are transformed into standardized scores in order to obtain a distribution more amenable to analysis and comparability. In this regard, Johnson (1978, p.12) indicates that: "The value of Z-scores . . . allow comparison between observations of unlike things in terms of their relative position in the set of observations" (also see Bracken, 1981). Standardized-scores, for each variable are calculated with the following formula:

$$Z_i = \frac{X_i - \bar{X}_i}{SD_i}$$

where:

Z_i = standardized score variable i

X_i = observed score of the i th variable

\bar{X}_i = mean of variable X_i

SD_i = standard deviation of variable X_i

The above formula produces results such that when $X_i = \bar{X}_i$ then $Z_i = 0$ and when $X_i = \bar{X}_i + SD_i$ then $Z_i = 1.0$, irrespective of the variables' units of measurement. The Z-scores produced indicate how far any observation is from its mean. A Z-score of 0 (zero) can be interpreted as being equivalent to average condition of development performance, a negative Z-score would indicate below average condition of development performance, and a positive Z-score connotes above average condition of development performance (Smith, 1982, p.71).

The third step towards producing the composite value or index of development involves the derivation of (relative) weights for all the variables used in the study. As mentioned earlier, this was done through a 'Value Judgement Survey'. On the basis of the values given to the variables by all the respondents, computations are made to obtain weights of the selected variables used for this study. The weights obtained for each variable are then would multiplied to their corresponding Z-scores.

The fourth and final major step in generating the composite index of development is the aggregation of the performances of all the indicators of development. This approach is well-established in spatial analysis and is called the Standard-Score Additive Model (Smith, 1977; Oyebanji, 1982; Knox, 1982). The unweighted and weighted index of development for each district or state is obtained using the following formulas:

(a) Unweighted composite index of development:

$$DI_j = \sum_{i=1}^n Z_{ij} \quad j = 1 \dots m$$

(b) Weighted composite index of development:

$$DW_j = \sum_{i=1}^n W_i Z_{ij} \quad j = 1 \dots m$$

where,

DI_j = unweighted composite development index for region j

DW_j = weighted composite development index for region j

Z_{ij} = the standardized score for region j of variable X_i

W_i = the weight of the i th variable

The index of development can be interpreted as follows:

0 : average development performance

< 0 : below average development performance

> 0 : above average development performance

The index of development indicates not only the level of development for each region, but also reveals the degree of variations in the level of development between regions. Synchronic analyses of the indices of development are used to: (1) assess the level of development for every region in Peninsular Malaysia for 1970 and 1980, (2) examine and evaluate how the regions compare to one another in terms of level of development for each point in time, (3) establish the differences of development between urban and rural regions, (4) identify the categories of urban regions with relatively higher level of development, (5) establish differences between western and eastern districts, and (6) determine how different geographical units affect variations in level of development.

Diachronic analysis of the indices of development establishes the change of inter-regional inequalities over time. This is determined by examining the spatial pattern of development between 1970 and 1980 using indices of development. Also the gap between most developed and lagging regions is examined for both 1970 and 1980. The change in the pattern of spatial development is expressed by the change in the number and type of districts having above average development performance. The analysis tries to answer questions such as whether more rural districts have registered development performance that is above average, whether more districts from the eastern coastal states of Peninsular Malaysia have shown above average development performance, and whether districts that did not fare well in development performance in 1970 have remained in the same position

vis-a-vis other districts. Examination of the gap between regions with high index of development and the rest of the regions, for 1970 and 1980, reveals the differences between these regions. A t-test of significance is undertaken to establish the significance of the changes over time.

Synchronic examination of the level of development tests the hypotheses that spatial disparities in development exist at both the state and district scale of analysis. Diachronic analysis, on the other hand, tests the degree of change over time.

It should be pointed out that the Standard Score Additive Model used in this study is not the only technique that could be used to derive the standard-scores and the composite index of development. Other more sophisticated techniques exist, such as Principal Component Analysis and Factor Analysis. These techniques are particularly useful when the number of variables used are relatively large because they help to collapse variables into a few components or factors and also deal with the problem of multi-collinearity among variables. However, the application of Principal Component Analysis or Factor Analysis techniques would pose problems when applied to (simultaneous) comparisons over time. This is due to the fact that the variables to be compared, for instance over two time periods, would not necessarily collapse into the same components or factors, therefore making the comparison impossible. On the other hand, the Standard-Score Additive Model allows simultaneous comparison to be made for two time periods. Its major shortcoming, however, is that it does not address the problem of multi-collinearity among the variables used. The Standard-

Score Additive Model is also useful to express questions of development or disbenefits through the use of positive or negative signs. For instance, if the nature of the variable indicates positive direction for development, its Z-score is preceded by a positive sign. If the variable indicates negative direction, its Z-score is preceded by a negative sign.

Examining how the variables are distributed spatially also provides a useful understanding of the nature of regional disparities in development. Such information is useful for developing policies to redress regional inequalities. The Gini coefficient technique is employed in this study to indicate how a particular indicator of development is distributed spatially. As Smith (1982, p.28) states: "Gini coefficient is the most common general measure of inequality in distribution." The Gini coefficient is defined as the ratio of the area between the Lorenz Curve and the line of equality to the area of the triangle below this line. It varies between 0 and 1. Zero means perfect equality and 1 means perfect inequality. The greater the departure of the Lorenz curve from the diagonal the larger the value of the Gini coefficient (Anand, 1983; Alker, 1970).

The Lorenz curve provides a useful graphical illustration of the distribution of a particular variable over space and time. It is used here to exemplify the distribution of selected indicators of development.

Comparisons of Gini coefficients for the various regions indicate whether particular development variable has narrowed or widened over

time. In this study, the Gini coefficients are used to compare the distribution of variables for the following cases:

- (a) all states, 1970 and 1980
- (b) all districts, 1970 and 1980
- (c) all urban districts, 1970 and 1980
- (d) all rural districts, 1970 and 1980
- (e) all western districts, 1970 and 1980
- (f) all eastern districts, 1970 and 1980.

Further, ratios of Gini coefficients are calculated to compare differences over regions and time.

Gini coefficients are derived by the following steps:

- (1) Variables to be used in Gini coefficients are selected.
In this study, all 30 variables are used;
- (2) Reference variables are selected to be used in the computation of Location Quotients (see Appendix 11 for details);
- (3) Location Quotients are calculated for all regions using the following formula:

$$LQ_j = \frac{\frac{V_j}{\sum V_j}}{\frac{B_j}{\sum B_j}}$$

where:

LQ_j = Location quotient for region j

V_j = Value of a development variable in region j

$\sum V_j$ = Sum of the development variable for all regions

B_j = Reference variable value for region j

$\sum B_j$ = Sum of the reference variable for all regions

- (4) Regions are ranked in ascending order according to their Location Quotient values;
- (5) Gini Coefficients are obtained using the following formula:

$$G_x = \sum_{j=1}^{m-1} (Y_j X_{j+1} - Y_{j+1} X_j)$$

where:

G_x = Gini coefficient for variable X

X_j = the cumulative share of variable X corresponding to region j

Y_j = the cumulative share of the reference variable corresponding to region j

One type of Gini coefficient ratio is calculated to determine whether the gap of spatial inequality has been narrowed, widened, or remained the same. The following pairwise comparisons are performed:

- (1) states and districts
- (2) urban districts and rural districts
- (3) western districts and eastern districts.

When the Gini coefficient ratio is close to unity the two sets of regions are almost similar in the nature of their spatial inequality. To the extent that this ratio is different from 1.0 regional differences exist.

A second type of Gini coefficient ratio is calculated to show changes of inequality over time. This is done by dividing the Gini coefficients of 1980 over 1970. This type of Gini coefficient ratio indicates no change in time when the ratio is equal to 1.0. A ratio of more than 1 is regarded as a measure of divergence, while a ratio of less than 1 is treated as an indication of convergence.

Analyses of Gini coefficients and Gini coefficient ratios will attempt to test the following hypotheses:

- (1) That spatial inequalities in development exist at both state and district scales of analysis;
- (2) That regional inequalities in development are relatively more acute at the district rather than the state scale level;
- (3) That regional inequalities in development are relatively more acute for rural than for urban districts;
- (4) That regional inequalities in development are relatively more acute for districts in the east coast states than those in the west coast states;

CHAPTER FOUR

PATTERN OF SPATIAL DEVELOPMENT AND MAGNITUDE OF REGIONAL INEQUALITIES IN PENINSULAR MALAYSIA, 1970-1980

Introduction

This chapter presents the analysis of data performed to identify patterns of spatial development and to determine the magnitude of regional inequalities in development in Peninsular Malaysia for 1970 and 1980. Both synchronic and diachronic analyses are undertaken. Results of the analyses are presented at both the district and the state scales, with the former constituting the main focus of this study. The first part of this chapter is devoted to the examination and discussion of the pattern of spatial development in Peninsular Malaysia, while the second part is concerned with the extent of regional inequalities. Appropriate answers to the research questions posed in this study are made in both parts, but specifically this chapter attempts to address appropriate responses to the hypotheses advanced for this study (see Chapter One).

The extent of inter-regional inequalities in development in Peninsular Malaysia will be analysed in two fundamental ways:

- (1) By examining the level of development of the various districts and states, and,
- (2) By examining how the various development variables are distributed spatially.

Pattern of Spatial Development

The purpose of examining the pattern of spatial development in Peninsular Malaysia between 1970 and 1980 is to find out how development is spatially distributed among the various administrative districts. This is to reveal the performance of development, spatially, and to facilitate identification of regions, within states, which are relatively more developed or not. Findings from such examination can offer useful guidance in addressing solutions to problems of inequality. As Coates, Johnston, and Knox (1977, p.2) have aptly stated: "Solution [to any problem] requires understanding." The practicality of investigating the pattern of spatial development has also been endorsed by Peet (1977), who has remarked that understanding of the pattern of spatial development constitutes a useful initial step in the search for processes that have generated the pattern and problem. In a similar vein, Rhoda (1982), in alluding to the regional development problem, has also aptly pointed out that understanding the pattern of spatial development forms an important step towards the formulation of appropriate regional development policies and strategies.

Index of Development

An index of development is developed for every district and state, and is used to examine (1) the extent of spatial development for every district and state in Peninsular Malaysia in 1970 and 1980, respectively, (2) their relative position or ranking vis-a-vis one

another in the hierarchy of spatial development, in 1970 and 1980, (3) the relative development gap between between districts or states, and (4) whether the change of districts is toward higher development levels.

While it is generally agreed that development embodies a number of aspects, problems of conceptualization and operationalization limit the type and scope of variables that can actually be utilized. In this study, 30 variables, referred to as indicators of development, are used to determine the level of development for every district and state in Peninsular Malaysia for 1970 and 1980. Table 3.1 and Appendix 1 describe the selection, the sources and the definition of the indicators of development.

As mentioned in Chapter Three, since different variables are measured in different units standardized z-scores are computed for every development indicator. All z-scores were assembled in matrix format as follows:

- (1) a 64 x 30 matrix for the comparable districts in 1970 and 1980
- (2) a 70 x 30 matrix for the districts in 1970
- (3) a 78 x 30 matrix for the districts in 1980.

The last two matrices were for the districts as they actually prevailed in 1970 and 1980, respectively. These matrices were used to construct regional development indices as per the Standard-Score Additive Model. Specifically, the model applied has the following structure:

$$\begin{aligned}
 DI_j = & \text{Poplit} + \text{School} + \text{Teacher} - \text{Infamort} - \text{Matmort} + \text{Hsgstock} \\
 & + \text{Toilet} + \text{Water} + \text{Electrcy} + \text{Pubsec} + \text{Firesv} + \text{Roadden} + \\
 & \text{Postalsv} + \text{Proftech} + \text{Adminmag} + \text{Govtoff} + \text{Manuftg} + \\
 & \text{Commerce} + \text{GDP} + \text{Ruraltel} + \text{Extsnsv} + \text{Urbanpop} + \text{Urbanpl} + \\
 & \text{Femalit} + \text{Femecona} + \text{Abovepov} + \text{Plowchsg} - \text{Mlyagric} + \\
 & \text{Mlymftg} + \text{Mlycommc}
 \end{aligned}$$

where:

DI_j = Composite development index for region j

Poplit = Percent population 10 years and above who are literate

School = Percent population 5 years and above with formal schooling

Teacher = Teachers per 1,000 population 5 years and above

Infamort = Infant (under 1 year old) deaths per 1,000 live births (by occurrence)

Matmort = Maternal deaths (due to puerperal causes) per 1,000 live births (by occurrence)

Hsgstock = Occupied housing units per 1,000 population

Toilet = Percent occupied housing units having flush and pour-flush toilets

Water = Percent occupied housing units having piped-water supply

Electrcy = Percent occupied housing units having public-supply electricity

Pubsec = Public security personnel per 10,000 population

Firesv = Fire service personnel per 10,000 population

Roadden = Paved road mileage (in miles) per 10 square miles

Postalsv = Postal service personnel per 10,000 population

- Proftech = Percent labor force 10 years and older in professional and technical group occupations
- Adminmag = Percent labor force 10 years and older in administrative and managerial group occupations
- Govtoff = Government officials (includes only those in legislative, administrative occupations and those in executive positions) per 10,000 population
- Manuftg = Percent labor force 10 years and older in manufacturing sector
- Commerce = Percent labor force 10 years and older in commercial sector
- GDP = Gross domestic product per capita (estimated)
- Ruraltel = Public rural telephone booths per 10,000 rural population
- Extensv = Agricultural extension station acreage (in acres) per 1,000 labor force in agriculture
- Urbanpop = Percent population in places 10,000 and above
- Urbanpl = Population in places 20,000 and above as percent of total urban population
- Femalit = Percent female population 10 years and older who are literate
- Femecona = Percent women labor force 10 years and older in non-agricultural economic activities
- Abovepov = Percent labor force 10 years and older with mean monthly income (Malaysian) \$300/= and above (estimated)
- Plowchsg = Public low-cost housing units per 1,000 population below poverty-line, i.e. having mean monthly income (Malaysian) \$300/= and less (estimated)
- Mlyagric = Percent total Malay labor force 10 years and older in agricultural vocations
- Mlymftg = Malay labor force 10 years and older in manufacturing sector as percent of total labor force in manufacturing
- Mlycommc = Malay labor force 10 years and older in commercial sector as percent of total labor force in commerce

The above model provides the unweighted composite development index for each region. The weighted composite development index is obtained by multiplying the value of each of the variables by its corresponding weight derived from the panel survey.

It should be noted that the z-scores are aggregated using the appropriate signs depending on whether or not the variables indicate positive or negative contributions to development. For instance, in the case of infant mortality, since larger rates of mortality indicate less development, their signs were reversed before aggregation. In this way the desired or undesired direction of the development process for all variables were properly accounted for.

As explained in Chapter Three, the administrative districts in Peninsular Malaysia constitute the main unit of analysis in this study. The utilization of districts as the unit of analysis seem more practical since it deals with the smallest spatial framework within which development projects are planned and implemented in Malaysia. Figure 4.1 illustrates the planning process from the national to the district level.

The index of development has been produced for both the comparative districts (and states) as well as the non-comparative districts (and states). Comparative districts refer to those districts (or states) for which comparison of development performance between 1970 and 1980 were possible. Appendices 3 and 5 list the name of districts and states that have been collapsed so that comparisons are possible. There were a total of 64 comparable districts and 11 comparable states

for both 1970 and 1980. Consolidation was needed because boundary and areal changes occurred since 1970. As indicated earlier, in 1970 there were 70 districts while in 1980 their numbers increased to 78 (see Appendices 2 and 4). More important still, the area of some of the districts also changed; therefore, it would not be possible to make fair comparisons between such districts. It is precisely because of this difficulty that merger of certain districts was necessary.

The index of development was also produced for all districts and states in Peninsular Malaysia for 1970 and 1980. However, direct comparisons of these indices of development is not possible; not only because of differences in the number of districts or states, but also because the indices of development for these two periods were computed from different data bases.

Unweighted and weighted indices of development were generated for this study. The analysis of unweighted indices of development is the central focus of this research. Weighted indices are used to test whether or not final results change when different degrees of importance are attached to the development variables.

The geographical distribution of development is shown by mapping the various indices of development for the districts in Peninsular Malaysia, for 1970 and 1980. This is done by partitioning the

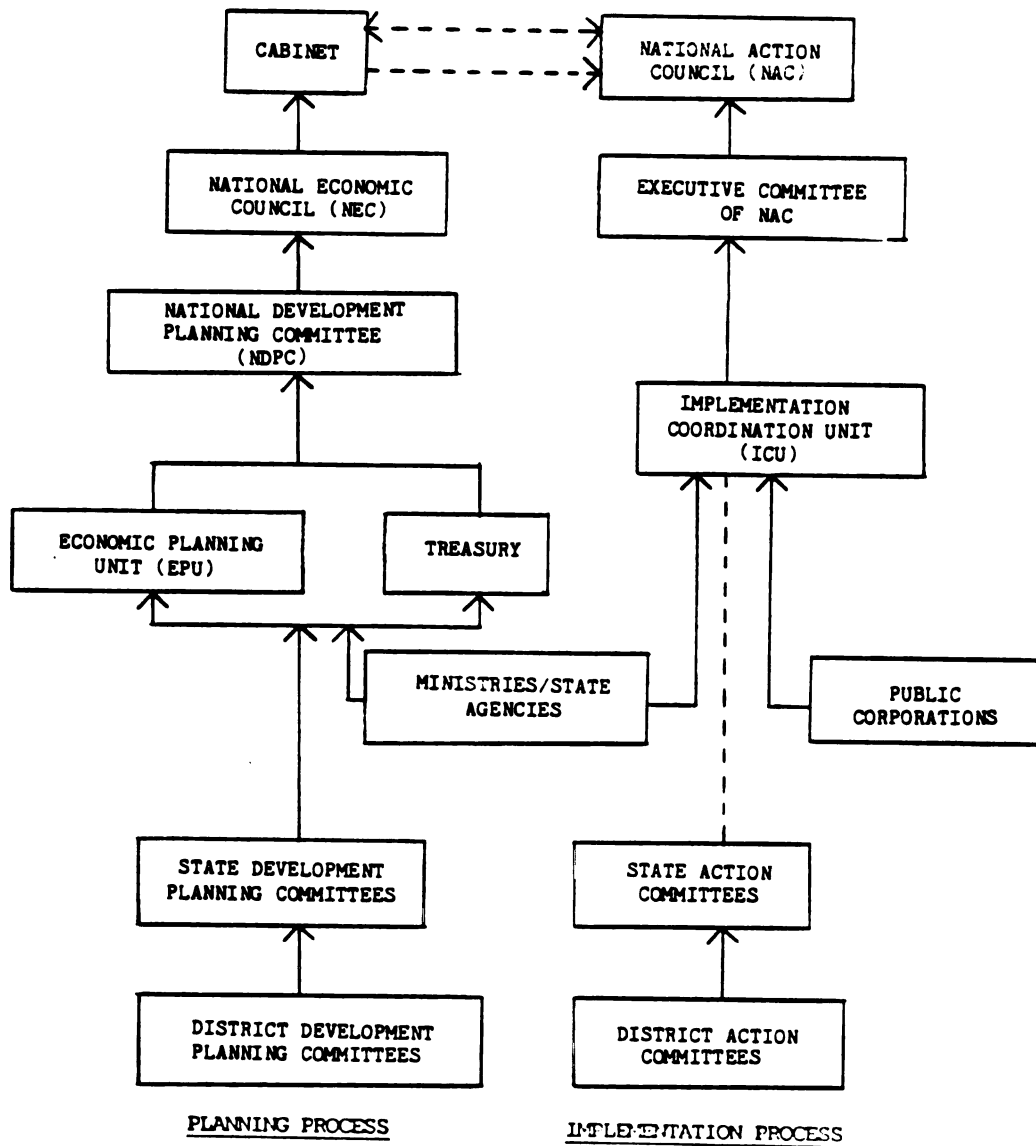


Figure 4.1: Process of Policy/Program Planning and Implementation, Malaysia.
Source: Elyas Omar.(1980) p.23

development indices into four categories of development level:

- (1) Very High (more than plus 1 standard deviation)
- (2) High (between 0 and plus 1 standard deviation)
- (3) Low (between 0 and minus 1 standard deviation)
- (4) Very Low (less than minus 1 standard deviation).

Results of Survey

In this study weights were derived from a survey amongst a group of selected Malaysian professionals and scholars who were working or studying in the United States in 1986. Ideally, it might, perhaps, have been more realistic to undertake the survey among a cross-section of the society in Malaysia itself. However, this could not be done because of both financial and time constraints. Nonetheless, the survey that was carried out not only serves as the next best alternative under the constraints confronted, but also it compensates for any arbitrariness or bias that might be introduced if weights were attempted from the writer's personal valuation alone. That the survey was conducted among a group of academically qualified Malaysians, who understand the significance of the development process adds strength to the weights derived.

The thirty-two respondents represent different ethnic backgrounds and have different professional and academic experiences in Malaysia. Responses obtained from the survey were processed as outlined in Chapter Three. A 30 x 30 matrix was assembled and used to derive weights for all variables. Table 4.1 shows the 30 weights arranged in

order of the importance attached to them by the respondents.

The responses obtained indicate clearly that there is a wide variability in perceptions of what is important for development. This variability is consistent with the view that perceptions of development vary amongst individuals within the society as well as in different nations or cultures.

Two questions that were relevant to this study were asked to respondents:

- (1) How would you rate the issue of reduction of regional inequalities (i.e. between administrative districts) in Malaysia ?
- (2) How would you rate the role of the government in reducing regional inequalities (i.e. between administrative districts) in Malaysia ?

Responses were rated in an ordinal scale: very important, fairly important, less important, and not important.

The survey establishes the importance of regional disparities in development as an important national issue. It reveals the importance that must be attached to the role of the government in addressing the problem of regional disparities in development. In the survey, 69 percent of the respondents considered the question of reducing inter-regional inequalities as being very important. The other 31 percent viewed that issue as being fairly important. In the second question, 56 percent of the respondents thought the role of the government in reducing inter-regional inequalities as being very important. 40

Table 4.1
Weights of 30 Selected Indicators of Development
(Based on Value Judgement Survey)

*			
Rank	Indicators of Development	Weight	Std.Deviation
1.	Labor Force Above Poverty	4.05	0.53
2.	Malays in Commercial Activities	4.00	0.30
2.	Malays in Manufacturing Activities	4.00	0.29
4.	Infant Mortality	3.93	0.87
5.	Maternal Mortality	3.89	0.91
6.	Malays in Agricultural Vocations	3.88	0.64
7.	Population With Formal Schooling	3.86	0.58
8.	Teacher-Population Ratio	3.79	0.45
9.	Population Literacy	3.74	0.60
10.	Gross Domestic Product	3.70	0.49
11.	Flush and Pour-Flush Toilets	3.57	0.46
12.	Piped-Water Supply	3.54	0.43
13.	Public Low-Cost Housing	3.51	0.54
14.	Manufacturing Activities	3.47	0.49
15.	Government Officials	3.42	0.39
15.	Public-Supply Electricity	3.42	0.39
17.	Commercial Activities	3.36	0.50
18.	Professional and Technical Manpower	3.24	0.50
19.	Agricultural Extension Service	3.13	0.41
20.	Postal Services	2.99	0.56
21.	Rural Telephone Booths	2.98	0.56
22.	Road Network	2.97	0.53
22.	Female Literacy	2.97	0.67
24.	Female in Non-Agricultural Economic Activities	2.95	0.61
25.	Housing Stock	2.92	0.66
26.	Administrative and Managerial Manpower	2.89	0.68
27.	Fire Services	2.65	0.74
27.	Public Security	2.65	0.66
29.	Large Urban Places	2.51	0.76
30.	Urban Population	2.02	0.88

Note: * Variables with same ranking means that they have weights of equal value.

For further details regarding variables refer to Table 3.1 and Appendix 1.

percent of the respondents regarded the government's role in reducing inter-regional inequalities as being fairly important and the other 3 percent viewed it as being less important.

1970 Development Index

Unweighted development indices were calculated for the comparative districts according to the formula previously presented. Table 4.2 shows the index of development for the various districts in Peninsular Malaysia in 1970. It can be observed that there are wide variations and gaps in the performance of development among the districts. Such differences among the districts indicate the existence of spatial inequalities. Figure 4.2 shows the level of development for the comparative districts in 1970, and Figure 4.3 for districts as they actually prevailed in 1970.

Of the 64 comparative districts in 1970 only 28 districts recorded positive indices of development. In other words, 44 percent of these districts received more than average share of the benefits of development when considering all 30 variables. Correspondingly, 36 districts (56 percent) registered negative indices of development; that is, they had below average share of the benefits of development.

Table 4.3 shows that 21 of the 28 districts with positive development indices (75 percent) are districts in the west coast states of Peninsular Malaysia, namely Perlis, Kedah, Penang, Perak,

Table 4.2
1970 Comparative Districts, Peninsular Malaysia:
Index of Development (Unweighted) and Ranking

Rank	District	Development Index (Positive)	Rank	District	Development Index (Negative)
1)	Klang/Ulu Selangor/ Kuala Lumpur *	52.87	29)	Dindings/Kuala Kangsar/ Hilir Perak *	-0.03
2)	Pulau Pinang Timur Laut	50.40	30)	Rembau	-0.61
3)	Kuantan	30.60	31)	Segamat	-0.89
4)	Johor Bahru	30.02	32)	Melaka Utara	-0.91
5)	Melaka Tengah	29.35	33)	Seberang Perai Selatan	-1.35
6)	Kinta	29.10	34)	Kemaman	-1.43
7)	Seremban	24.64	35)	Kulim	-1.84
8)	Seberang Perai Utara	12.76	36)	Temerloh	-2.26
9)	Seberang Perai Tengah	12.54	37)	Kuala Muda	-2.64
10)	Mersing	11.36	38)	Raub	-3.11
11)	Tampin	10.29	39)	Perlis	-3.54
12)	Kota Bahru	9.02	40)	Melaka Selatan	-3.71
13)	Cameron Highland	8.87	41)	Pontian	-3.95
14)	Pulau Pinang Barat Daya	7.72	42)	Kota Tinggi	-4.36
15)	Port Dickson	7.30	43)	Kuala Selangor/ Sabak Bernam *	-4.90
16)	Bentong	6.74	44)	Hulu Perak	-6.32
17)	Pekan	6.19	45)	Jerantut	-8.55
18)	Keluang	6.18	46)	Lipis	-8.58
19)	Dungun	5.52	47)	Marang	-9.08
20)	Kuala Langat/ Ulu Langat *	4.89	48)	Langkawi	-11.83
21)	Jelebu	3.97	49)	Yan	-12.50
22)	Larut & Matang	3.83	50)	Tumpat	-13.35
23)	Batang Padang	3.37	51)	Bachok	-14.38
24)	Kuala Pilah	3.08	52)	Besut	-14.54
25)	Muar	1.60	53)	Bandar Bahru	-14.61
26)	Kuala Terengganu	1.04	54)	Pasir Mas	-15.41
27)	Batu Pahat	0.50	55)	Kerian	-15.94
28)	Kota Setar	0.07	56)	Machang	-16.69
			57)	Pasir Puteh	-17.10
			58)	Baling	-20.80
			59)	Ulu Terengganu	-21.43
			60)	Kubang Pasu	-21.89
			61)	Sik	-22.29
			62)	Ulu Kelantan	-23.62
			63)	Tanah Merah	-23.69
			64)	Padang Terap	-25.67

Standard Deviation = 16.18

Note: * Denotes districts that have been combined to facilitate comparison with 1980 comparative districts.

**PENINSULAR MALAYSIA:
DISTRICTS, 1970**

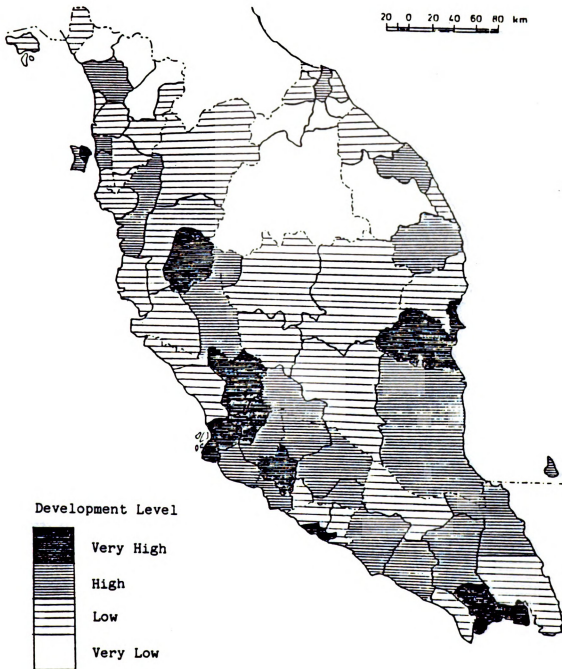


Figure 4.2: 1970 Comparative Districts, Peninsular Malaysia:
Level of Development.

**PENINSULAR MALAYSIA:
DISTRICTS, 1970**

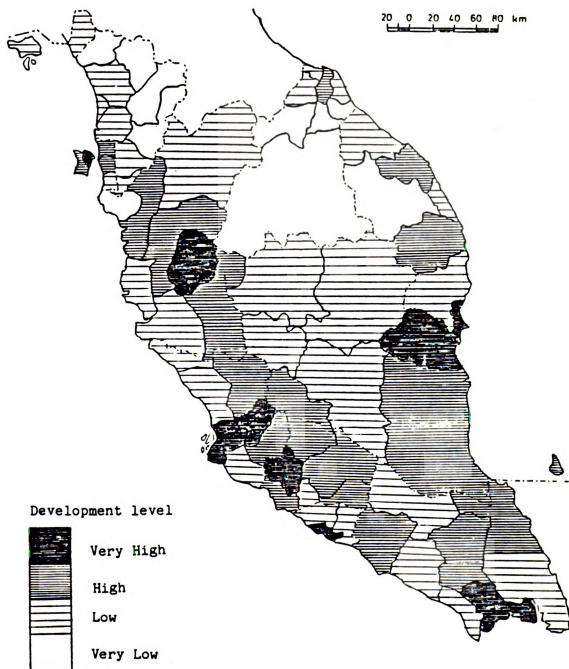


Figure 4.3: 1970 Districts, Peninsular Malaysia:
Level of Development.

Selangor, Negri Sembilan, Malacca, and Johore. Administrative districts in these states are hereafter referred to as western districts. Since there are a total of 42 comparative western districts, this means that 50 percent of all western districts had average or more than average share of the benefits of development in 1970. The other 7 (25 percent) are from districts in the east coast states of Kelantan, Terengganu, and Pahang. These districts are hereafter referred to as eastern districts. Out of the total of 22 comparative eastern districts, only 32 percent had average or above average share of the benefits of development in 1970.

Table 4.3
1970 Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Unweighted) by
Geographical Location and Urban and Rural Districts

Index of Development	Western District	Eastern District	Urban District	Rural District	Total
Positive Development Index	21	7	18	10	28
Negative Development Index	21	15	2	34	36
Total	42	22	20	44	64

18 of the 28 districts (64 percent) with positive development indices are urban districts. In this study, an urban district is defined as one which has at least an urban center with a population

concentration of 20,000 and more. Appendix 8 lists the (comparative) urban and rural districts in Peninsular Malaysia for 1970 and 1980. The 18 urban districts represent 90 percent of all urban districts in Peninsular Malaysia in 1970. Of these 18 urban districts with positive development indices, 14 are western districts and 4 are eastern districts.

Only 10 of the 28 districts with positive development indices, or 36 percent, are rural districts. In contrast to an urban district, a rural district, in this study, is one which does not have a significant urban center (population concentration of 20,000 and more). Based on this definition, 44 of the 1970 comparative districts are rural districts.

In terms of development performance of districts by states, 4 states are found to have more than 50 percent of their comparative districts registering positive development indices. These are the states of Negri Sembilan (83 percent), Penang (80 percent), Selangor (67 percent), and Johore (62 percent). The states of Pahang and Perak have exactly 50 percent of their comparative districts with positive development indices (see Table 4.4). In examining the development index for the districts as they actually prevailed in 1970, it was also found that the state of Selangor has more than 50 percent of its districts (4 out of 7) with positive development indices, while the state of Perak still registers 50 percent of its districts (4 out of 8) with positive development indices.

Overall, 36 of the 64 comparative districts, or 56 percent, recorded negative development indices (see Table 4.3). In absolute

numbers there are more western districts than eastern districts with negative development indices, that is 21 to 15. It should be pointed out that the 21 western districts make up only 50 percent of all the western districts. However, the 15 eastern districts with negative development indices make up 68 percent of all the eastern districts.

Only 2 urban districts register negative development indices. This constitutes 10 percent of all the urban districts and 6 percent of all districts with negative development performance. The remainder of the 36 districts with negative development indices are rural districts. The 34 rural districts with negative development indices constitute 77 percent of all rural districts, and 94 percent of all districts with negative development performance.

Table 4.4
1970 Comparative Districts, Peninsular Malaysia
Breakdown of Districts with Positive Development
Index by States

State	Number of Comparative Districts with Positive Development Index	As Percentage of Total	As Percentage of State Total
1) Johore	5 (out of 8)	17.86	62.5
2) Kedah	1 (out of 10)	3.57	10.0
3) Kelantan	1 (out of 8)	3.57	12.5
4) Melaka	1 (out of 3)	3.57	33.33
5) N. Sembilan	5 (out of 6)	17.86	83.33
6) Pahang	4 (out of 8)	14.29	50.0
7) Penang	4 (out of 5)	14.29	80.0
8) Perak	3 (out of 6)	10.71	50.0
9) Perlis	0 (out of 1)	0.0	0.0
10) Selangor	2 (out of 3)	7.14	66.67
11) Terengganu	2 (out of 6)	7.14	33.33
Total	28 (64)	43.75	

The states of Perlis, Kedah, Kelantan, and Terengganu have more than 50 percent of their districts with negative development indices. The whole state of Perlis, which is also treated as a district, shows a negative development performance. In Kedah, 9 out of 10 districts register negative development indices, in Kelantan 7 out of 8 districts have negative indices, and in Terengganu it is 4 out of 6.

In case of the weighted development index, apart from an increase in the total number of the comparative districts with positive development indices, from 28 to 29, as well as the slight shift in the relative position of some of the districts, the weighted development index, displays almost similar distributional patterns as those generated by the unweighted development index (see Table 4.5). The weighted development index also indicates that western districts continued to share a large proportion of the group of districts with positive development indices. It also reveals that two-thirds of the eastern districts continued to remain in the group of districts with below average development. Just as the table of unweighted development indices, Table 4.6 of weighted indices shows that there are more urban than rural districts with above average development.

To measure the degree of agreement between results from weighted and unweighted indices, a Spearman rank correlation coefficient was calculated. The coefficient is 0.99, indicating a very high correlation (significant at 0.05 level). In other words, analysis of development based on unweighted and weighted development indices produce similar outcomes.

Table 4.5
1970 Comparative Districts, Peninsular Malaysia
Ranking of Districts According to Development Index

District	Devt. Index		District	Devt. Index	
	Unwtd.	Wtd.		Unwtd.	Wtd.
JOHORE STATE			PAHANG STATE		
1) Batu Pahat	27+	26+	36) Bentong	16+	19+
2) Johor Bahru	4+	3+	37) Cameron Highland	13+	12+
3) Keluang	18+	17+	38) Jerantut	45	46
4) Kota Tinggi	42	41	39) Kuantan	3+	4+
5) Mersing	10+	10+	40) Lipis	46	47
6) Muar	25+	25+	41) Pekan	17+	16+
7) Pontian	41	40	42) Raub	38	42
8) Segamat	31	32	43) Temerloh	36	35
KEDAH STATE			PENANG STATE		
9) Baling	58	58	44) S.P. Utara	8+	8+
10) Bandar Bahru	53	53	45) S.P. Tengah	9+	9+
11) Kota Setar	28+	30	46) S.P. Selatan	33	33
12) Kuala Muda	37	37	47) P.P. T. Laut	2+	2+
13) Kubang Pasu	60	59	48) P.P. B. Daya	14+	15+
14) Kulim	35	34	PERAK STATE		
15) Langkawi	48	49	49) Batang Padang	23+	23+
16) Padang Terap	64	64	50) Dindings/Kuala Kangsar/Perak Hilir *	29	29+
17) Sik	61	61	51) Kinta	6+	6
18) Yan	49	48	52) Kerian	55	55
KELANTAN STATE			53) Larut & Mtg.	22+	22+
19) Bachok	51	51	54) Ulu Perak	44	44
20) Kota Bahru	12+	13+	PERLIS STATE		
21) Machang	56	57	55) Perlis	39	38
22) Pasir Mas	54	54	SELANGOR STATE		
23) Pasir Puteh	57	56	56) Kuala Selangor/S. Bernam *	43	43
24) Tanah Merah	63	62	57) Kuala Langat/U. Langat *	20+	20+
25) Tumpat	50	50	58) Klang/Ulu S'gor/K. Lumper *	1+	1+
26) Ulu Kelantan	62	63			
MELAKA STATE					
27) Melaka Utara	32	31			
28) Melaka Selatan	40	39			
29) Melaka Tengah	5+	5+			

Table 4.5 (continued)

NEGRI SEMBILAN STATE

30) Jelebu	21+	21+
31) Kuala Pilah	24+	24+
32) Port Dickson	15+	14+
33) Rembau	30	28+
34) Seremban	7+	7+
35) Tampin	11+	11+

TERENGGANU STATE

59) Besut	52	52
60) Dungun	19+	18+
61) Kemaman	34	36
62) K.Terengganu	26+	27+
63) Marang	47	45
64) U.Terengganu	59	60

Note: * denotes districts that have been combined to facilitate comparison

+ denotes ranking of districts with positive index of development

Table 4.6
1970 Comparative Districts, Peninsular Malaysia:
Index of Development (Weighted) and Ranking

Rank	District	Devt. Index (Positive)	Rank	District	Devt. Index (Negative)
1)	Klang/Ulu Selangor/ Kuala Lumpur *	171.93	30)	Kota Setar	-0.38
2)	Pulau Pinang Timur Laut	164.90	31)	Melaka Utara	-0.49
3)	Johor Bahru	99.74	32)	Segamat	-1.89
4)	Kuantan	99.66	33)	Seberang Perai Selatan	-3.29
5)	Melaka Tengah	96.35	34)	Kulim	-6.38
6)	Kinta	94.47	35)	Temerloh	-7.86
7)	Seremban	80.58	36)	Kemaman	-9.47
8)	Seberang Perai Utara	41.51	37)	Kuala Muda	-9.61
9)	Seberang Perai Tengah	41.47	38)	Perlis	-10.73
10)	Mersing	36.59	39)	Melaka Selatan	-10.91
11)	Tampin	35.15	40)	Pontian	-11.42
12)	Cameron Highland	31.60	41)	Kota Tinggi	-14.35
13)	Kota Bahru	30.29	42)	Raub	-14.55
14)	Port Dickson	28.64	43)	Kuala Selangor/ Sabak Bernam *	-15.38
15)	Pulau Pinang Barat Daya	26.69	44)	Hulu Perak	-22.49
16)	Pekan	20.80	45)	Marang	-29.19
17)	Keluang	20.30	46)	Jerantut	-29.31
18)	Dungun	19.59	47)	Lipis	-30.08
19)	Bentong	19.25	48)	Yan	-38.45
20)	Kuala Langat/ Ulu Langat *	18.43	49)	Langkawi	-39.84
21)	Jelebu	13.14	50)	Tumpat	-44.16
22)	Larut & Matang	12.48	51)	Bachok	-44.52
23)	Batang Padang	11.46	52)	Besut	-46.23
24)	Kuala Pilah	11.11	53)	Bandar Bahru	-47.22
25)	Muar	6.20	54)	Pasir Mas	-49.91
26)	Batu Pahat	3.79	55)	Kerian	-53.72
27)	Kuala Terengganu	2.57	56)	Pasir Puteh	-54.45
28)	Rembau	1.51	57)	Machang	-54.79
29)	Dinding/K.Kangsar/ Hilir Perak	0.86	58)	Baling	-68.93
			59)	Kubang Pasu	-73.41
			60)	Ulu Terengganu	-73.63
			61)	Sik	-73.83
			62)	Tanah Merah	-80.02
			63)	Ulu Kelantan	-82.60
			64)	Padang Terap	-87.56
Standard Deviation = 53.39					

Note: * denotes districts that have been combined to facilitate comparison with 1980 comparative districts.

p

p

c

s

c

L

w

p

u

ea

Ta

As shown in Table 4.7, 22 out of the 29 districts with positive development indices are western districts. This comprise 46 percent of all western districts. On the other hand, only 7 of the 29 districts with positive development indices are eastern districts. Still, most of the eastern districts continued to have below average development (15 out of 22).

Table 4.7
1970 Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Weighted) by
Geographical Location and Urban and Rural Districts

Index of Devt.	Western District	Eastern District	Urban District	Rural District	Total
Positive Devt. Index	22	7	18	11	29
Negative Devt. Index	20	15	2	33	35
Total	42	22	20	44	64

In terms of urban and rural districts, 18 of the 29 districts with positive development indices are urban districts. Of the 35 districts with below average development performance, 33 are rural districts.

The development index for the 1970 districts as they actually prevailed also produced results that show that most of the western and urban districts have positive development indices, while most of the eastern and rural districts register negative development indices (see Tables 4.8 and 4.9).

Table 4.8
1970 Non-Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Unweighted) by
Geographical Location and Urban and Rural Districts

Index of Devt.	Western District	Eastern District	Urban District	Rural District	Total
Positive Devt. Index	22	7	18	11	29
Negative Devt. Index	26	15	3	38	41
Total	48	22	21	49	70

Table 4.9
1970 Non-Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Weighted) by
Geographical Location and Urban and Rural Districts

Index of Devt.	Western District	Eastern District	Urban District	Rural District	Total
Positive Devt. Index	23	7	19	11	30
Negative Devt. Index	25	15	3	38	40
Total	48	22	22	49	70

1980 Development Index

As for 1970, districts in 1980 were examined in terms of their pattern of spatial development. Of the 64 comparative districts in 1980, it is found that 30 (or 47 percent) register positive development indices. The other 34 districts (or 53 percent) have negative development indices (see Table 4.10). Figure 4.4 shows the level of development for the comparative districts and Figure 4.5 shows the level of development for all districts as they actually prevailed in 1980.

23 of these 30 districts with positive development indices (or 77 percent) consist of western districts. This figure represents 55 percent of all western districts. Still, only 7 eastern districts (or 23 percent) have positive development indices. This means that only 32 percent of all eastern districts have average or more than average share of the benefits of development.

In 1970 there were 20 urban districts and 44 rural districts. However, in 1980 the number of urban districts increased by 6 to 26; 4 being new urban centers. Correspondingly, the number of rural districts declined from 44 to 38.

As shown in Table 4.11, 19 of the 26 urban districts (or 73 percent) have positive development indices. This constitutes 63 percent of all districts with positive development indices

The 1980 unweighted development index also indicates that 11 of the 38 rural districts have average or above average development

Table 4.10
1980 Comparative Districts, Peninsular Malaysia:
Index of Development (Unweighted) and Ranking

Rank	District	Devt. Index (Positive)	Rank	District	Devt. Index (Negative)
1)	Gombak/Klang/Petaling Ulu Selangor/Wilayah Persekutuan (Kuala Lumpur) *	47.16	31)	Muar	-0.03
2)	Pulau Pinang Timur Laut	38.34	32)	Batu Pahat	-0.16
3)	Kuantan	27.40	33)	Pontian	-0.39
4)	Seremban	26.27	34)	K.Setar/Pendang *	-1.19
5)	Melaka Tengah	26.10	35)	Pekan/Rompin *	-1.24
6)	Johor Bahru	26.07	36)	Keluang	-2.49
7)	Kinta	17.69	37)	Batang Padang	-2.72
8)	Kota Bahru	15.47	38)	Ulu Perak	-3.28
9)	S.Perai Tengah	15.43	39)	Manjung/K.Kangsar Hilir Perak/Perak Tengah *	-4.50
10)	S.Perai Utara	14.68	40)	Segamat	-5.28
11)	Pulau Pinang Barat Daya	13.81	41)	Marang	-5.31
12)	Kuala Terengganu	13.48	42)	Jerantut	-5.35
13)	Dungun	13.17	43)	Kota Tinggi	-6.79
14)	Kuala Langat/Ulu Langat/Sepang *	12.48	44)	Langkawi	-6.99
15)	Mersing	11.45	45)	Temerloh	-7.36
16)	Tampin	7.55	46)	Cameron Highland	-7.39
17)	Rembau	7.54	47)	Bandar Bahru	-8.65
18)	Port Dickson	4.90	48)	Kuala Selangor/ Sabak Bernam *	-10.10
19)	Larut & Matang	4.89	49)	Lipis	-10.39
20)	Jelebu	3.81	50)	Machang	-13.53
21)	Bentong	3.28	51)	Yan	-15.21
22)	Kuala Pilah/Jempol *	2.98	52)	Besut	-15.26
23)	Kemaman	1.71	53)	Tumpat	-15.54
24)	Melaka Utara	1.57	54)	Ulu Terengganu	-15.66
25)	Perlis	1.36	55)	Pasir Puteh	-15.70
26)	Kuala Muda	1.34	56)	Kubang Pasu	-16.18
27)	Melaka Selatan	1.26	57)	Pasir Mas	-16.63
28)	Raub	0.61	58)	Kerian	-16.69
29)	Seberang Perai Selatan	0.17	59)	Tanah Merah	-19.16
30)	Kulim	0.02	60)	Bachok	-19.87
			61)	Baling	-22.18
			62)	Padang Terap	-22.29
			63)	Ulu Kelantan/ Kuala Krai *	-22.54
			64)	Sik	-25.96

Standard Deviation = 14.94

Note: * denotes districts that have been combined to facilitate comparison with 1970 comparative districts.

**PENINSULAR MALAYSIA:
DISTRICTS, 1980**

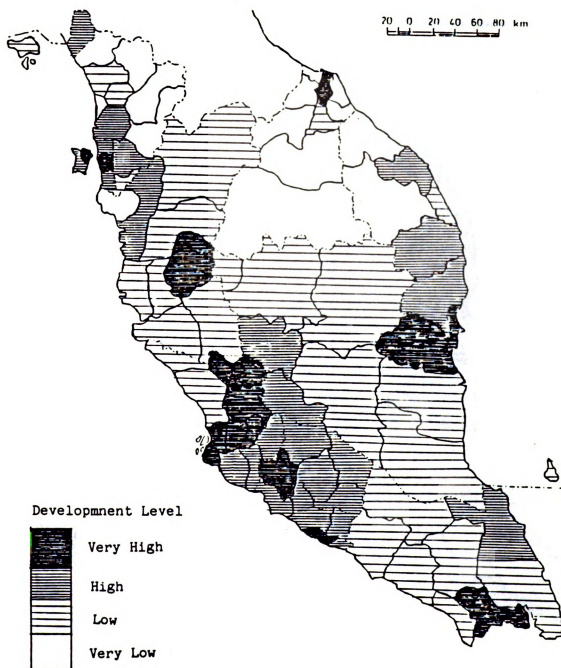
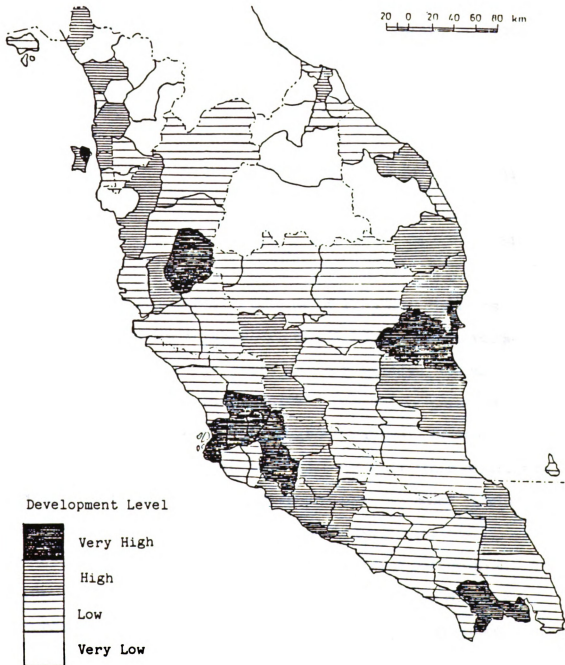


Figure 4.4: 1980 Comparative Districts, Peninsular Malaysia:
Level of Development.

**PENINSULAR MALAYSIA:
DISTRICTS, 1980**



**Figure 4.5: 1980 Districts, Peninsular Malaysia:
Level of Development.**

Table 4.11
1980 Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Unweighted) by
Geographical Location and Urban and Rural Districts

Index of Devt.	Western District	Eastern District	Urban District	Rural District	Total
Positive Devt. Index	23	7	19	11	30
Negative Devt. Index	19	15	7	27	34
Total	42	22	26	38	64

performance. This represents 29 percent of all rural districts. However, the bulk of the rural districts still have below average development performance as evidenced by their negative indices.

Five states have more than 50 percent of their comparative districts that register positive development indices. Of these, Malacca, Negri Sembilan, Penang, and Perlis have all their districts (100 percent) with positive development indices. Selangor (including the Federal Territory of Kuala Lumpur) has 67 percent of its comparative districts with above average development performance. In the state of Terengganu 50 percent of its districts have positive development performance (see Table 4.12). Except for some changes in the figures, results are similar when the non-comparative districts are used; these states still show 50 percent or more of their districts have positive development indices.

34 of the 64 comparative districts (or 53 percent) register negative development indices in 1980. Of these, 19 (or 56 percent) are western districts and 15 (or 4 percent) are eastern districts. Even though western districts outnumbered eastern districts with negative development index, the 19 western districts represent only 45 percent of all western districts. On the other hand, the 15 eastern districts comprise 68 percent of all the eastern districts.

Table 4.12
1980 Comparative Districts, Peninsular Malaysia:
Breakdown of Districts with Positive Development
Index by States

State	Number of Comparative Districts with Positive Devt. Index	As Percentage of Total	As Percentage of State Total
1) Johore	2 (out of 8)	3.125	25.0
2) Kedah	2 (out of 10)	3.125	20.0
3) Kelantan	1 (out of 8)	1.56	12.5
4) Melaka	3 (out of 3)	4.69	100.00
5) N. Sembilan	6 (out of 6)	9.375	100.00
6) Pahang	3 (out of 8)	4.69	37.5
7) Penang	5 (out of 5)	7.81	100.00
8) Perak	2 (out of 6)	3.125	33.33
9) Perlis	1 (out of 1)	1.56	100.00
10) Selangor	2 (out of 3)	3.125	66.67
11) Terengganu	3 (out of 6)	4.69	50.00
Total	30 (64)	46.875	

Of these 34 districts with negative development indices, 7 (or 21 percent) are urban districts and 27 (or 79 percent) are rural districts.

In 1980, 5 states have more than 50 percent of their districts with negative development indices, namely Kelantan (87 percent), Kedah (80 percent), Johore (75 percent), Perak (67 percent) and Pahang (62 percent) (see Table 4.12).

According to the weighted development indices (in Table 4.13) the number of districts with positive development indices are 31 instead of 30. With the exception of Kulim and Raub, all other comparative districts continued to have above average development by the weighted development indices. Batu Pahat, Muar, and Pontian (all in the state of Johore) are the other three districts with positive indices. The application of weights in aggregating the z-scores have resulted in these 3 districts having positive indices, while Kulim and Raub have negative indices. The number of eastern districts with positive development index decreased from 7 to 6. Also, the number of urban districts with positive development index increased from 19 to 20. Apart from these slight changes, the 1980 weighted development index, basically reflects almost similar pattern of spatial development as that produced by the unweighted development indices (see Table 4.14).

As shown in Table 4.15, the majority of western and urban districts continued to register positive development performance, while most of the eastern and rural districts are characterized by negative development indices.

Table 4.13
1980 Comparative Districts, Peninsular Malaysia:
Index of Development (Weighted) and Ranking

Rank	District	Devt. Index (Positive)	Rank	District	Devt. Index (Negative)
1)	Gombak/Klang/Petaling Ulu Selangor/Wilayah Persekutuan (Kuala Lumpur) *	151.57	32)	Kulim	-0.74
2)	Pulau Pinang Timur Laut	125.13	33)	Raub	-1.70
3)	Melaka Tengah	89.82	34)	Pekan/Rompin*	-2.62
4)	Kuantan	86.92	35)	K.Setar/Pendang *	-5.01
5)	Johor Bahru	86.74	36)	Keluang	-8.46
6)	Seremban	86.45	37)	Batang Padang	-10.55
7)	Kinta	55.89	38)	Marang	-13.63
8)	S.Perai Tengah	54.42	39)	Ulu Perak	-14.23
9)	P.P. Barat Daya	49.32	40)	Manjung/K.Kangsar H.Perak/Perak Tengah *	-15.24
10)	Kota Bahru	48.72	41)	Jerantut	-17.25
11)	S.Perai Utara	48.10	42)	Segamat	-17.76
12)	Kuala Langat/Ulu Langat/Sepang*	46.65	43)	Kota Tinggi	-20.29
13)	Kuala Terengganu	42.47	44)	Temerloh	-24.79
14)	Dungun	42.04	45)	Langkawi	-25.26
15)	Mersing	35.32	46)	Bandar Bahru	-26.60
16)	Rembau	28.59	47)	C.Highland	-29.16
17)	Tampin	27.37	48)	Kuala Selangor/ Sabak Bernam*	-31.77
18)	Port Dickson	18.06	49)	Lipis	-38.15
19)	Jelebu	13.74	50)	Machang	-43.34
20)	Larut & Matang	12.84	51)	Besut	-48.63
21)	Kuala Pilah/Jempol*	10.99	52)	Tumpat	-50.22
22)	Melaka Utara	8.27	53)	Pasir Puteh	-50.37
23)	Melaka Selatan	7.67	54)	Yan	-50.92
24)	Kemaman	7.40	55)	Ulu Terengganu	-51.14
25)	Bentong	6.31	56)	Kubang Pasu	-53.58
26)	Perlis	4.90	57)	Pasir Mas	-55.21
27)	Kuala Muda	4.72	58)	Kerian	-56.56
28)	Batu Pahat	1.89	59)	Bachok	-64.90
29)	Muar	1.82	60)	Tanah Merah	-65.12
30)	Seberang Perai Selatan	1.77	61)	Padang Terap	-74.15
31)	Pontian	1.61	62)	Baling	-74.84
			63)	Ulu Kelantan/ Kuala Krai*	-77.77
			64)	Sik	-87.53

Standard Deviation = 49.39

Note: * Denotes districts that have been combined to facilitate comparison with 1970 comparative districts.

Table 4.14
1980 Comparative Districts, Peninsular Malaysia
Ranking of Districts According to Development Index

District	Devt. Index		District	Devt. Index	
	Unwtd.	Wtd.		Unwtd.	Wtd.
JOHORE STATE			PAHANG STATE		
1) Batu Pahat	32	28+	36) Bentong	21+	25+
2) Johor Bahru	6+	5+	37) Cameron Highland	46	47
3) Keluang	36	36	38) Jerantut	42	41
4) Kota Tinggi	43	43	39) Kuantan	3+	4+
5) Mersing	15+	15+	40) Lipis	49	49
6) Muar	31	29+	41) Pekan/Rompin *	35	34
7) Pontian	33	31+	42) Raub	28+	33
8) Segamat	40	42	43) Temerloh	45	44
KEDAH STATE			PENANG STATE		
9) Baling	61	46	44) S.P. Utara	10+	11+
10) Bandar Bahru	47	62	45) S.P. Tengah	9+	8+
11) Kota Setar/ Pendang *	34	35	46) S.P. Selatan	29+	30+
12) Kuala Muda	26+	27+	47) P.P.T.Laut	2+	2+
13) Kubang Pasu	56	56	48) P.P.B.Daya	11+	9+
14) Kulim	30+	32	PERAK STATE		
15) Langkawi	44	45	49) Batang Padang	37	37
16) Padang Terap	62	61	50) Manjung/K.K./ H.Pk/P.Tengah*	39	40
17) Sik	64	64	51) Kinta	7+	7+
18) Yan	51	54	52) Kerian	58	58
KELANTAN STATE			53) Larut & Mtg.	19+	20+
19) Bachok	60	59	54) Ulu Perak	38	39
20) Kota Bahru	8+	10+	PERLIS STATE		
21) Machang	50	50	55) Perlis	25+	26+
22) Pasir Mas	57	57	SELANGOR STATE		
23) Pasir Puteh	55	53	56) Kuala Selangor/ S.Bernam *	48	48
24) Tanah Merah	59	60	57) Kuala Langat/Ulu Lgt/Sepang *	14+	12+
25) Tumpat	53	52	58) Gombak/Klang/ Petaling/U.S'gor /W.P.*	1+	1+
26) Ulu Kelantan/ Kuala Krai *	63	63	TERENGGANU STATE		
MELAKA STATE			59) Besut	52	52
27) Melaka Utara	24+	22+	60) Dungun	13+	14+
28) Melaka Selatan	27+	23+	61) Kemaman	23+	24+
29) Melaka Tengah	5+	3+	62) K.Terengganu	12+	13+
NEGRI SEMBILAN STATE			63) Marang	41	38
30) Jelebu	20+	19+	64) U.Terengganu	54	55
31) Kuala Pilah/ Jempol *	22+	21+			
32) Port Dickson	18+	18+			
33) Rembau	17+	16+			
34) Seremban	4+	6+			
35) Tampin	16+	17+			

Note: * combined districts to facilitate comparisons
+ districts with positive development index .

Table 4.15
1980 Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Weighted) by
Geographical Location and Urban and Rural Districts

Index of Devt.	Western District	Eastern District	Urban District	Rural District	Total
Positive Devt. Index	25	6	20	11	31
Negative Devt. Index	17	16	6	27	33
Total	42	22	26	38	64

25 of the 31 districts (or 81 percent) with positive development indices are western districts. This constitutes 60 percent of all western districts. Only 6 eastern districts (or 19 percent) have positive development indices. This made up 27.27 percent of all eastern districts.

20 of the 31 districts (or 65 percent) registering average or above average development performance are urban districts. This constitutes 77 percent of all urban districts. Only 11 of the 38 rural districts have above average development performance. The other 27 rural districts (or 71 percent) have negative development indices.

Except for the fact that there are some slight changes in the unweighted and weighted development indices for the 1980 non-comparative districts, it was observed that overall the results produced are not significantly different from those produced by using indices based on comparative districts. As in the 1980 development

index for the comparative districts, the development index for the non-comparative districts continue to display the spatial pattern in which western and urban districts dominate the group of districts with positive development. This also indicates that in 1980 most of the eastern and rural districts continued to record negative development indices (see Tables 4.16 and 4.17).

The Spearman rank correlation between unweighted and weighted development indices for 1980 produces a 0.99 coefficient, indicating a high correlation (significant at 0.05 level). This indicates that analysis of development for 1980 based on unweighted and weighted development indices produces similar pattern of spatial development.

Table 4.16
1980 Non-Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Unweighted) by
Geographical Location and Urban and Rural Districts

Index of Devt.	Western District	Eastern District	Urban District	Rural District	Total
Positive Devt. Index	26	8	22	12	34
Negative Devt. Index	28	16	9	35	44
Total	54	24	31	47	78

Table 4.17
1980 Non-Comparative Districts, Peninsular Malaysia:
Distribution of Development Index (Weighted) by
Geographical Location and Urban and Rural Districts

Index of Devt.	Western District	Eastern District	Urban District	Rural District	Total
Positive Devt. Index	31	7	25	13	38
Negative Devt. Index	23	17	6	34	40
Total	54	24	31	47	78

Comparison of 1970 and 1980 Development Indices

The examination of the levels of development of the comparative districts for 1970 and 1980 shows immediately one striking characteristic. This has to do with the preponderance of the comparative districts with negative indices of development. Even though the number of comparative districts that register average and above average development performance recorded a slight increase over time, overall for both 1970 and 1980, the total number of comparative districts with positive development indices comprise less than 50 percent of all the comparative districts. As can be seen from Table 4.18, in 1970 only 28 out of the 64 comparative districts (or 44 percent) have positive indices, while in 1980 there are 30 out of 64 (or 47 percent). There are more comparative districts with below average development performance; as evidenced by the negative indices

for 1970 and 1980. Table 4.19 shows that 36 of the 64 comparative districts (or 56 percent) have negative indices in 1970, while in 1980 there are 36 out of 64 (or 53 percent).

Table 4.18
Comparative Districts: Number of Districts With
Positive Index Of Development

Year	Unweighted Development Index	%	Weighted Development Index	%
1970	28 (out of 64)	43.75	29 (out of 64)	45.31
1980	30 (out of 64)	46.85	31 (out of 64)	48.44

Table 4.19
Comparative Districts: Number of Districts With
Negative Index of Development

Year	Unweighted Development Index	%	Weighted Development Index	%
1970	36 (out of 64)	56.25	35 (out of 64)	54.69
1980	34 (out of 64)	53.13	33 (out of 64)	51.56

It is interesting to note that the weighted index of development for both 1970 and 1980 also indicate that for these two time periods there are more comparative districts with negative development indices (see Tables 4.18 and 4.19). In summary, it can be stated that over the period the majority of the comparative districts remained below the average development performance. Even when development performance is examined for the districts without

combining certain of the districts concerned, the number of districts with negative development indices still exceed those with positive development indices. The indices of development for districts in 1970 and 1980 (in Tables 4.20 and 4.21) and the summary in Table 4.22 illustrate this point.

Table 4.23 shows how the various component states in Peninsular Malaysia performed in development as gauged by the composite index of development. In comparing this table with Tables 4.2 and 4.10, which show the development indices for the various comparative districts in 1970 and 1980, respectively, it can be seen that the analysis of development performance at the district scale not only provides more information regarding the pattern of spatial development but also shows that there is relatively greater variation and disparity of spatial development compared to the state scale of analysis. More important is that the comparison of these tables demonstrates the fact that the use of the state scale of analysis does not truly reveal the range of variations and the distribution of spatial inequality within them. For example, although the state of Selangor shows high positive development indices in 1970, only 3 districts in that state actually have positive development indices. Similarly, although the states of Kelantan and Kedah have the lowest development indices among the states in Peninsular Malaysia, it can be seen that the districts of Kota Bharu (in Kelantan) and the combined districts of Kota Setar and Pendang (in Kedah) have relatively better development indices than those districts which register negative development indices in Selangor. Hence, examination of the level of development at the

Table 4.20

1970 Districts, Peninsular Malaysia: Index of
Development (Unweighted) and Ranking

Rank	District	Devt. Index (Positive)	Rank	District	Devt. Index (Negative)
1)	Kuala Lumpur	62.17	30)	Batu Pahat	-0.23
2)	Pulau Pinang		31)	Kota Setar	-0.50
	Timur Laut	49.50	32)	Rembau	-1.28
3)	Kuantan	28.73	33)	S. Perai Selatan	-1.39
4)	Johor Bahru	28.41	34)	Hilir Perak	-1.46
5)	Melaka Tengah	28.30	35)	Melaka Utara	-1.53
6)	Kinta	28.15	36)	Segamat	-1.66
7)	Seremban	23.30	37)	Kemaman	-1.88
8)	Klang	22.42	38)	Kulim	-2.24
9)	Ulu Langat	12.98	39)	Sabak Bernam	-2.94
10)	S. Perai Tengah	11.93	40)	Temerloh	-3.04
11)	S. Perai Utara	11.90	41)	Kuala Muda	-3.12
12)	Mersing	10.47	42)	Kuala Langat	-3.39
13)	Tampin	9.38	43)	Raub	-3.87
14)	Kota Bahru	8.73	44)	Melaka Selatan	-4.04
15)	Cameron Highland	7.61	45)	Perlis	-4.10
16)	Pulau Pinang		46)	Dinding	-4.19
	Barat Daya	7.24	47)	Pontian	-4.44
17)	Port Dickson	6.27	48)	Kota Tinggi	-5.09
18)	Bentong	6.23	49)	Hulu Perak	-7.11
19)	Ulu Selangor	5.85	50)	Kuala Selangor	-8.92
20)	Keluang	5.17	51)	Marang	-9.00
21)	Dungun	5.06	52)	Lipis	-9.17
22)	Pekan	4.91	53)	Jerantut	-9.30
23)	Jelevu	3.21	54)	Langkawi	-11.89
24)	Larut & Matang	3.03	55)	Yan	-12.92
25)	Batang Padang	2.51	56)	Tumpat	-13.08
26)	Kuala Pilah	2.24	57)	Bachok	-14.08
27)	Kuala Kangsar	1.70	58)	Besut	-14.42
28)	Muar	1.00	59)	Bandar Bahru	-14.94
29)	Kuala Terengganu	0.83	60)	Pasir Mas	-15.03
			61)	Kerian	-16.31
			62)	Machang	-16.42
			63)	Pasir Puteh	-16.85
			64)	Baling	-20.96
			65)	Ulu Terengganu	-21.52
			66)	Kubang Pasu	-22.12
			67)	Sik	-22.48
			68)	Tanah Merah	-23.40
			69)	Ulu Kelantan	-23.53
			70)	Padang Terap	-25.34

Standard Deviation = 16.03

Table 4.21
1980 Districts, Peninsular Malaysia:
Index of Development (Unweighted) and Ranking

Rank	District	Devt. Index (Positive)	Rank	District	Devt. Index (Negative)
1)	Petaling	47.55	35)	Kuala Langat	-0.13
2)	Kuala Lumpur	43.41	36)	Muar	-0.17
3)	Pulau Pinang		37)	S. Perai Selatan	-0.27
	Timur Laut	33.97	38)	Pontian	-0.37
4)	Gombak	27.43	39)	Kulim	-0.42
5)	Kuantan	24.71	40)	Batu Pahat	-0.55
6)	Johor Bahru	23.57	41)	Kuala Kangsar	-1.21
7)	Seremban	23.47	42)	Keluang	-2.34
8)	Melaka Tengah	23.02	43)	Batang Padang	-3.05
9)	Klang	22.01	44)	Hulu Perak	-3.42
10)	Ulu Langat	19.04	45)	Ulu Selangor	-3.54
11)	Kinta	16.08	46)	Sepang	-4.59
12)	S. Perai Tengah	13.20	47)	Hilir Perak	-4.83
13)	Dungun	13.13	47)	Marang	-4.83
14)	Kota Bahru	13.08	49)	Segamat	-5.23
15)	S. Perai Utara	12.92	50)	Jerantut	-5.34
16)	Kuala Pilah	12.52	51)	Kota Tinggi	-6.57
17)	Kuala Terengganu	12.29	52)	Kuala Selangor	-7.02
18)	Pulau Pinang		53)	Langkawi	-7.09
	Barat Daya	12.12	54)	C. Highland	-7.26
19)	Mersing	10.75	55)	Temerloh	-7.45
20)	Rembau	6.85	56)	Bandar Bahru	-8.22
21)	Tampin	6.67	57)	Manjung	-9.05
22)	Pekan	5.83	58)	Lipis	-10.44
23)	Kota Setar	5.37	59)	Jempol	-10.51
24)	Larut & Matang	4.48	60)	Rompin	-12.08
25)	Port Dickson	4.13	61)	Sabak Bernam	-12.47
26)	Jelebu	3.60	62)	Machang	-12.86
27)	Bentong	2.80	63)	Yan	-14.57
28)	Melaka Utara	1.24	64)	Besut	-14.68
29)	Kemaman	1.17	65)	Pasir Puteh	-14.97
30)	Melaka Selatan	1.06	66)	Tumpat	-15.07
31)	Kuala Muda	0.67	67)	Kubang Pasu	-15.37
32)	Perak Tengah	0.55	68)	Ulu Terengganu	-15.72
33)	Perlis	0.36	69)	Kerian	-15.87
34)	Raub	0.02	70)	Pasir Mas	-16.28

Table 4.21 (continued)

71)	Tanah Merah	-18.07
72)	Bachok	-18.77
73)	Kuala Krai	-19.72
74)	Padang Terap	-20.68
75)	Baling	-21.02
76)	Sik	-24.28
77)	Pendang	-25.28
78)	Ulu Kelantan	-27.43

Standard Deviation = 15.16

Table 4.22
 Non-Comparative Districts: Number of Districts With
 Positive And Negative Indices of Development

Year	Positive Devt. Index		Negative Devt. Index		Districts Total
	Unweighted	Weighted	Unweighted	Weighted	
1970	29 (41.43)	30 (42.86)	41 (58.57)	40 (57.14)	70
1980	34 (43.59)	38 (48.72)	44 (56.41)	40 (51.28)	78

Table 4.23
Comparative States: Composite Index of Development
(Unweighted), 1970 and 1980

Rank	State	1970 Devt.Index	Rank	State	1980 Devt.Index
1.	Selangor	36.23	1)	Selangor & W.P.*	32.02
2.	Pulau Pinang	27.10	2)	Pulau Pinang	19.90
3.	Malacca	6.82	3)	Malacca	10.56
4.	Negri Sembilan	5.91	4)	Negri Sembilan	8.23
5.	Johore	1.26	5)	Johore	-1.64
6.	Perak	1.14	6)	Perak	-4.53
7.	Pahang	-1.24	7)	Terengganu	-5.95
8.	Perlis	-13.44	8)	Pahang	-6.67
9.	Terengganu	-16.66	9)	Perlis	-7.40
10.	Kedah	-22.29	10)	Kedah	-22.18
11.	Kelantan	-22.82	11)	Kelantan	-22.35
Std.Deviation		18.35	Std. Deviation		15.81

Note: * The Federal Territory of Kuala Lumpur has been combined with the state of Selangor for comparative purpose.

dist

diff

anal

deve

as f

stat

dis

spa

sca

dev

of

dis

of

de

30

di

di

dis

per

it

the

this

dist

district scale provides more realistic picture of the spatial differences in development performance than the state scale of analysis. It should, therefore, provide better guidance for development of policy and planning measures to redress inequality.

Differences in the index of development for the districts as well as for the states using comparative and non-comparative districts and states indicate that variations in spatial development exist among the districts and states. This supports the hypothesis that disparities in spatial development exist at both the district as well as the state scales of observations.

Another distinctive feature derived from comparing 1970 and 1980 development indices of the comparative districts is the fact that most of the districts with positive development indices are western districts. In 1970, western districts comprised 75 percent (or 21 out of 28 districts) of all the comparative districts with positive development indices. In 1980, they make up 77 percent (or 23 out of 30 districts). For both 1970 and 1980, there are only 7 eastern districts with positive development indices. In 1970, eastern districts accounted for only 25 percent of all the comparative districts with positive development indices, while in 1980 the percentage declined to 23 percent (see Table 4.24).

In comparing western and eastern districts with negative indices, it is appropriate to use their proportions; since in absolute numbers there are more western than eastern districts in 1970 and 1980. In this regard, it is found that a large proportion of the eastern districts have below average development performance as compared to

the western districts. It can be seen in Table 4.25, for both 1970 and 1980, that 68 percent of all the eastern districts register negative development indices. However, a decline is observed for western districts as the percentage of districts with negative development indices decreased from 50 to 45 percent.

The weighted development indices for 1970 and 1980 also show that the western districts have relatively better development performance than the eastern districts. Whereas the proportion of the western districts with positive indices increase from 52 to 60 percent the proportion of the eastern districts decline from 32 to 27 percent. Table 4.25 shows the number and proportion of western and eastern districts with below average development performance. In sum, data for unweighted and weighted development indices for 1970 and 1980 show consistently that western districts fare better than eastern districts. This, therefore, supports the hypothesis that districts in the west coast states of Peninsular Malaysia have shown relatively better development performance over time than districts in the east coast states.

Another pattern emerging from the comparison of 1970 and 1980 development indices of the comparative districts is the difference of development performance between urban and the rural districts. The indices of development produced for 1970 and 1980 clearly indicate that the urban districts fare better than the rural districts. This can be seen in Table 4.26, where in 1970 the urban districts comprise

Table 4.24
1970 and 1980 Comparative Districts: Western and Eastern
Districts With Positive Development Index

Geographical Location	1970 Devt. Index		1980 Devt. Index	
	Unwtd.	Wtd.	Unwtd.	Wtd.
Western Districts (42)				
Number With Positive Development Index	21	22	23	25
As Percentage of Western Districts	50 %	52.38 %	54.76 %	59.52 %
As Percentage of Total Districts With Positive Index	75 %	75.86 %	76.67%	80.65 %
Eastern Districts (22)				
Number With Positive Development Index	7	7	7	6
As Percentage of Eastern Districts	31.82 %	31.82 %	31.82 %	27.27 %
As Percentage of Total Districts With Positive Index	25 %	24.14 %	23.33	19.35 %
Total	28	29	30	31

Table 4.25
1970 and 1980 Comparative Districts: Western and Eastern
Districts With Negative Development Index

Geographical Location	1970 Devt. Index		1980 Devt. Index	
	Unwtd.	Wtd.	Unwtd.	Wtd.
Western Districts (42)				
Number With Negative Development Index	21	20	19	17
As Percentage of Western Districts	50 %	47.62 %	45.24 %	40.48 %
As Percentage of Total Districts With Negative Index	58.33 %	57.14 %	55.88 %	51.52 %
Eastern Districts (22)				
Number With Negative Development Index	15	15	15	16
As Percentage of Eastern Districts	68.18 %	68.18 %	68.18 %	72.73 %
As Percentage of Total Districts With Negative Index	41.67 %	42.86 %	44.12 %	48.48 %
Total	36	35	34	33

Table 4.26
1970 and 1980 Comparative Districts: Urban and Rural
Districts With Positive Development Index

Geographical Location	1970 Devt. Index		1980 Devt. Index	
	Unwtd.	Wtd.	Unwtd.	Wtd.
Urban Districts	20	20	26	26

Number With Positive Development Index	18	18	19	20
As Percentage of Urban Districts	90 %	90 %	73.08 %	76.92 %
As Percentage of Total Districts With Positive Index	64.29 %	62.07 %	63.33 %	64.52 %
Rural Districts	44	44	38	38

Number With Positive Development Index	10	11	11	11
As Percentage of Rural Districts	22.73 %	25 %	28.95 %	28.95 %
As Percentage of Total Districts With Positive Index	35.71 %	37.93 %	36.67 %	35.48 %
Total	28	29	30	31

18 out of the 28 districts (or 64 percent) with positive development. Similarly, in 1980 they comprise 19 out of the 30 (or 63 percent).

In 1970, 18 out of the 20 urban districts (or 90 percent) register positive indices. In 1980, the proportion of urban districts with positive development index declined to 73 percent; this being due not only to the increase in the number of urban districts, but also because of the increase in the number of urban districts experiencing below average development performance. However, those urban districts that register below average development have development indices that were closer to zero as compared to those rural districts with negative indices. In 1970, the two urban districts with negative development indices are (1) the combined districts of Dindings, Kuala Kangsar and Perak Hilir (-0.03), and (2) Kuala Muda (-2.64). The 7 urban districts with below average development performance in 1980 are: (1) Muar (-0.03), (2) Batu Pahat (-0.16), (3) Pontian (-0.39), (4) Kota Setar and Pendang (-1.19), (5) Kluang (-2.49), (6) Manjung, Kuala Kangsar, Perak Hilir and Perak Tengah (-4.50), and (7) Segamat (-5.28). In terms of the ranking, the same urban districts occupy the top positions amongst the group of districts with below average development performance (see Tables 4.2 and 4.10).

In the case of rural districts, it can be concluded that most of them are characterized by having negative development indices for both 1970 and 1980 (see Table 4.27).

Examination of the weighted development index for both 1970 and 1980 also disclose results that show that there are more urban districts with positive development indices than the rural districts.

In 1970, urban districts comprise 62 percent of all districts with positive development and in 1980 they make up 65 percent. As can be seen in Table 4.27, the weighted development index shows that rural district account for larger percentage of districts with negative development indices; making up 94 percent in 1970 and 82 percent in 1980. Thus, the data for unweighted and weighted development indices indicate consistently that urban districts have better development performance than rural districts. The hypothesis that regional development problem is more acute for the rural rather than the urban districts is therefore supported by the data analysed.

Among the urban districts, those which have large urban centers are found to have relatively better development performance than those with smaller urban centers. This suggests that large urban centers exert strong influence upon the overall development performance of the districts in which they are located. (Appendices 9 and 10 list the name of places in Peninsular Malaysia that have a population 10,000 and more). Tables 4.20 and 4.21 show that districts which locate the large urban centers of Kuala Lumpur (Kuala Lumpur), Petaling Jaya (Petaling), Georgetown (Pulau Pinang Timur Laut), Ipoh (Kinta), Seremban (Seremban), Malacca (Melaka Tengah), Johore Bahru (Johore Bahru), Kuantan (Kuantan), Kuala Terengganu (Kuala Terengganu), Kota Bharu (Kota Bharu), Alor Setar (Kota Setar) and Taiping (Larut & Matang) have relatively high positive development indices. The hypothesis that the more urbanized districts tend to have better development than the less urbanized districts is, therefore, endorsed by the data analysed.

Table 4.27
1970 and 1980 Comparative Districts: Urban and Rural
Districts With Negative Development Index

Geographical Location	1970 Devt. Index		1980 Devt. Index	
	Unwtd.	Wtd.	Unwtd.	Wtd.
Urban Districts	20	20	26	26

Number With Negative Development Index	2	2	7	6
As Percentage of Urban Districts	10 %	10 %	26.92 %	23.08 %
As Percentage of Total Districts With Negative Index	5.56 %	5.71 %	20.59 %	18.18 %
Rural Districts	44	44	38	38

Number With Negative Development Index	34	33	27	27
As Percentage of Rural Districts	77.27 %	75 %	71.05 %	71.05 %
As Percentage of Total Districts With Negative Index	94.44 %	94.29 %	79.41 %	81.82 %
Total	36	35	34	34

Table 4.28
Distribution of Districts According to Performance
of Index of Development for 1970 and 1980

Had Positive Devt. Index for 1970 and 1980	Had Negative Devt. Index for 1970 and 1980	Index Changed from Negative in 1970 to Positive Devt Index 1980	Index Changed from Positive in 1970 to Negative Devt Index 1980
1) Johore Bahru	1) Kota Tinggi	1) Kuala Muda	1) B.Pahat
2) Mersing	2) Pontian	2) Kulim	2) Kluang
3) Kota Bahru	3) Segamat	3) Melaka Utara	3) Muar
4) Melaka Tengah	4) Baling	4) Melaka Selatan	4) K.Setar & Pendang
5) Jelebu	5) Bandar Bahru	5) Rembau	5) C.Highland
6) Kuala Pilah	6) Kubang Pasu	6) Raub	6) Pekan & Rompin
7) Port Dickson	7) Langkawi	7) S.P. Selatan	7) B.Padang
8) Seremban	8) Padang Terap	8) Perlis	
9) Tampin	9) Sik	9) Kemaman	
10) Bentong	10) Yan		
11) Kuantan	11) Bachok		
12) S.P.Utara	12) Machang		
13) S.P.Tengah	13) Pasir Mas		
14) P.P.T. Laut	14) Pasir Puteh		
15) P.P.B.Daya	15) Tanah Merah		
16) Kinta	16) Tumpat		
17) Larut & Mtg	17) Ulu Kelantan & Kuala Krai		
18) K.Langat, U.Langat & Sepang	18) Manjung, Kuala Kangsar, Perak Hilir & Perak Tengah		
19) Gombak, Klang, Petaling, U.S'gor, K.Lumpur	19) Hulu Perak 20) Kerian 21) Jerantut 22) Lipis 23) Temerloh 24) Kuala Selangor & Sabak Bernam		
20) Dungun	25) Besut		
21) K.Trengganu	26) Marang & 27) Ulu Terengganu		

Table 4.28 lists the district performance in development in 1970 and 1980. It shows that those districts which consistently have negative development indices for 1970 and 1980 still outnumber those that consistently register positive development indices. Most of the rural districts and districts in the east coast states are in the group of districts that consistently have below average development

performance. On the other hand, most of the urban districts consistently have positive development indices for 1970 and 1980. Also, a large percentage of districts in the west coast states consistently have above average development.

Gaps in Spatial Development

It can be seen from Tables 4.2 and 4.10 that the index of development for each region has changed. It is observed that the index of development for the most developed comparative district in 1980 (Gombak/Klang/Petaling/Ulu Selangor/Kuala Lumpur) is lower than the highest index of development for 1970 (for Klang/Ulu Selangor/Kuala Lumpur); 47 in 1980 and 53 in 1970. With the exception of a few districts, such as Kota Bahru and Kuala Terengganu, most of the other districts have witnessed a slight decline in their indices of development in 1980 as compared to 1970. This is due to the development process between 1970 and 1980, resulting in an increase in the mean of most of the development variables used to compute the z-scores.

A comparison of the region's index of development for 1970 and 1980 will not truly indicate whether it is moving towards convergence or divergence in its level of development; since the computational base for deriving the index of development for 1970 and 1980 are different. To ascertain whether the districts are moving towards convergence or divergence in their level of development, the relative difference in their index of development will be compared to the most

developed district. The value obtained for 1970 and 1980 will be compared to see whether the district's gap with the most developed district has increased or decreased. A value closer to zero indicates that the district is almost at the same level of development as the most developed district. When the value is farther away from zero it means that the district in question is moving towards divergence in its relative level of development when compared with the most developed district. Table 4.29 shows the relative gaps for all the districts when compared with the most developed district in 1970 and 1980, respectively.

Based on the difference between the 1970 and 1980 development gaps obtained for all the districts (Table 4.29), it is found that overall most of the districts have experienced some degree of reduction in their relative gap with the most developed district. Only the districts of Kluang, Cameron Highland, Pekan and Rompin, Pulau Pinang Timur Laut, Batang Padang, and Kinta have gained an increase in their relative distance to the most developed district in 1980. However, in most cases the difference between the relative gaps for 1970 and 1980 are not large enough to conclude that the change in the level of development for the districts in 1980 are significantly towards convergence.

Table 4.29
Comparative Districts, Peninsular Malaysia:
Relative Gap in Development Performance With
The Most Developed District, 1970 and 1980.

Districts	Gap in 1970	Gap in 1980	Difference Between 1980 and 1970 Gap	Rank
JOHORE STATE				
1) Batu Pahat	-52.37	-47.32	+5.05	35
2) Johor Bahru	-22.85	-21.09	+1.76	52
3) Kluang	-46.69	-49.65	-2.96	60
4) Kota Tinggi	-57.23	-53.95	+3.28	45
5) Mersing	-41.51	-35.71	+5.80	32
6) Muar	-51.27	-47.19	+4.08	41
7) Pontian	-56.82	-47.55	+9.27	16
8) Segamat	-53.76	-52.44	+1.32	53
KEDAH STATE				
9) Baling	-73.67	-69.34	+4.33	40
10) Bandar Bahru	-67.48	-55.81	+11.67	7
11) Kota Setar & Pendang	-52.80	-48.35	+4.45	39
12) Kuala Muda	-55.51	-45.82	+9.69	13
13) Kubang Pasu	-74.76	-63.34	+11.42	9
14) Kulim	-54.71	-47.14	+7.57	26
15) Langkawi	-64.70	-54.15	+10.55	11
16) Padang Terap	-78.54	-69.45	+9.09	17
17) Sik	-75.16	-73.12	+2.04	51
18) Yan	-65.37	-62.37	+3.00	46
KELANTAN STATE				
19) Bachok	-67.25	-67.03	+0.22	57
20) Kota Bahru	-43.85	-31.69	+12.16	5
21) Machang	-69.56	-60.69	+8.87	19
22) Pasir Mas	-68.28	-63.79	+4.49	38
23) Pasir Puteh	-69.97	-62.86	+7.11	29
24) Tanah Merah	-76.56	-66.32	+10.24	12
25) Tumpat	-66.22	-62.70	+3.52	43
26) Ulu Kelantan & K.Krai	-76.49	-69.70	+6.79	30
MALACCA STATE				
27) Melaka Utara	-53.78	-45.59	+8.19	24
28) Melaka Selatan	-56.58	-45.90	+10.68	10
29) Melaka Tengah	-23.52	-21.06	+2.46	49
NEGRI SEMBILAN STATE				
30) Jelebu	-48.90	-43.35	+5.55	34
31) Kuala Pilah & Jempol	-49.79	-44.18	+5.61	33
32) Port Dickson	-45.57	-42.26	+3.31	44
33) Rembau	-53.48	-39.62	+13.86	2
34) Seremban	-28.23	-20.89	+7.34	27
35) Tampin	-42.58	-39.61	+2.97	47

Table 4.29 (continued)

PAHANG STATE				
36) Bentong	-46.13	-43.88	+2.25	50
37) Cameron Highland	-44.00	-54.55	-10.55	64
38) Jerantut	-61.42	-52.51	+8.91	18
39) Kuantan	-22.27	-19.76	+2.51	48
40) Lipis	-62.45	-57.55	+3.90	42
41) Pekan and Rompin	-46.68	-48.40	-1.72	59
42) Raub	-55.98	-46.55	+9.43	15
43) Temerloh	-55.13	-54.52	+0.61	55
PULAU PINANG STATE				
44) S.Perai Utara	-40.11	-32.48	+7.63	25
45) S.Perai Tengah	-40.33	-31.73	+8.60	23
46) S.Perai Selatan	-54.22	-46.99	+7.23	28
47) P.Pinang Timur Laut	-2.47	-8.82	-6.35	63
48) P.Pinang Barat Daya	-45.15	-33.35	+11.80	6
PERAK STATE				
49) Batang Padang	-49.50	-49.88	-0.38	58
50) Manjung(Dindings)/K.K., Hilir Pk. & Pk.Tgh.	-52.90	-51.66	+1.24	54
51) Kinta	-23.77	-29.47	-5.70	61
52) Krian	-68.81	-63.85	+4.96	37
53) Larut & Matang	-49.04	-42.27	+6.77	31
54) Hulu Perak	-59.19	-50.44	+8.75	22
PERLIS STATE				
55) Perlis	-54.61	-45.80	+8.81	21
SELANGOR STATE & W.P.				
56) K. S'gor & S. Bernam	-57.77	-57.26	+0.51	56
57) K.Lgt., U.Lgt. & Sepang	-47.98	-34.68	+13.30	4
58) Gombak, Klang, Petaling, U.S'gor & Kuala Lumpur	-	-	(-5.71)	62
TERENGGANU STATE				
59) Besut	-67.41	-62.42	+4.99	36
60) Dungun	-47.35	-33.99	+13.36	3
61) Kemaman	-54.30	-45.45	+8.85	20
62) Kuala Terengganu	-51.83	-33.68	+18.15	1
63) Marang	-61.95	-52.47	+9.48	14
64) Ulu Terengganu	-74.30	-62.82	+11.48	8

Note:

A + (positive) value for the difference between the 1980 development gap and the 1970 development gap means a gain in reduction of the gap; so that the gap becomes smaller than previously experienced. Conversely, a negative value indicates an increase in the development gap for that unit of observation.

Changes Over Time

Examination of the range of the differences between the highest and lowest development indices (unweighted) indicates that it is 79 for 1970 and 73 for 1980. It is also observed that the standard deviation for the comparative districts is slightly smaller for 1980 (14.94) than for 1970 (16.18). As stated earlier, comparison between 1970 and 1980 development gap for the districts (Table 4.29) also tends to indicate that there is change in spatial development in 1980.

To determine whether the changes in development that occurred for the districts between 1970 and 1980 are significant or not, a test of significance was done. The test of significance was for the difference in the mean of the 30 z-scores for each district between that for 1970 and 1980. The test was not done for the difference in the index of development for each district between that for 1970 and 1980 because the index of development for 1970 and 1980 were derived from different computational base. At the significance level of 0.05 it was found that none of the districts had t-value large enough to reject the hypothesis of no change. It means that z-scores for each district in 1970 are not significantly different from those in 1980. Similarly, the Spearman rank correlation coefficient of 0.91 (significant at 0.05) computed for the districts' ranking in 1970 and 1980 (Table 4.30) shows that the pattern of ranking is basically the same. This means that the ranking for the districts in 1980, as determined by their indices of development, did not differ

Table 4.30
 Ranking of Comparative Districts, Peninsular Malaysia,
 1970 and 1980 (According to Development Index)

District	Development Index		District	Development Index	
	----- 1970	1980		----- 1970	1980
JOHORE STATE			PAHANG STATE		
1) Batu Pahat	27+	32	36) Bentong	16+	21+
2) Johor Bahru	4+	6+	37) Cameron Highland	13+	46
3) Keluang	18+	36	38) Jerantut	45	42
4) Kota Tinggi	42	43	39) Kuantan	3+	3+
5) Mersing	10+	15+	40) Lipis	46	49
6) Muar	25+	31	41) Pekan & Rpn.	17+	35
7) Pontian	41	33	42) Raub	38	28+
8) Segamat	31	40	43) Temerloh	36	45
KEDAH STATE			PENANG STATE		
9) Baling	58	61	44) S.P. Utara	8+	10+
10) Bandar Bahru	53	47	45) S.P. Tengah	9+	9+
11) Kota Setar/Pdg	28+	34	46) S.P. Selatan	33	29
12) Kuala Muda	37	26+	47) P.P. T. Laut	2+	2+
13) Kubang Pasu	60	56	48) P.P. Barat Daya	14+	11+
14) Kulim	35	30+	PERAK STATE		
15) Langkawi	48	44	49) Batang Padang	23+	37
16) Padang Terap	64	62	50) Dindings/Kuala Kangsar/Perak Hilir *	29	39
17) Sik	61	64	51) Kinta	6+	7+
18) Yan	49	51	52) Kerian	55	58
KELANTAN STATE			53) Larut & Matang	22+	19+
19) Bachok	51	60	54) Ulu Perak	44	38
20) Kota Bahru	12+	8+	PERLIS STATE		
21) Machang	56	50	55) Perlis	39	25+
22) Pasir Mas	54	57	SELANGOR STATE		
23) Pasir Puteh	57	55	56) Kuala Selangor/Sabak Bernam *	43	48
24) Tanah Merah	63	59	57) Kuala Langat/Ulu Langat *	20+	14+
25) Tumpat	50	53	58) Klang/Ulu S'gor/Kuala Lumpur *	1+	1+
26) U.Ktan & K.K.	62	63	TRENGGANU STATE		
MELAKA STATE			59) Besut	52	52
27) Melaka Utara	32	24+	60) Dungun	19+	13+
28) Melaka Selatan	40	27+	61) Kemaman	34	23+
29) Melaka Tengah	5+	5+	62) Kuala Trengganu	26+	12+
NEGRI SEMBILAN STATE			63) Marang	47	41
30) Jelebu	21+	20+	64) Ulu Trengganu	59	54
31) K.Pilah & Jpl	24+	22+			
32) Port Dickson	15+	18+			
33) Rembau	30	17+			
34) Seremban	7+	4+			
35) Tampin	11+	16+			

Note: * districts that have been combined to facilitate comparison
 + ranking of districts with positive index of development

significantly from those that occurred in 1970. Thus, the level of development for the districts in 1980 have, basically, remained unchanged (as compared to that for 1970).

Magnitude of Spatial Inequality

The composite index of development indicates how the unit of observation in question performs on all the selected development indicators. It does not, however, indicate their distribution among the set of the units in question, nor the extent of benefits which a particular unit of observation has for a particular development variable. To accomplish this, two other techniques are used here, Gini coefficients and Location Quotients.

Gini coefficients are used to determine how a particular development variable is distributed among the districts. The values of Gini coefficients range between zero and 1.0 or 100 percent (zero for perfect equality and 1.0 or 100 percent for perfect inequality). The Lorenz curve provides graphical illustration of spatial inequality. The Gini coefficient is related to the Lorenz curve in that the coefficient is defined by the ratio of the area between the Lorenz Curve and the line of equality by the area of the triangle below this line. The greater the departure of the Lorenz curve from the diagonal, the larger would be the value of the Gini coefficient, hence the higher the magnitude of spatial inequality. A larger Gini value also denotes that a particular development variable is concentrated in a few of the units of observation (districts or states in this case).

Tables 4.35 and 4.36 contain the Gini coefficients of the 30 selected development variables for six different regional units in 1970 and 1980. The units used are: states, administrative districts, urban administrative districts, rural administrative districts, western districts, and eastern districts.

The Location Quotient (LQ) helps in the construction of the Gini coefficient. It is used to indicate the extent of departure of regional development performance from a reference value (in this case the performance for the total regions in question). An LQ of zero indicates that the region receives absolutely no benefits from the development variable in question. An LQ of 1.0 means that according to the distribution of a particular development variable, the region's benefits are proportional to those for the entire region. Any region with LQ of more than 1.0 according to a particular development variable connotes that it has more than its proportional share of benefits. However, for variables which the negative sign indicates positive direction of development, an LQ of zero is preferred since it means that the region has absolutely no development problem as indicated by that variable. Conversely, an LQ of more than 1.0 indicates that the region has more than its proportional share of the problem.

Tables 4.31 and 4.32 show the LQ of the 30 selected development variables for the comparative districts in 1970 and 1980. It can be observed that very few districts have proportional share of development benefits (or disbenefits for development variables which the negative sign indicates positive direction of development). Large number of districts have LQ of less than 1.0 for most of the development

variables. However, districts which have relatively large urban centers (such as Johor Bahru, Kota Bahru, Melaka Tengah, Seremban, Kuantan, Pulau Pinang Timur Laut, Kinta, Kuala Terengganu, and the combined districts of Gombak/Klang/Petaling/Ulu Selangor/Kuala Lumpur) have more than their proportional share of development benefits for most of the development variables (Tables 4.33 and 4.34). This is perhaps one of the plausible explanations for their high level of development in 1970 and 1980 (Tables 4.2 and 4.10).

Spatial Inequality: States and Districts. A comparison of the Gini coefficients for the 30 development variables produced for the states and the districts shows that, overall, the states have smaller Gini values than those for the districts on all the development variables. As can be seen in Tables 4.35 and 4.36, for both 1970 and 1980 the district scale of analysis register relatively larger Gini coefficients on all the development indicators as compared to those for the states. The aggregation process probably accounts for smaller variability in the Gini coefficients of the state units. The Gini coefficients for the state scale of analysis range from a low of 4 percent (Teachers) to a high of 42 percent (Agricultural Extension Service) in 1970 and from a low of 3 percent (Teachers) to a high of 55 percent (Agricultural Extension Service) in 1980. On the other hand, the Gini values for the district scale of analysis range from a low of 6 percent (Formal Schooling) to a high of 76 percent (Agricultural Extension Service) in 1970 and from a low of 5 percent (Housing Stock) to a high of 82 percent (Agricultural Extension Service) in 1980. The

average for all the 1970 and 1980 Gini values for the state scale of analysis are also comparatively smaller than those for the districts. While at the state scale of analysis the mean Gini coefficient is 20 percent in 1970 and 18 percent in 1980, at the district scale it is equal to 30 percent for 1970 and 26 percent for 1980. Table 4.37 shows the frequency distribution of the Gini coefficients and the mean Gini values for state and district scales in 1970 and 1980.

The fact that all the development variables at the district scale of analysis registered relatively larger Gini coefficients than those at the state scale clearly suggests that there is relatively greater variations and disparities in the distribution of the development variables among the districts than the states. The analysis also indicates that the magnitude of the problem of spatial distribution of development is relatively more acute at the district level. This analysis of Gini coefficients substantiates the hypothesis posed that spatial inequality in development is relatively more acute at the district rather than at the state level. The fact that the analysis at the state scale produced Gini values smaller than those for the districts points out that the aggregation process towards a larger geographical unit tends to conceal the extent of inequality. Thus it may not realistically reflect the true conditions of the inequality problem of a smaller unit.

Table 4.31
Location Quotients for Comparative Districts:
Performance of Variables By Districts, 1970

Variables	Number of Districts With Location Quotient			
	0	<1.0	1.0	>1.0
1) Population Literacy	0	38	3	23
2) Formal Schooling	0	36	4	24
3) Teachers	0	44	1	19
4) Infant Mortality	0	31	1	32
5) Maternal Mortality	6	27	0	31
6) Housing Stock	0	20	3	41
7) Flush Toilets	0	52	0	12
8) Piped-Water	0	40	2	22
9) Electricity	0	47	0	17
10) Public Security	1	30	0	33
11) Fire Service	4	36	0	24
12) Road Density	0	21	0	43
13) Postal Service	0	50	0	14
14) Professional and Technical Manpower	0	51	0	13
15) Administrative and Managerial Manpower	0	55	1	8
16) Government Officials	0	52	0	12
17) Manufacturing Sector	0	52	0	12
18) Commercial Sector	0	48	2	14
19) Gross Domestic Product	0	50	1	13
20) Rural Telephone Booths	0	32	0	32
21) Agricultural Extension Service	41	8	0	15
22) Urban Population	34	16	0	14
23) Large Urban Centers	44	9	0	11
24) Female Literacy	0	38	0	26
25) Female In Non-Agric. Economic Activities	0	47	0	17
26) Above Poverty Line	0	52	0	12
27) Public Low-Cost Housing	10	43	0	11
28) Malays in Agriculture	0	16	0	48
29) Malays in Manufacturing	0	29	0	35
30) Malays in Commerce	0	22	1	41

Table 4.32
Location Quotients for Comparative Districts:
Performance of Variables By Districts, 1980

Variables	Number of Districts With Location Quotient			
	0	<1.0	1.0	>1.0
1) Population Literacy	0	40	4	20
2) Formal Schooling	0	37	7	20
3) Teachers	0	39	1	24
4) Infant Mortality	0	33	1	30
5) Maternal Mortality	8	24	0	32
6) Housing Stock	0	27	2	35
7) Flush Toilets	0	37	1	26
8) Piped-Water	0	32	0	32
9) Electricity	0	40	0	24
10) Public Security	0	37	1	26
11) Fire Service	4	34	0	26
12) Road Density	0	24	0	40
13) Postal Service	0	51	0	13
14) Professional and Technical Manpower	0	53	0	11
15) Administrative and Managerial Manpower	0	57	0	7
16) Government Officials	0	53	1	10
17) Manufacturing Sector	0	50	0	14
18) Commercial Sector	0	50	3	11
19) Gross Domestic Product	0	50	0	14
20) Rural Telephone Booths	0	29	2	33
21) Agricultural Extension Service	40	10	0	14
22) Urban Population	28	24	0	12
23) Large Urban Centers	38	13	0	13
24) Female Literacy	0	46	2	16
25) Female In Non-Agric. Economic Activities	0	48	0	16
26) Above Poverty Line	0	54	0	10
27) Public Low-Cost Housing	3	43	0	18
28) Malays in Agriculture	0	15	1	48
29) Malays in Manufacturing	0	19	0	45
30) Malays in Commerce	0	26	0	38

Table 4.33
Location Quotients for Comparative Districts:
Performance of Districts By Variables, 1970

Districts	Number of Variables With Location Quotient			
	0	<1.0	1.0	>1.0
1) Batu Pahat	0	22	0	8
2) Johor Bahru	1	3	0	26
3) Keluang	1	19	1	9
4) Kota Tinggi	3	18	0	9
5) Mersing	3	12	0	15
6) Muar	0	20	0	10
7) Pontian	3	22	0	5
8) Segamat	2	20	1	7
9) Baling	3	20	1	6
10) Bandar Bahru	4	20	0	6
11) Kota Setar/Pendang *	0	21	1	8
12) Kuala Muda	1	23	1	8
13) Kubang Pasu	2	23	1	5
14) Kulim	2	22	1	5
15) Langkawi	4	19	0	7
16) Padang Terap	5	18	0	7
17) Sik	4	19	0	7
18) Yan	3	20	0	7
19) Bachok	4	19	0	7
20) Kota Bahru	0	14	0	16
21) Machang	4	18	0	8
22) Pasir Mas	3	21	0	6
23) Pasir Puteh	4	20	0	6
24) Tanah Merah	3	20	0	7
25) Tumpat	3	18	0	9
26) Ulu Kelantan/K.Krai *	4	19	0	7
27) Melaka Utara	2	15	2	11
28) Melaka Selatan	3	18	0	9
29) Melaka Tengah	0	5	0	25
30) Jelebu	3	17	0	10
31) Kuala Pilah/Jempol *	2	14	0	14
32) Port Dickson	3	18	0	9
33) Rembau	4	16	0	10
34) Seremban	1	7	0	22
35) Tampin	3	11	0	16
36) Bentong	1	18	0	11
37) Cameron Highland	4	15	0	11
38) Jerantut	3	18	0	9

Districts	Number of Variables With Location Quotient			
	0	<1.0	1.0	>1.0
39) Kuantan	0	6	0	24
40) Lipis	3	20	3	7
41) Pekan/Rompin *	1	17	0	12
42) Raub	3	17	3	7
43) Temerloh	1	20	1	9
44) Seberang Perai Utara	0	13	1	16
45) Seberang Perai Tengah	0	17	0	13
46) Seberang Perai Selatan	3	20	1	6
47) Pulau Pinang Timur Laut	1	7	1	21
48) Pulau Pinang Barat Daya	4	12	1	13
49) Batang Padang	2	17	1	10
50) Manjung/Kuala Kangsar/ P.Hilir/P.Tengah *	0	23	1	6
51) Kinta	1	10	0	19
52) Krian	3	20	1	6
53) Larut & Matang	1	16	0	13
54) Ulu Perak	3	17	0	10
55) Perlis	2	18	0	10
56) Kuala Selangor/ Sabak Bernam *	2	19	0	9
57) Kuala Langat/Ulu Langat/Sepang *	0	22	1	7
58) Gombak/Klang/Petaling/ Ulu Selangor/ Kuala Lumpur *	0	7	0	23
59) Besut	3	21	0	6
60) Dungun	2	17	0	11
61) Kemaman	2	18	0	10
62) Kuala Terengganu	1	16	0	13
63) Marang	5	16	0	9
64) Ulu Terengganu	2	21	0	7

Note: * Districts which have been combined to facilitate comparison.

Table 4.34
Location Quotient for Comparative Districts:
Performance of Districts By Variables, 1980

Districts	Number of Variables With Location Quotient			
	0	<1.0	1.0	>1.0
1) Batu Pahat	0	23	1	6
2) Johor Bahru	1	9	1	19
3) Keluang	1	19	1	9
4) Kota Tinggi	2	20	0	8
5) Mersing	2	16	0	12
6) Muar	0	22	1	8
7) Pontian	2	22	0	6
8) Segamat	1	19	3	7
9) Baling	3	20	0	7
10) Bandar Bahru	5	18	1	6
11) Kota Setar/Pendang *	0	22	0	8
12) Kuala Muda	1	20	0	9
13) Kubang Pasu	1	24	0	5
14) Kulim	1	20	1	2
15) Langkawi	3	17	1	9
16) Padang Terap	4	20	0	6
17) Sik	3	20	0	7
18) Yan	3	20	0	7
19) Bachok	3	22	0	5
20) Kota Bahru	0	13	0	17
21) Machang	3	20	0	7
22) Pasir Mas	3	18	0	9
23) Pasir Puteh	3	20	0	7
24) Tanah Merah	2	20	0	8
25) Tumpat	4	19	0	7
26) Ulu Kelantan/K.Krai *	3	21	0	6
27) Melaka Utara	2	15	1	12
28) Melaka Selatan	4	14	1	11
29) Melaka Tengah	0	8	0	22
30) Jelebu	3	13	1	13
31) Kuala Pilah/Jempol *	2	18	0	10
32) Port Dickson	2	19	1	8
33) Rembau	4	12	0	14
34) Seremban	1	6	0	23
35) Tampin	3	14	0	13
36) Bentong	1	16	2	11
37) Cameron Highland	3	19	0	8
38) Jerantut	3	16	0	11
39) Kuantan	0	6	0	24
40) Lipis	2	18	0	10
41) Pekan/Rompin *	2	20	0	8
42) Raub	1	18	1	10

4
4
4
4
4
4
4
4
4
4
5

Table 4.34 (continued)

Districts	Number of Variables With Location Quotient			
	0	<1.0	1.0	>1.0
43) Temerloh	1	17	0	12
44) Seberang Perai Utara	0	14	1	15
45) Seberang Perai Tengah	0	17	0	13
46) Seberang Perai Selatan	3	18	2	7
47) Pulau Pinang Timur Laut	1	7	0	22
48) Pulau Pinang Barat Daya	3	14	0	13
49) Batang Padang	2	22	0	6
50) Manjung/Kuala Kangsar/ P.Hilir/P.Tengah *	0	22	1	7
51) Kinta	1	10	0	19
52) Krian	3	19	1	7
53) Larut & Matang	1	13	2	14
54) Ulu Perak	3	19	0	8
55) Perlis	1	18	0	11
56) Kuala Selangor/ Sabak Bernam *	2	21	0	7
57) Kuala Langat/Ulu Langat/Sepang *	0	14	0	16
58) Gombak/Klang/Petaling/ Ulu Selangor/ Kuala Lumpur *	0	9	0	21
59) Besut	3	19	0	8
60) Dungun	0	17	0	13
61) Kemaman	2	20	1	7
62) Kuala Terengganu	1	12	0	17
63) Marang	5	17	0	8
64) Ulu Terengganu	2	19	0	9

Note: * Districts which have been combined to facilitate comparison.

Table 4.35
Gini Coefficients At State, District, Urban District,
Rural District, Western District, and Eastern
District Scales of Analysis, 1970.

Variables *	States	All Dists.	Urban Dists.	Rural Dists.	West. Dists.	East. Dists.
1. Population Literacy	5.33	6.55	4.87	7.89	4.47	9.32
2. Formal Schooling	4.98	6.18	4.18	6.74	4.17	7.33
3. Teachers	4.48	10.25	8.49	9.25	8.85	14.61
4. Infant Mortality	10.52	13.43	12.03	14.27	10.80	9.93
5. Maternal Mortality	22.43	36.51	33.56	32.99	35.42	31.50
6. Housing Stock	5.84	7.27	5.68	6.32	5.93	4.49
7. Flush Toilets	31.23	41.77	32.54	38.75	37.31	46.92
8. Piped-Water Supply	22.49	28.09	18.94	35.10	19.79	43.49
9. Electricity	24.16	33.40	21.56	35.66	29.33	32.77
10. Public Security	9.53	18.26	15.38	22.09	17.78	19.56
11. Fire Service	16.20	30.87	24.95	39.21	28.17	39.59
12. Road Density	33.07	47.48	30.92	49.41	39.73	44.61
13. Postal Service	19.97	29.12	24.39	22.45	27.82	26.98
14. Professional and Technical Manpower	13.54	20.96	13.75	14.86	19.49	20.01
15. Administrative and Managerial Manpower	25.82	38.14	28.79	24.89	36.88	32.61
16. Government Officials	23.31	37.00	33.92	22.99	39.20	18.79
17. Gross Domestic Product	22.28	26.06	25.26	17.51	24.66	20.66
18. Manufacturing Sector	22.77	36.50	24.33	32.18	36.24	34.14
19. Commercial Sector	15.66	24.29	17.91	14.15	23.69	19.70
20. Rural Telephone Booths	13.11	23.35	15.56	29.13	18.12	39.12
21. Agricultural Extension Service	41.81	76.12	57.85	89.16	68.55	88.57
22. Urban Population	27.33	50.45	28.96	79.52	48.15	52.74
23. Large Urban Centers	32.93	55.62	30.21	100.00	51.13	70.19
24. Female Literacy	6.01	7.47	4.56	11.37	5.34	10.11
25. Female in Non-Agric. Economic Activities	21.05	29.99	22.60	21.26	29.06	28.02
26. Above Poverty Line	13.69	20.97	15.11	13.04	20.38	17.50
27. Public Low-Cost Housing	38.32	50.44	40.54	53.21	44.07	53.08
28. Malays in Agriculture	16.15	22.45	31.80	8.20	26.12	12.58
29. Malays in Manufacturing	33.58	39.08	34.10	32.71	24.31	18.62
30. Malays in Commerce	34.08	40.74	36.35	31.35	29.58	19.15
Average	20.38	30.29	23.30	30.52	27.15	29.56

* Details regarding operationalization and sources of variables are as outlined in Table 3.1 and Appendix 1.

Table 4.36
Gini Coefficients At State, District, Urban District,
Rural District, Western District, and Eastern
District Scales of Analysis, 1980.

Variables *	States	All Dists.	Urban Dists.	Rural Dists.	West. Dists.	East. Dists.
1. Population Literacy	4.26	5.20	3.75	6.20	4.03	7.03
2. Formal Schooling	4.04	4.69	3.13	5.53	3.10	5.96
3. Teachers	2.66	9.44	8.62	8.62	8.98	11.05
4. Infant Mortality	8.56	13.97	14.58	12.11	12.53	13.51
5. Maternal Mortality	30.65	39.22	36.21	34.70	35.66	25.32
6. Housing Stock	3.75	4.43	3.15	4.20	3.84	3.14
7. Flush Toilets	11.89	14.30	11.07	17.26	12.79	16.50
8. Piped-Water Supply	15.81	18.49	12.04	27.87	11.37	34.04
9. Electricity	11.91	16.73	9.35	22.64	13.92	19.63
10. Public Security	20.91	25.98	22.85	30.07	23.13	30.33
11. Fire Service	12.02	20.38	15.45	30.58	19.12	24.45
12. Road Density	33.68	47.37	36.17	48.40	41.17	41.31
13. Postal Service	16.32	25.18	21.25	20.39	24.18	26.44
14. Professional and Technical Manpower	10.73	16.87	12.42	10.72	15.76	18.44
15. Administrative and Managerial Manpower	33.69	45.26	35.80	22.22	42.98	37.82
16. Government Officials	22.93	33.37	32.03	19.36	34.70	21.71
17. Gross Domestic product	20.50	22.85	20.89	16.88	21.76	20.69
18. Manufacturing Sector	23.40	30.88	21.19	33.40	28.39	25.18
19. Commercial Sector	13.91	21.47	16.10	11.34	20.16	21.30
20. Rural Telephone Booths	15.31	24.99	20.67	29.47	20.97	36.53
21. Agricultural Extension Service	54.76	82.14	76.29	86.00	68.74	92.20
22. Urban Population	21.68	45.44	27.45	73.96	42.20	55.61
23. Large Urban Centers	23.86	49.12	28.02	100.00	44.92	64.09
24. Female Literacy	5.08	6.26	4.73	6.54	5.27	7.55
25. Female in Non-Agric. Economic Activities	18.67	25.74	17.94	22.44	23.61	26.32
26. Above Poverty Line	12.25	17.92	14.74	9.09	17.34	30.23
27. Public Low-Cost Housing	27.11	41.48	36.03	48.89	35.85	43.27
28. Malays in Agriculture	19.57	29.29	35.77	9.58	33.67	17.04
29. Malays in Manufacturing	16.23	20.76	18.08	16.17	16.13	12.99
30. Malays in Commerce	24.59	29.30	25.11	23.34	20.51	16.61
Average	18.02	26.28	21.36	26.93	23.56	26.88

* Details regarding operationalization and sources of variables are as outlined in Table 3.1 and Appendix 1.

Table 4.37
Frequency Distribution of Gini Coefficients
for State and District Scale of Analysis, 1970 and 1980

Gini Values (%)	S T A T E		D I S T R I C T	
	-----	-----	-----	-----
	1970	1980	1970	1980
0 to 9.99	6	6	4	5
10 to 19.99	8	12	3	6
20 to 29.99	9	8	9	10
30 to 39.99	6	3	7	3
40 to 49.99	1	0	3	5
50 to 59.99	0	1	3	0
60 to 69.99	0	0	0	0
70 to 79.99	0	0	1	0
80 to 89.99	0	0	0	1
90 to 100	0	0	0	0
Total	30	30	30	30
Average	20.38	18.02	30.29	26.28

In comparing with the other regional units, the Gini coefficients at the state scale are found to be relatively smaller for most of the development variables. This means that the magnitude of spatial inequality is relatively less acute at the state scale as compared to other regional units. Table 4.38 indicates this.

Figures 4.6 to 4.9 are graphical illustrations of the distribution of piped-water supply and agricultural extension service for states and districts in 1970 and 1980.

Spatial Inequality: Urban and Rural Districts. In comparing the distribution of the 30 development variables between urban and rural districts, it is found that the rural districts have more development variables with relatively higher Gini coefficients than those for the

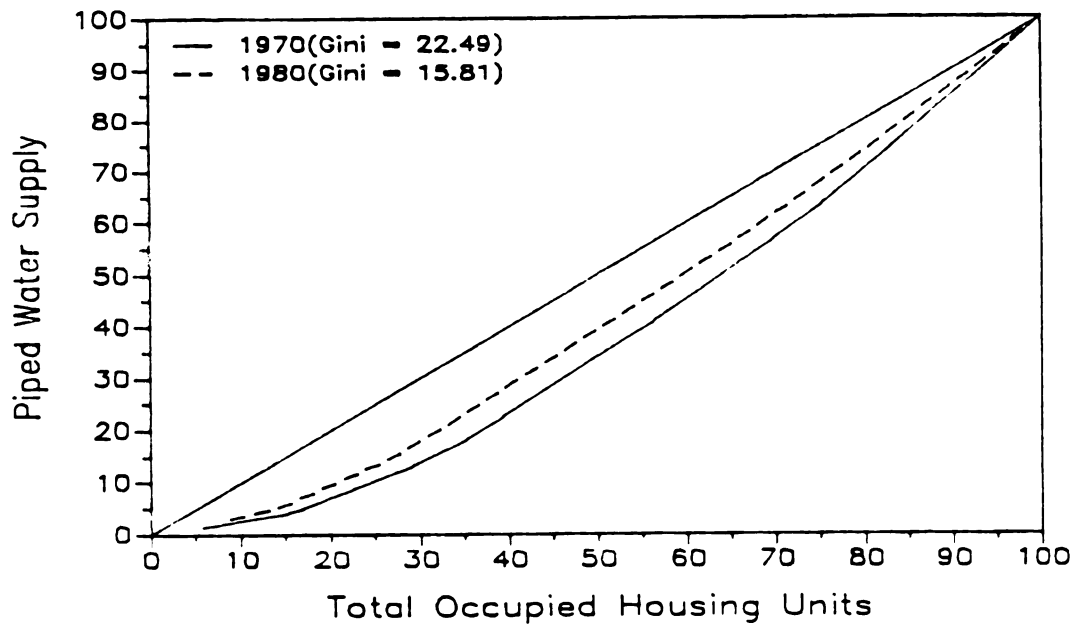


Figure 4.6: Distribution of Piped Water Supply in States, Peninsular Malaysia, 1970 and 1980

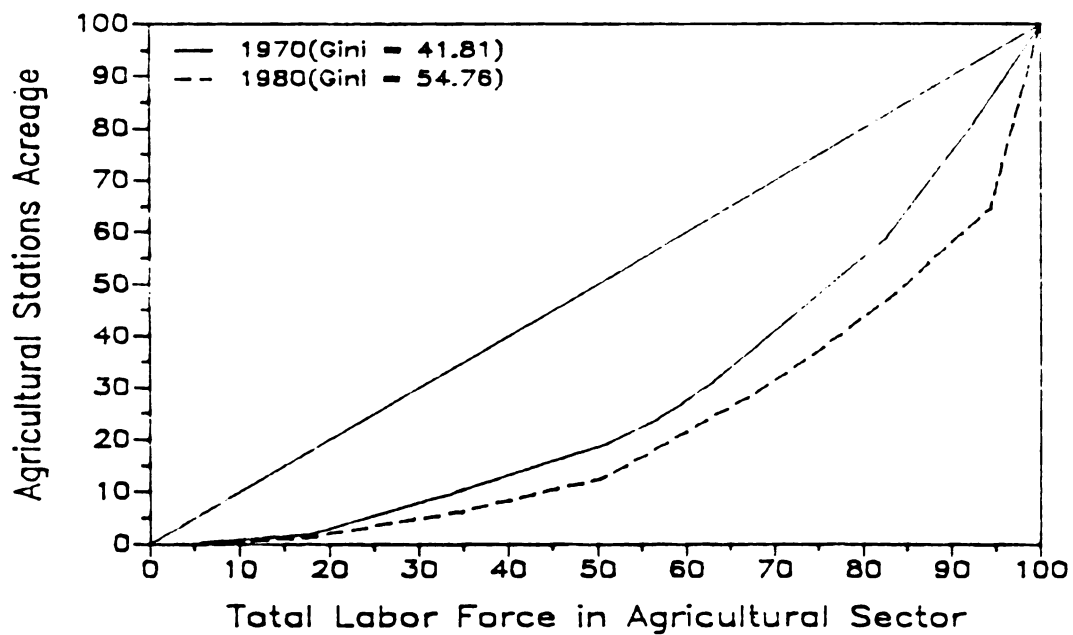


Figure 4.7: Distribution of Agricultural Extension Service in States, Peninsular Malaysia, 1970 and 1980

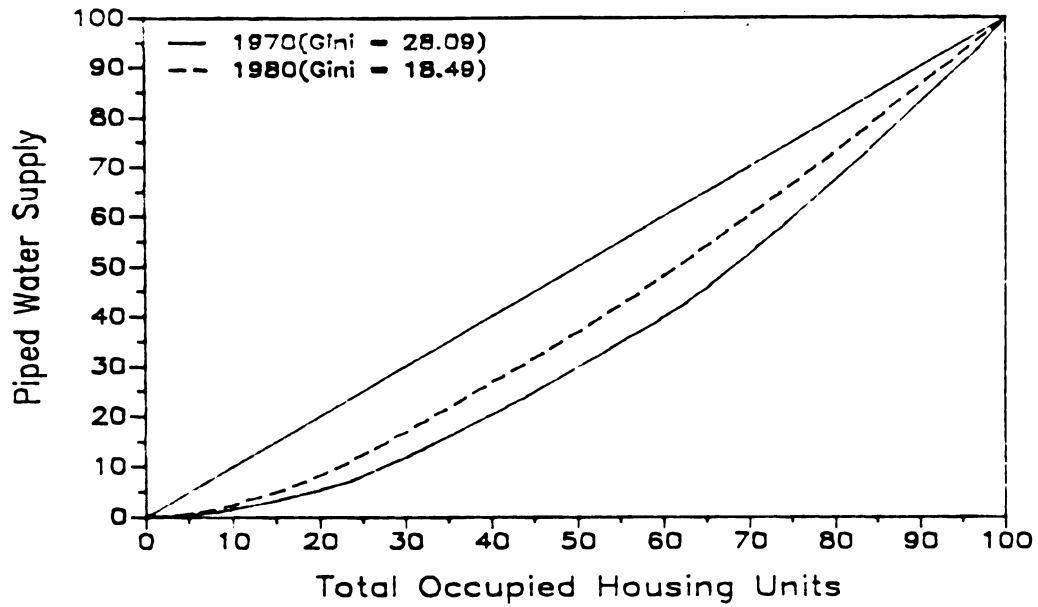


Figure 4.8: Distribution of Piped Water Supply in Districts, Peninsular Malaysia, 1970 and 1980

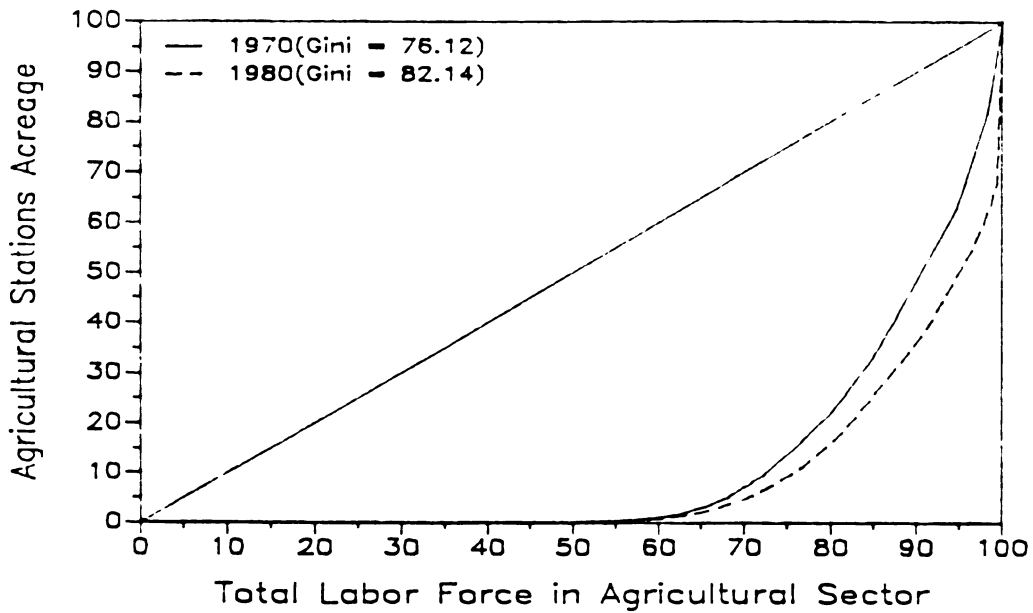


Figure 4.9: Distribution of Agricultural Extension Service in Districts, Peninsular Malaysia, 1970 and 1980

Table 4.38
Comparison of Gini Coefficients at State Scale of Analysis
With Other Regional Units, 1970 and 1980

	All Districts	Urban Districts	Rural Districts	Western Districts	Eastern Districts
Number of Devt. Variables Which the State-Scale Has Smaller Gini Values, 1970	30	22	22	24	23
Number of Devt. Variables Which the State-Scale Has Smaller Gini Values, 1980	30	21	21	25	24

urban districts. For instance, In 1970 nineteen variables have higher Gini coefficients than corresponding variables for the urban districts. This figure slightly decline in 1980, from 19 to 17. Table 4.39 shows the frequency distribution of the Gini coefficients for the urban and rural districts in 1970 and 1980. Similarly, the mean Gini coefficient of all 30 variables for rural districts is again higher than for the urban districts, both in 1970 and 1980 (Table 4.40).

In comparing with Gini coefficients for districts as a whole, it is found that urban districts have smaller Gini coefficients for almost all the development variables; 28 in 1970 and 29 in 1980. Rural districts, however, did not fare as well as the urban districts. In 1970 and 1980 rural districts have 15 development variables with Gini coefficients that are higher than corresponding variables for the districts taken together. This further supports the contention that disaggregation of data is more useful for analysis regional inequalities.

Table 4.39
Frequency Distribution of Gini Coefficients
for Urban District and Rural Districts,
1970 and 1980

Gini Values (%)	U R B A N		R U R A L	
	1970	1980	1970	1980
0 to 9.99	5	6	5	7
10 to 19.99	7	9	6	7
20 to 29.99	8	8	6	7
30 to 39.99	8	6	8	4
40 to 49.99	1	0	1	2
50 to 59.99	1	0	1	0
60 to 69.99	0	0	0	0
70 to 79.99	0	1	1	1
80 to 89.99	0	1	1	1
90 to 100	0	0	1	1
Total	30	30	30	30
Average	23.30	21.36	30.52	26.93

Table 4.40
Mean for The 30 Gini Coefficients, 1970 and 1980

Scale of Analysis	Mean Gini, 1970	Mean Gini, 1980
States	20.38	18.02
All Districts	30.29	26.28
Urban Districts	23.30	21.36
Rural Districts	30.52	26.93
Western Districts	27.15	23.56
Eastern Districts	29.56	26.88

Figures 4.10 to 4.13 show the distribution of piped-water supply and agricultural extension service for urban and rural districts in 1970 and 1980.

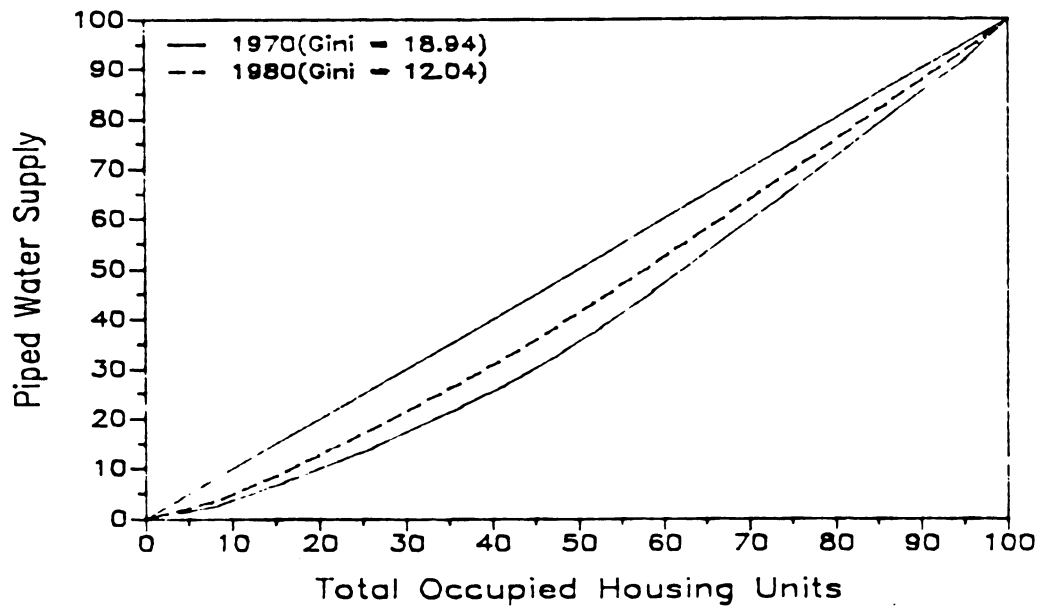


Figure 4.10: Distribution of Piped Water Supply in Urban Districts, Peninsular Malaysia, 1970 and 1980

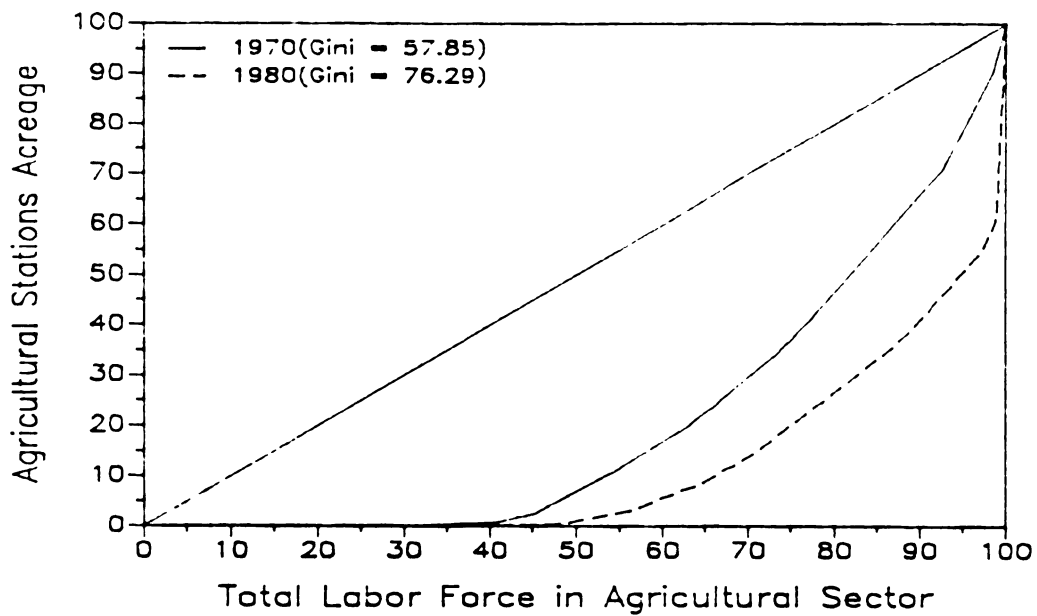


Figure 4.11: Distribution of Agricultural Extension Service in Urban Districts, Peninsular Malaysia, 1970 and 1980

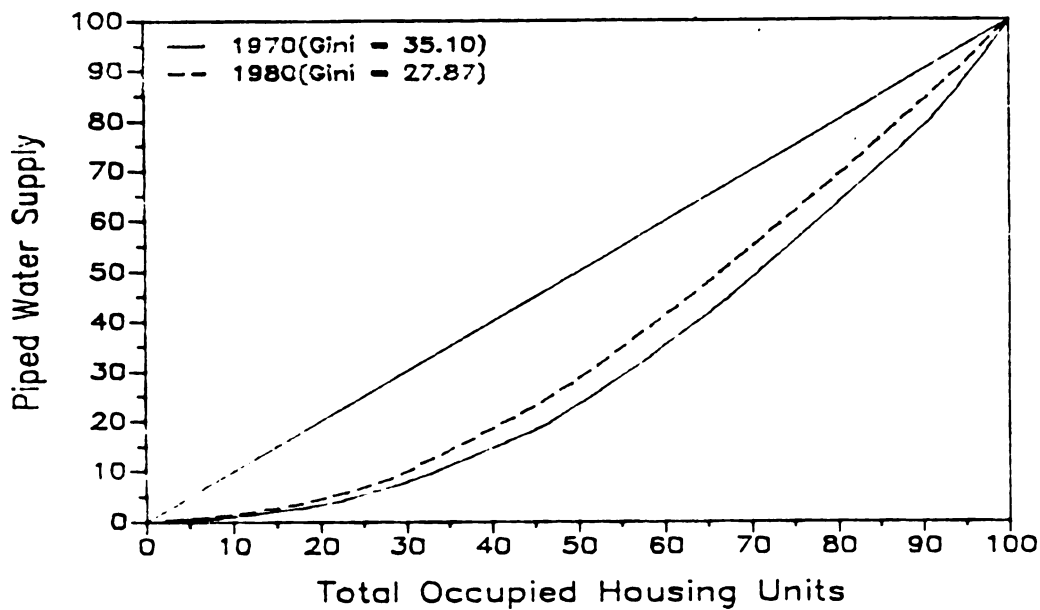


Figure 4.12: Distribution of Piped Water Supply in Rural Districts, Peninsular Malaysia, 1970 and 1980

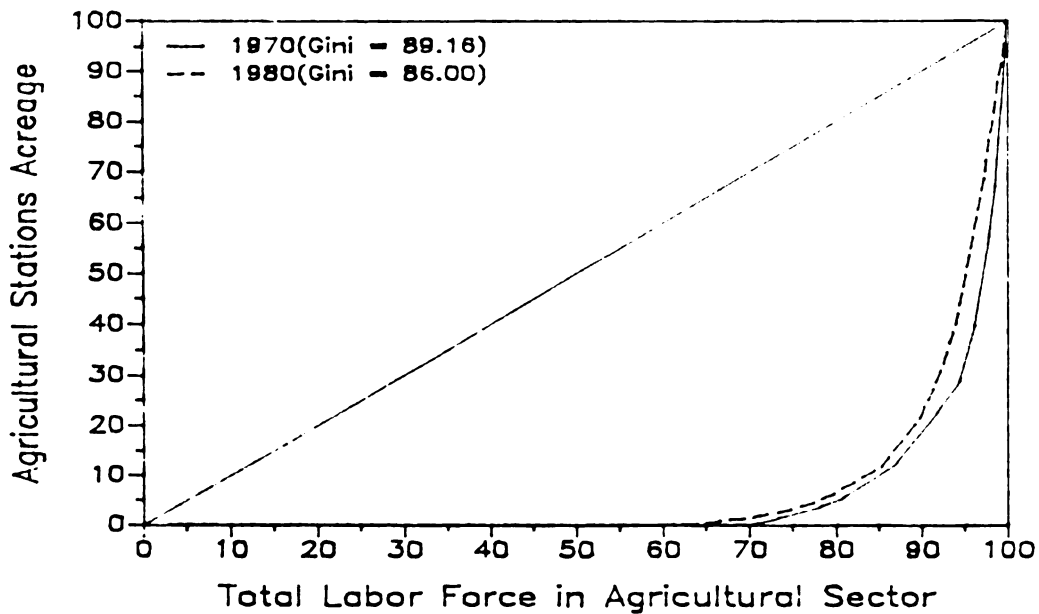


Figure 4.13: Distribution of Agricultural Extension Service in Rural Districts, Peninsular Malaysia, 1970 and 1980

In examining the Location Quotient it is found that large proportion of urban districts have more than their proportional share of development benefits for most of the development variables (Tables 4.33 and 4.34). On the other hand, most of the rural districts have LQs less than 1.0 on most of the development variables.

Spatial Inequality: Western and Eastern Districts. The categorization of Gini coefficients between western and eastern districts indicate the existence of a wide variation in spatial inequality when the two regional groups are compared. It is observed that for 1970 and 1980 the eastern districts have larger number of development variables with higher Gini values than corresponding variables for the western districts. In 1970 seventeen development variables for the eastern districts have higher Gini coefficients than for western districts. In 1980 this number increased to 21 (Tables 4.35 and 4.36). The frequency distribution of the Gini coefficients for western and eastern districts is shown in Table 4.41. As can be seen in Table 4.40, the mean Gini coefficient for the all the 30 Gini coefficients also shows that the eastern districts have higher mean Gini values than that for the western districts, both for 1970 and 1980.

As can be seen from Tables 4.35 and 4.36, most of the development variables for the western districts registered lower Gini coefficients than those recorded for all districts taken together. In 1970 and 1980, 28 variables for western districts have Gini values smaller than for all districts together. The eastern districts did not fare as well as the western districts. In 1970, 13 variables for eastern districts

have greater spatial inequality than that indicated by the districts as a whole. The magnitude of spatial inequality for eastern districts becomes worse in 1980 when 18 of the 30 development variables have higher Gini coefficients than those for districts as a whole.

Table 4.41
Frequency Distribution of Gini Coefficients
for Western District and Eastern Districts
1970 and 1980

Gini Values (%)	WESTERN DISTRICTS		EASTERN DISTRICTS	
	1970	1980	1970	1980
0 to 9.99	5	5	4	4
10 to 19.99	5	8	9	8
20 to 29.99	10	8	4	8
30 to 39.99	6	4	6	5
40 to 49.99	2	4	3	2
50 to 59.99	1	0	2	1
60 to 69.99	1	1	0	1
70 to 79.99	0	0	1	0
80 to 89.99	0	0	1	0
90 to 100	0	0	0	1
Total	30	30	30	30
Average	27.15	23.56	29.56	26.88

Figures 4.14 to 4.17 show the distribution of piped-water supply and agricultural extension service for western and eastern districts in 1970 and 1980.

The Location Quotients in Tables 4.33 and 4.34 indicate that the a large proportion of western districts have more than their proportional benefits of development as compared to those in the east coast states.

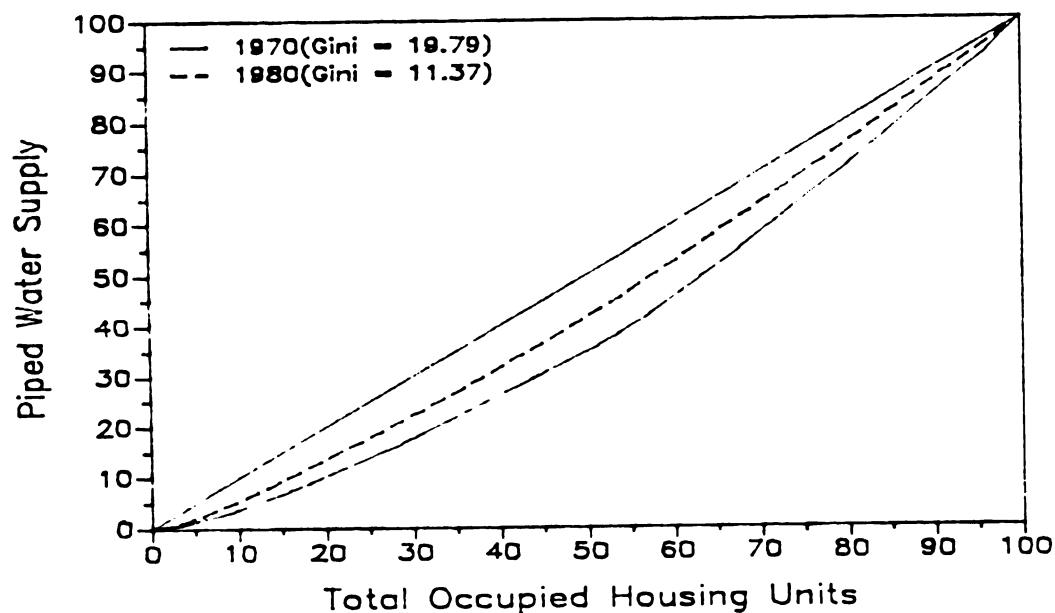


Figure 4.14: Distribution of Piped Water Supply in Western Districts, Peninsular Malaysia, 1970 and 1980

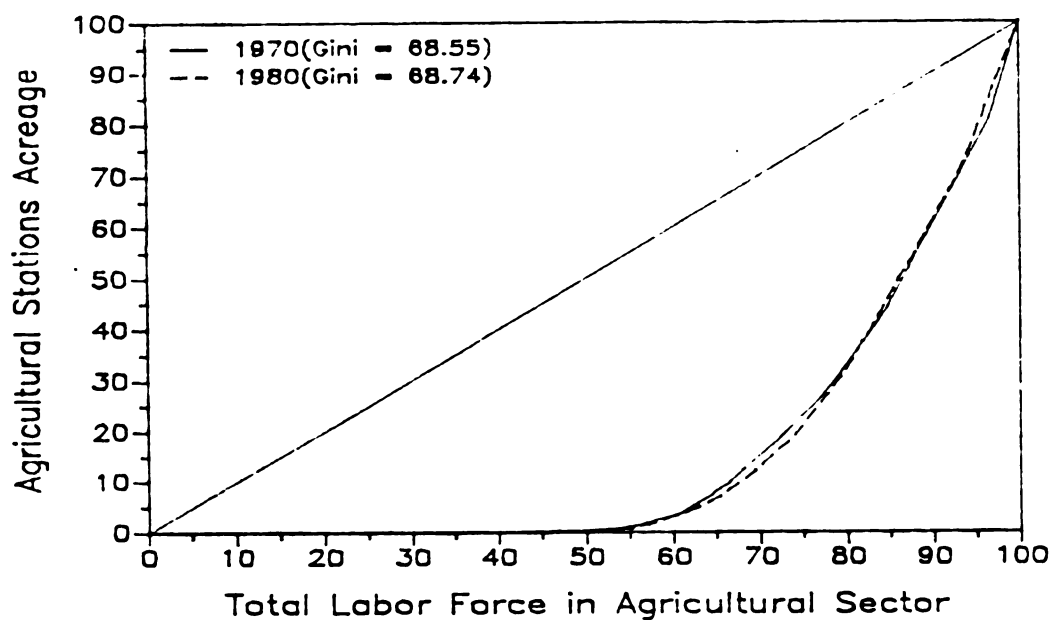


Figure 4.15: Distribution of Agricultural Extension Service in Western Districts, Peninsular Malaysia, 1970 and 1980

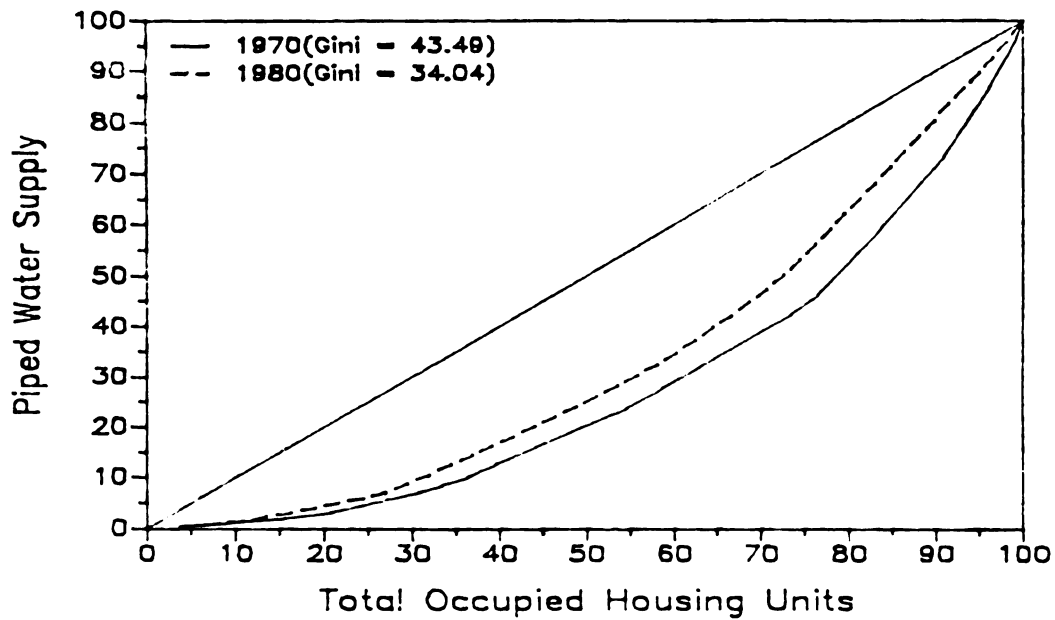


Figure 4.16: Distribution of Piped Water Supply in Eastern Districts, Peninsular Malaysia, 1970 and 1980

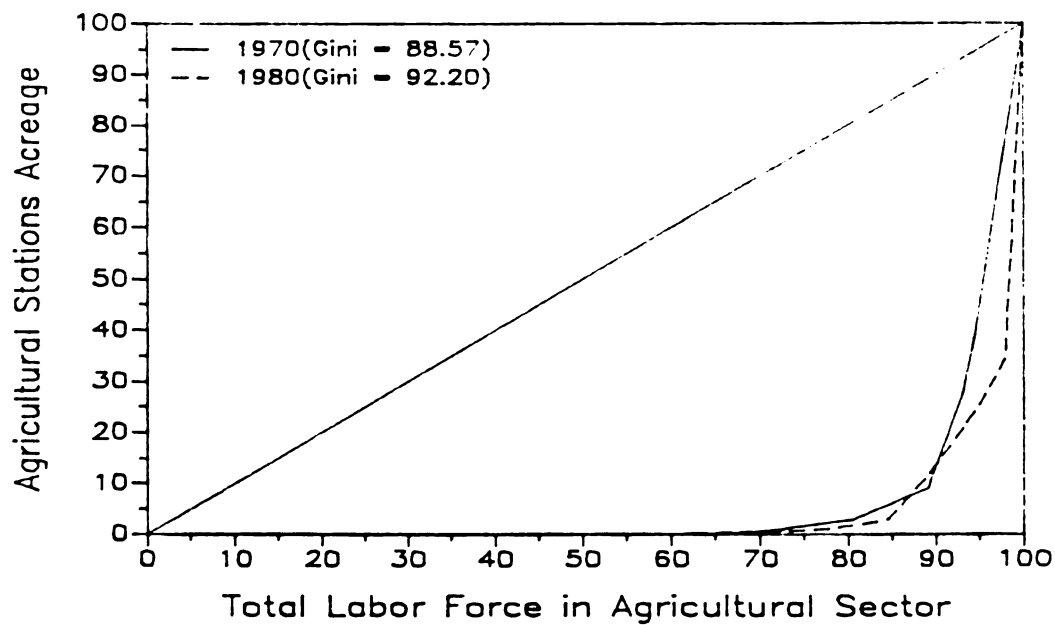


Figure 4.17: Distribution of Agricultural Extension Service in Eastern Districts, Peninsular Malaysia, 1970 and 1980

Gaps in Spatial Inequality

Differences that prevailed between the different regional units (states and districts, urban and rural districts, and western and eastern districts) also provide useful insights regarding the extent of spatial inequality. Gaps between the different regional units will be ascertained by dividing their Gini coefficients in the following manner:

- (1) Districts' by State's
- (2) Rural Districts' by Urban Districts'
- (3) Eastern Districts' by Western Districts'.

A Gini coefficient ratio close to unity (1) indicates that the regional units being compared are similar with regard to their spatial inequality. The larger the Gini Coefficient ratio, the greater is the departure in similarity of spatial inequality between the regional units in question. Tables 4.42 and 4.43 show the relative gap between the different regional units for 1970 and 1980, respectively.

Comparisons of these two tables will indicate the change in the Gini coefficient ratios between 1970 and 1980.

In comparing between the Gini coefficient ratios for state and district scales of analysis, it is found that for most of the variables the difference in their spatial inequality have been reduced (Table 4.44). This means that spatial inequality between state and district scale of analysis are almost similar on most variables in 1980 as compared to 1970.

Table 4.42
Gini Coefficient Ratios, 1970: Spatial Inequality Gaps Between State
and District Scales of Analysis, Urban Districts and Rural Districts,
and Western Districts and Eastern Districts

Variables	Gap Between Districts and States*	Gap Between Rural and Urban Dists.+	Gap Between Eastern and Western Dists@.
1) Population Literacy	1.23	1.62	2.08
2) Formal Schooling	1.24	1.61	1.76
3) Teachers	2.29	1.09	1.65
4) Infant Mortality	1.28	1.19	0.92
5) Maternal Mortality	1.63	0.98	0.89
6) Housing Stock	1.24	1.11	0.76
7) Flush Toilets	1.34	1.19	1.26
8) Piped-Water Supply	1.25	1.85	2.20
9) Electricity	1.38	1.65	1.12
10) Fire service	1.91	1.57	1.10
11) Public Security	1.92	1.44	1.41
12) Road Density	1.44	1.60	1.12
13) Postal Service	1.46	0.92	0.97
14) Professional and Technical Manpower	1.55	1.08	1.03
15) Administrative and Managerial Manpower	1.48	0.86	0.88
16) Government Officials	1.59	0.68	0.48
17) Gross Domestic Product	1.17	0.69	0.84
18) Manufacturing Sector	1.60	1.33	0.94
19) Commercial Sector	1.55	0.79	0.83
20) Rural Telephone Booths	1.78	1.87	2.16
21) Agricultural Extension Service	1.82	1.54	1.29
22) Urban Population	1.85	2.75	1.10
23) Large Urban Place	1.69	3.31	1.37
24) Female Literacy	1.24	2.49	1.89
25) Female In Non-Agricultural Economic Activities	1.42	0.94	0.96
26) Labor Force Above Poverty	1.53	0.86	0.86
27) Public Low-Cost Housing	1.32	1.31	1.20
28) Malays in Agriculture	1.39	0.26	0.48
29) Malays in Manufacturing	1.16	0.96	0.77
30) Malays in Commerce	1.20	0.86	0.65
Average	1.49	1.31	1.09

Note: * States' Gini Coefficient is the denominator
+ Urban Districts' Gini Coefficient is the denominator
@ Western Districts' Gini Coefficient is the denominator

Table 4.43
Gini Coefficient Ratios, 1970: Spatial Inequality Gaps Between State
and District Scales of Analysis, Urban Districts and Rural Districts,
and Western Districts and Eastern Districts

Variables	Gap Between Districts and States*	Gap Between Rural and Urban Dists.+	Gap Between Eastern and Western Dists@.
1) Population Literacy	1.22	1.65	1.74
2) Formal Schooling	1.16	1.77	1.92
3) Teachers	3.55	1.00	1.23
4) Infant Mortality	1.63	0.83	1.08
5) Maternal Mortality	1.28	0.96	0.71
6) Housing Stock	1.18	1.33	0.82
7) Flush Toilets	1.20	1.56	1.29
8) Piped-Water Supply	1.17	2.31	2.99
9) Electricity	1.40	2.42	1.41
10) Fire Service	1.70	1.98	1.38
11) Public Security	1.24	1.32	1.28
12) Road Density	1.41	1.34	1.00
13) Postal Service	1.54	1.06	1.09
14) Professional and Technical Manpower	1.57	0.86	1.17
15) Administrative and Managerial Manpower	1.34	0.62	0.88
16) Government Officials	1.46	0.60	0.63
17) Gross Domestic Product	1.11	0.81	0.95
18) Manufacturing Sector	1.32	1.58	0.89
19) Commercial Sector	1.54	0.70	1.06
20) Rural Telephone Booths	1.63	1.43	1.74
21) Agricultural Extension Service	1.50	1.13	1.34
22) Urban Population	2.10	2.69	1.32
23) Large Urban Place	2.06	3.57	1.43
24) Female Literacy	1.23	1.38	1.43
25) Female In Non-Agricultural Economic Activities	1.38	1.25	1.11
26) Labor Force Above Poverty	1.41	0.62	1.74
27) Public Low-Cost Housing	1.53	1.36	1.21
28) Malays in Agriculture	1.50	0.27	0.51
29) Malays in Manufacturing	1.28	0.89	0.81
30) Malays in Commerce	1.19	0.93	0.81
Average	1.46	1.26	1.14

Note: * States' Gini Coefficient is the denominator
+ Urban Districts' Gini Coefficient is the denominator
@ Western Districts' Gini Coefficient is the denominator

Table 4.44
Gini Coefficient Ratios -- Direction and Rate of Change
(Tables 4.34 and 4.35 Relevant)

Variables *	Dist/State	Rural/Urban	East/West
1. Population Literacy	-0.01	+0.03	-0.34
2. Formal Schooling	-0.08	+0.16	+0.16
3. Teachers	+1.26	-0.09	-0.42
4. Infant Mortality	+0.35	-0.02	0.00
5. Maternal Mortality	-0.35	+0.02	-0.18
6. Housing Stock	-0.06	+0.22	-0.18
7. Flush Toilets	-0.14	+0.37	+0.03
8. Piped-Water Supply	-0.08	+0.46	+0.79
9. Electricity	+0.02	+0.77	+0.29
10. Public Security	-0.68	-0.12	-0.13
11. Fire Service	-0.21	+0.41	+0.21
12. Road Density	-0.03	-0.26	-0.12
13. Postal Service	+0.08	-0.02	+0.06
14. Professional and Technical Manpower	+0.02	+0.06	+0.14
15. Administrative and Managerial Manpower	-0.14	+0.24	0.00
16. Government Officials	-0.13	+0.08	-0.15
17. Gross Domestic Product	-0.06	-0.12	-0.11
18. Manufacturing Sector	-0.28	+0.25	+0.05
19. Commercial Sector	-0.01	+0.09	-0.11
20. Rural Telephone Booths	-0.15	-0.44	-0.42
21. Agricultural Extension Service	-0.32	-0.41	+0.05
22. Urban Population	+0.25	-0.06	+0.22
23. Large Urban Place	+0.37	+0.26	+0.06
24. Female Literacy	-0.01	-1.11	-0.46
25. Female in Non-Agric. Economic Activities	-0.04	+0.19	+0.07
26. Above Poverty Line	-0.07	+0.24	+0.60
27. Public Low-Cost Housing	+0.22	+0.05	+0.01
28. Malays in Agriculture	+0.11	+0.01	-0.03
29. Malays in Manufacturing	+0.12	+0.07	+0.04
30. Malays in Commerce	-0.01	-0.07	+0.16

Note: * Details regarding operationalization and sources of variables are outlined in Table 3.1 and Appendix 1.

Negative values means a decrease rate of change in the Gini Coefficient ratio between the pair of observations concerned.

Between urban and rural districts, the Gini Coefficient ratios indicate an increase in their relative gap. This connotes that the Gini values for the urban districts have decreased at a relatively faster rate than that for the rural districts. The relatively smaller Gini Coefficients which urban districts register (Tables 4.35 and 4.36) as well as better Location Quotient performance which they have (Tables 4.33 and 4.34) clearly indicate that development variables are relatively better distributed within urban districts rather than rural districts. This enhances the hypothesis that spatial inequality in development are relatively more acute for rural rather than urban districts.

Comparing western and eastern districts, the Gini coefficient ratios indicate that for half of the development variables (15) their relative gaps have increased in 1980 as compared to 1970. The mean of the Gini coefficient ratios for 1970 and 1980 also indicate that the relative gap between western and eastern districts have increase rather than decreased (Tables 4.42 and 4.43).

Changes Over Time

Table 4.45 contains the Gini coefficient ratios that are derived by dividing the Gini coefficients recorded for 1980 by the corresponding Gini values for 1970. A ratio of unity (1) indicates no change from 1970 (status quo). On the other hand, a ratio of less than one can be treated as a measure of change in spatial inequality, towards the direction of reduction its magnitude. Conversely, a ratio

Table 4.45
 Ratios Between Gini Coefficients of 1970 and 1980:
 States, Districts, Urban Districts, Rural Districts,
 Western Districts, and Eastern Districts.

Variables*	States	All Dists.	Urban Dists.	Rural Dists.	Western Dists.	Eastern Dists.
1. Population Literacy	0.80	0.79	0.77	0.79	0.90	0.75
2. Schooling	0.81	0.76	0.75	0.82	0.74	0.81
3. Teachers	0.59	0.92	1.02	0.93	1.01	0.76
4. Infant Mortality	0.81	1.04	1.21	0.85	1.16	1.36
5. Maternal Mortality	1.37	1.07	1.08	1.05	1.01	0.80
6. Housing Stock	0.64	0.61	0.55	0.66	0.65	0.70
7. Flush Toilets	0.38	0.34	0.34	0.45	0.34	0.35
8. Piped-Water Supply	0.70	0.66	0.64	0.79	0.57	0.78
9. Electricity	0.49	0.50	0.43	0.63	0.47	0.60
10. Fire Service	0.74	0.66	0.62	0.78	0.68	0.62
11. Public Security	2.19	1.42	1.49	1.36	1.30	1.55
12. Road Density	1.02	1.00	1.17	0.98	1.04	0.93
13. Postal Service	0.82	0.86	0.87	0.91	0.87	0.98
14. Professional and Technical Manpower	0.79	0.80	0.90	0.72	0.81	0.92
15. Administrative and Managerial Manpower	1.30	1.19	1.24	0.89	1.17	1.16
16. Government Officials	0.98	0.90	0.94	0.84	0.89	1.16
17. Gross Domestic Product	0.92	0.88	0.82	0.96	0.88	1.00
18. Manufacturing Sector	1.03	0.85	0.87	1.04	0.78	0.74
19. Commercial Sector	0.89	0.88	0.90	0.80	0.85	1.08
20. Rural Telephone Booths	1.17	1.07	1.33	1.01	1.16	0.93
21. Agricultural Extension Service	1.31	1.08	1.32	0.96	1.00	1.04
22. Urban Population	0.79	0.90	0.95	0.93	0.88	1.05
23. Large Urban Place	0.72	0.88	0.93	1.00	0.88	0.91
24. Female Literacy	0.85	0.84	1.04	0.58	0.99	0.75
25. Women in Non-Agric. Economic Sectors	0.89	0.86	0.79	1.06	0.81	0.94
26. Above Poverty-Line	0.89	0.85	0.98	0.70	0.85	1.73
27. Public Low-Cost Housing	0.71	0.82	0.89	0.92	0.81	0.82
28. Malays in Agriculture	1.21	1.30	1.12	1.17	1.29	1.35
29. Malays in Manuftg.	0.48	0.53	0.53	0.49	0.66	0.70
30. Malays in Commerce	0.72	0.72	0.69	0.74	0.69	0.87
Average	0.88	0.87	0.92	0.88	0.87	0.91

Table 4.46

Frequency Distribution of Gini Coefficient Ratios Showing
Convergence, Divergence, and Status Quo in Rate of Change

Regional Units	Number of Development Variables Indicating		
	'Convergence'	'Divergence'	'Status Quo'
States	22	8	0
Districts	22	7	1
Urban Districts	20	10	0
Rural Districts	23	6	1
Western Districts	21	8	1
Eastern Districts	20	9	1

of more than one can be viewed as an indication of a further increase in the extent spatial inequality in 1980 as compared to 1970.

As can be seen in Tables 4.45 and 4.46, convergence has been more frequent than divergence or status quo for most of the development variables between 1970 and 1980. Among the 30 development variables, 'Housing Stock', 'Toilets', 'Piped-Water', 'Electricity' and 'Malays In Manufacturing' have positive rate of change that are more than the mean rate of change for all the Gini coefficient ratios. 'Malays In Commerce', 'Population Literacy' and 'Fire Service' comprise the next group of variables whose Gini coefficient ratio were more than the mean rate of change for all the 30 Gini coefficient ratios.

Conversely, the development variables 'Public Security' and 'Malays In Agriculture' show an increase in the Gini coefficient ratio for all regional units as indicated in Table 4.45. The next group of development variables for which there are divergence on most of the different units of observation are 'Maternal Mortality', 'Administrative and Managerial Manpower', 'Rural Telephones', and 'Agricultural Extension Service'.

Even though the rate of change of the Gini values between 1970 and 1980 indicate that for most of the development variables the direction of change is moving towards convergence, their Gini coefficients are still quite high (Tables 4.35 and 4.36) to denote significant change in spatial inequality.

Tables 4.47 and 4.48 show the ranking of the 30 development variables according to their Gini Coefficient ratios of change in performance. The highest ranking corresponds to variables which relatively have the best rate of reduction in spatial inequality.

Summary of Findings

Analysis of spatial pattern of development in Peninsular Malaysia for 1970 and 1980 reveals that wide variations in development performance exist at all scales of analysis (states, districts, urban districts, rural districts, western districts, and rural districts). Indices of development disclose that smaller regional units disclose greater variations than larger regional units. Both 1970 and 1980 indices of development, unweighted and weighted, indicate that development performance are more pronounced at the district rather than the state scale of analysis. Between urban and rural districts, the study finds that urban districts have relatively better development performance than rural districts. Among urban districts, it is found that those that contain large urban centers consistently occupy top rankings for districts with high positive development indices. Similarly, districts in the west coast states fared better than those in the east coast states.

Table 4.47
 Ranking of Gini Coefficient Ratios of 1970 and 1980
 (Comparisons of Variable Performance Within Regional Unit)

Variables*	States	All Dists.	Urban Dists.	Rural Dists.	Western Dists.	Eastern Dists.
1. Population Literacy	13	9	9	10	20	7
2. Schooling	14	8	8	13	8	12
3. Teachers	4	22	21	19	23	9
4. Infant Mortality	14	24	26	15	26	28
5. Maternal Mortality	29	25	23	27	23	11
6. Housing Stock	5	4	4	5	4	4
7. Flush Toilets	1	1	1	1	1	1
8. Piped-Water Supply	6	5	6	10	3	10
9. Electricity	3	2	2	4	2	2
10. Fire Service	10	5	5	9	6	3
11. Public Security	30	29	30	30	30	29
12. Road Density	23	23	25	23	25	17
13. Postal Service	16	15	12	17	15	20
14. Professional and Technical Manpower	11	10	15	7	10	16
15. Administrative and Managerial Manpower	27	28	27	16	28	25
16. Government Officials	22	20	18	14	19	25
17. Gross Domestic Product	21	17	11	21	16	21
18. Manufacturing Sector	24	13	12	26	9	6
19. Commercial Sector	18	17	15	12	13	24
20. Rural Telephone Booths	25	25	29	25	26	17
21. Extension Service	28	27	28	21	22	22
22. Urban Population	11	20	19	19	16	23
23. Large Urban Place	8	17	17	24	16	15
24. Female Literacy	17	12	22	3	21	7
25. Women in Non-Agric. Economic Sectors	18	15	10	28	10	19
26. Above Poverty Line	18	13	20	6	13	30
27. Public Low-Cost Housing	7	11	14	18	10	13
28. Malays in Agriculture	26	30	24	29	29	27
29. Malays in Manufacturing	2	3	3	2	5	4
30. Malays in Commerce	8	7	7	8	7	14

Note: Same ranking for a variable means that Gini Coefficient ratios are the same.

Table 4.48
 Ranking of the Gini Coefficient Ratios of 1970 and 1980
 (Comparisons of Variable Performance Among Regional Units)

Variables*	States	All Dists.	Urban Dists.	Rural Dists.	Western Dists.	Eastern Dists.
1. Population Literacy	5	3	2	3	6	1
2. Schooling	4	3	2	6	1	4
3. Teachers	1	3	6	4	5	2
4. Infant Mortality	1	3	5	2	4	6
5. Maternal Mortality	6	4	5	3	2	1
6. Housing Stock	3	2	1	5	4	6
7. Flush Toilets	5	1	1	6	1	4
8. Piped-Water Supply	4	3	2	6	1	5
9. Electricity	3	4	1	6	2	5
10. Fire Service	5	3	1	6	4	1
11. Public Security	6	3	4	2	1	5
12. Road Density	4	3	6	2	5	1
13. Postal Service	1	2	3	5	3	6
14. Professional and Technical Manpower	2	3	5	1	4	6
15. Administrative and Managerial Manpower	6	4	5	1	3	2
16. Government Officials	5	3	4	1	2	6
17. Gross Domestic Product	4	2	1	5	2	6
18. Manufacturing Sector	5	3	4	6	2	1
19. Commercial Sector	4	3	5	1	2	6
20. Rural Telephone Booths	5	3	6	2	4	1
21. Agricultural Extension Service	5	4	6	1	2	3
22. Urban Population	1	3	5	4	2	6
23. Large Urban Place	1	2	5	6	2	4
24. Female Literacy	4	3	6	1	5	2
25. Women in Non-Agric. Economic Activities	4	3	1	6	2	5
26. Above Poverty Line	4	2	5	1	2	6
27. Public Low-Cost Housing	1	3	5	6	2	3
28. Malays in Agriculture	3	5	1	2	4	6
29. Malays in Manufacturing	1	3	3	2	5	6
30. Malays in Commerce	3	3	1	5	1	6

Note: Same ranking for a variable means that their Gini coefficient ratios are the same.

Urban districts which contain relatively large urban centers are also important administrative and commercial centers. The more urbanized districts also contain state capitals. Most of the large urban centers in the districts are also important points for road, railway, air, and shipping transportation. Large financial, business, and academic institutions are also located within most of these urban districts.

Districts in the west coast states have been exposed to elements of modernization earlier than those in the east coast states of Peninsular Malaysia. The west coast states were the first to be colonized by the Europeans. Under British colonial rule, the first road and railway network were established in the west coast states of Peninsular Malaysia to facilitate the exploitation of tin and rubber industries. Until today, the west coast states not only have important stretch of tin and rubber belt along its coastal plain but also dense network of communication lines as compared to east coast states. Large tracts of lands in the interior part of the east coast states of Pahang, Kelantan, and Terengganu are still covered by virgin jungles. To develop these areas, regional development authorities have been established, namely the Pahang Tenggara Development Authority (or DARA in Pahang), the South Kelantan Regional development Authority (or KESEDAR in Kelantan), and the Terengganu Tengah Regional Development Authority (or KETENGAH in Terengganu). Also, highways have been and are being built to link the east coast states with west coast states.

This study demonstrates that the pattern of spatial development

in 1980 is not significantly different from that in 1970. Most of the districts (or states) that have high development indices in 1970 continue to have relatively high level of development in 1980. Also, comparisons of districts' rankings between 1970 and 1980 reveal that their hierarchy of development are not significantly different.

Analysis of spatial inequalities indicate that development benefits are not proportionately distributed among the different scales of analysis. Gini coefficients show that district scale of analysis reveal greater magnitude of spatial inequalities than at the state scale. In comparing between urban and rural districts, it is observed that the magnitude of spatial inequalities is less acute for urban rather than rural districts. Similarly, distribution of development is found to be more inequitable among districts in the east coast states of Peninsular Malaysia when compared with those in the west coast states. Location Quotients confirm that development benefits are disproportionately distributed among districts.

Analyses of spatial pattern of development and magnitude of spatial inequalities demonstrates and confirm that regional units below the state level provide more information regarding the existence of wide variations in development performance and the intensity of spatial inequalities.

The findings of this study confirm previous studies by Leinbach (1972) and Osborn (1974b) which found districts with large urban

centers to be peaks of development surface in Peninsular Malaysia. In finding that spatial inequalities are more acute for the rural rather than the urban districts, this study is also in accord with Anand's (1983) study.

CHAPTER FIVE

POLICY IMPLICATIONS FOR EQUITABLE DEVELOPMENT

Based on the analysis of development indices and Gini coefficients as well as knowledge gained while preparing this research, this chapter outlines some of the salient implications for development policy and strategies that could be used to address the problems rendered by the persistence of inter-regional disparities and to promote the accomplishment of more equitable distribution of development benefits in Malaysia. The first part of this chapter discusses the specific implications related to the results of the analysis of data. The second part outlines general implications for articulation of more coherent and effective development policies and strategies for promoting equitable development. It should be pointed, however, that the implications indicated here do not cover all the possible ramifications, but rather provides the fundamental framework for further deliberations. It is in fact imperative that further discussions should be undertaken before appropriate development policies and strategies are formulated and implemented. Indeed, suggestions in this chapter are intended more to evoke thoughts for action rather than to prescribe solutions.

Development Policy Implications From Results Of The Study

The scale at which it would be appropriate to undertake evaluation of development performance, by and large, depends upon the objective being pursued. If the purpose for undertaking the evaluation of development performance is to obtain information to redress problems posed by the persistence of inter-regional disparities in development, then, it is apparent from this study that the use of the unit of analysis at the state scale is not as useful as that of using the district scale. As shown in Chapter 4, the aggregation of data tends to suppress or conceal some of the important details of inequality. The aggregation process also have the potential of misclassifying areas that are relatively less developed and vice-versa for those that are relatively more developed. This, for example, was borne out by the fact that although the index of development for the state of Selangor, as a whole, was found to be highly positive, such information alone, however, cannot reveal the fact that certain districts in the state such as Sabak Bernam, Kuala Selangor, Ulu Selangor, Sepang and Kuala Langat were not only relatively less developed within the state, but also in comparison with the other districts in the other states in Peninsular Malaysia. On the contrary, although the state of Kelantan was found to register relatively low, negative index of development as compared to the other states, information derived at this scale of analysis again could not reveal the fact that the district of Kota Bharu not only has a development index that was relatively high and positive amongst the

districts in that state but, also, when it is compared with the other districts in the other states of Peninsular Malaysia. As evidenced from the five-year development plan documents, evaluation of development performance for Malaysia, in general, tends to be undertaken using the sectoral approach at the state scale of analysis. The lack of details by the use of the state scale of analysis may prevent the proper identification of areas which are critically afflicted with development problems. Heavy reliance on information derived from relatively larger units of observation may further contribute to the perpetuation and persistence of those areas which are relatively less developed or more developed. It is apparent that if more details and greater accuracy of information are required, study at a relatively smaller scale of observations is needed. The United Nations (1971) recommends the use of districts for data collection. Srivinas (1977) also points out that micro-studies give greater accuracy of figures as compared with those from macro-studies. The practicality of using the districts as pragmatic territorial framework for planning and implementation of development has also been supported by Friedmann (1980) who contends that the districts are large enough to meet most of the basic needs of the population and they are also relatively small enough so that the entire population of the area can have reasonable access to development innovations (see Higgins, 1980). In sum, it is recommended that monitoring and evaluation of development in Malaysia be undertaken at the district level for the following reasons:

- (1) It is smaller than the state-scale

- (2) It is found in all states in Malaysia
- (3) It constitutes the lowest level at which development planning and implementation has been undertaken
- (4) It constitutes the smallest administrative level at which public agencies are represented.

This recommendation is in consonance with official proposal to update the district administrative system so that it can be used effectively for development planning and administration (Third Malaysia Plan, 1976, p.265).

Allocation of resources for development should not merely be based upon the criterion of the overall development performance of the state, but rather it should consider the actual development performance of the component parts of the states. In this way, those areas that are relatively less developed would not be overlooked and hence should receive more priority than areas that are already relatively more developed. Consideration of the allocation of resources based upon the development performance of the state might result in the neglect of the relatively less developed areas within the state from getting appropriate attention and action. For example, if the state of Selangor continues to show promising level of development and the allocation of resources were made on such criterion alone then the relatively less developed districts in Selangor, such as Kuala Selangor, Sabak Bernam, Sepang, Kuala Langat and Ulu Selangor may suffer; since they would be considered as part of the relatively more developed state. Findings based at the district

scale can be a useful tool for the allocation of resources and implementation of programs in areas where small increments of development may provide larger overall returns. It can be argued that the findings derived from the state scale of analysis can be further treated by micro-level studies. However, if the micro-level studies are undertaken in piecemeal manner, then the findings produced may also have limitations; since the consequent actions would be ad-hoc in nature and without integration with the other regions.

The composite index of development produced by this study found that, in general, most of the districts in Peninsular Malaysia continued to have below average development performance. Comparisons of development indices and Gini coefficients between urban and rural districts show that urban districts tend to have better development performance and less inequalities. Similarly, comparison of development performance and regional inequalities between western and eastern districts reveal that western districts have greater development benefits and relatively less regional inequalities than eastern districts. Since most of the eastern and rural districts continued to register below average development performance, this then suggests that these districts ought to be given priority in development planning and implementation. The fact that the study also found that most of the districts with relatively large urban centers tend to register highly positive development indices, this, too, suggests that development policies and planning ought to give greater focus on development in the less urbanized districts.

This study has established that regional inequalities have not changed significantly between 1970 and 1980. However, during the same period economic growth has increased. The Gross Domestic Product (GDP) per capita in 1971 was (Malaysian Ringgit) \$1,172/=. while in 1980 it increased to \$1,836/=. This implies that there is discrepancy between growth performance and distribution of development benefits. The existence of such a gap reflects poorly on the growth with equity or distribution strategy to development. Corrective measures are necessary to ensure that minimal discrepancy prevail between growth performance and distribution of development benefits. More workable approaches to bring about effective distribution of development benefits must be devised and pursued.

The use of development index as constructed here shows that it is possible to gauge the development performance of the various regions in Malaysia. What is required is the availability of the relevant data pertaining to the variables that have been determined as constituting important indicators of development. Since the Standard-Score Additive Model used here is not as sophisticated as other techniques (such as Principal Component Analysis and Factor Analysis), it can therefore be easily applied by development administrators at the district level. Furthermore, the method is more useful because it enables comparisons over time. The Standard-Score Additive Model should therefore be considered for application in evaluating development performance of the various districts in Malaysia.

The Gini coefficient and Location Quotient techniques have been found to produce results that are helpful in determining how the

different development indicators are distributed spatially. Findings from the use of Gini coefficients and Location Quotients offer useful inputs for development policy and strategies to promote equitable distribution of development benefits. Resources for development can be targeted or allocated to those development variables that are still not effectively distributed. The use of Gini coefficient and Location Quotient techniques provide useful analytical tools for determining the extent of spatial inequalities and in helping to improve decision-making for the efficient and effective allocation of resources to development variables and regions in critical need of them.

The analysis made with regard to the performance of spatial development in Peninsular Malaysia indicates that the relative development gap between the various administrative districts has not changed significantly between 1970 and 1980. The persistence of disparities in development between the various regions in Peninsular Malaysia requires that effective means must be found to address the problem. Unabated regional disparities are undesirable and may affect future development initiatives. Fundamental to the identification and pursuance of appropriate measures to deal with the problem of regional disparities is the existence of a consistent public policy commitment. While it is true that mere policy commitment to reducing inter-regional inequalities in development does not guarantee the accomplishment of such objective, it will, as Fields (1980) noted, be a useful step in facilitating the efforts to address the problem; since in its absence the flow of resources for development to areas in need of attention

may not be properly channelled.

Even though the use of weights for the development index did not produce significant difference in the relative position of the districts and states, this does not mean that this approach would not be useful. Since weights change the relative importance of the variables used to gauge development, they can therefore be used by decision-makers to test the effect of resource allocation schemes upon various societal groups. When resources are limited and determination of priorities are necessary, then the use of local residents' value judgements regarding development objectives and needs facilitates planning and decision-making and also stimulates active participation of the local inhabitants in planning and promotion of development from the 'bottom-up'.

Development as a normative concept and process is not attainable in and by itself. Development has to be purposefully organized and actively pursued in order to accomplish what have been determined to be desirable by the society. As Portes (1976, p.59) aptly states:

Instances of accelerated economic growth or social transformation among modern nations have generally been preceded by deliberate policies initiated and sustained by national governments.

Given the urgency of the development agenda as well as the fact that the recognized purpose of development is to promote and achieve desirable changes, then, it is important that the development process be guided by the Government towards goals that produce the most benefits for society. Since the private forces or the market mechanism are not concerned with distributional and equity issues in

development, they cannot be expected to guide the nation towards such equity goals (Adelman, 1978; United Nations, 1951). It would not be realistic to expect that the spontaneous generation of conditions, or the natural forces of adjustment and equalization, would guide towards desirable development (Soja and Tobin, 1977). Furthermore, the conflicting interests that exist in the private sector poses acute problems for reconciliation towards a common interest or good. The only alternative left is the government; the legitimate representative of the people in a democratic state based on the mandate it possesses by virtue of popular elections. Of course, there is no assurance that the development process under public intervention will automatically steer itself towards the desirable equity goals (Chan, 1979).

However, the government by virtue of its control over allocation of resources and the power that it has to establish priorities for implementation of projects and also because of its concern for its own survival and continuity, it represents a more realistic sector to promote equitable development (also see Ford, 1966). As Gore (1984, p.241) points out, "the government possesses the executive and legislative power to regulate the development process so as to ensure that failures in the market forces are avoided and to prioritize the execution of the development process so as to provide developmental actions on those areas that need them more than others." Similarly, Spodek, 1976, p.106) has aptly stated that "the key variable in development is ... the political system which underlies it." In view of their urgency and complexity, problems and issues associated with

development require considerable governmental action (see Taylor and Williams, 1982). It is then generally agreed that governmental intervention is desirable and feasible in order to reduce regional inequalities in development (Jumper et al., 1980; Rhoda, 1982, p.10). As Rhoda (1982, p.10) has aptly stated: "The action of all governments influence patterns of ... developemnt [since] government decisions and actions have impacts on regions."

The survey carried out for this study supports this public approach. 97 percent of the respondents indicate that the role of the government is either "fairly important" or "very important" in reducing regional inequalities in development.

Implications From Personal Experience

Problems which the author experienced while doing the research also indicate matters that could be considered in efforts to redress regional inequalities and promote more equitable development benefits.

One of the problems confronting development planning in most Third World countries is the lack of adequate data (Cubukgil, 1981; Elyas Omar, 1980). This is also true for Malaysia, where relevant data below the national level are either insufficient or difficult to gather. Inadequacies of data are due to a number of reasons: (1) lack of guidance as to the types of data to be collected, (2) inadequate staffing to collect the pertinent data, (3) budgetary limitations, or (4) problems of reliability of data. Some useful information pertaining to development performance is currently available at the

state and district levels. However, improper storage and poor record keeping makes accessibility of the data very difficult. The availability of data at the national level alone is not adequate to properly gauge the performance of development of smaller units. Most of the data from documented and published sources from the Department of Statistics, Malaysia do not contain sufficient details at the district level. Since availability of information pertaining to the performance of key development variables is necessary and vital for the articulation of effective equity goals and strategies, it is therefore essential to develop sound data collection system by incorporating at the district level responsibilities whereby basic data are originated from the areas in question. As Mangahas (1982, p.270) puts it, "There is need to collect the relevant data so that all concerned can be guided by the objective facts." A resolution passed at the National Seminar on District Officers, Peninsular Malaysia in February, 1983 calling for the establishment of basic data at the district level is a clear manifestation of such need. The difficulty of retrieving data without unnecessary delay is also equally important. A system which can facilitate the efficient storage and retrieval of data, such as the use of computers, could perhaps be given consideration to accomplish such purpose. Although it is true that "statistical systems cannot be revolutionized overnight" (Scott, 1979, p.451), systematic integration of various resources is needed to address the problem of the paucity of data vital for gauging the performance of development.

A prerequisite in the efforts to deal with the problems of

regional disparities in development is not only the ability to identify areas or regions which are afflicted with development problems, but also to have a modus operandi that ensures comparability of the findings in space and time. In this regard, it is important to remember that development being multi-dimensional in character requires a practical mechanism to summarize or synthesize on the basis of criteria that are common to all regions. To be able to develop a uniform specification of indicators, it would be required that the working definition of development is clearly understood. Constant exchange of views among relevant government agencies are needed to arrive at a feasible and workable definition of development.

This study could not cover all aspects or dimensions of development. Refinement of the variables to be used for measuring development performance is suggested to ensure that the important aspects of development are included. It is important to note that each of the various aspects of development is a phenomenon in itself. Since development is a complex multi-dimensional process, the different aspects of development are interrelated. While one or more of these aspects can gain prominence independently, ultimately all must occur if a society is to undergo a change. Such transition is facilitated when all the salient aspects of development evolves more or less simultaneously (Abdul Hamid, 1979).

To design development strategies that will effectively address the problem of inter-regional inequalities, it is desirable that there exists proper coordination of various policies. It is clear that

regional inequalities within a country cannot be corrected by implementing uncoordinated and unintegrated regional plan; since the development of one region affects the development of other regions. Although there are various "regional" plans in Peninsular Malaysia, these plans are studied and planned in isolation and at different times by different consultants. "Most plans fail to foresee the inter-regional effects of their proposals" (Abdul Hamid, 1979, p.137). The sheer number of different, isolated regional plans contribute to the problem of coordination and, hence, add to the problem of efficient allocation of scarce resources. As Higgins (1975, p.395) notes: "One cannot plan effectively for any one region in isolation. The plans must always be put into the context of the national economy, with full cognizance of inter-regional . . . flows."

Since the various administrative districts in Malaysia are under the jurisdiction of states, it is necessary that the various state governments cooperate together to ensure that regional planning and development will not create conflicts that could ultimately have negative impacts on their development. As Abdul Hamid (1979, p.146) correctly observes: "If development planning at the regional level is to be accomplished, cooperation between states is mandatory" (also see Honjo, 1980). It is imperative therefore that the Federal Government provide the necessary support and guidelines. Since most of the funding for development projects comes from the Federal Government it could and should ensure effective coordination of regional development by exercising its power and control over finance. As Desmond (1975, p. 173) states: "One of the most important steps in

policy implementation is the budget. In fact through the budget process policies are often changed and priorities altered in the interests of one sector or another."

As mentioned before, in dealing with development it should be recognized this is a change in several dimensions that must be interrelated and whose ultimate end is the enhancement of societal well-being. Since development is multidimensional in nature, the approach to development planning must therefore reflect such multidimensionality.

Since problems of development are area specific, as Prantilla (1981) aptly puts it, policies directed towards development of the region(s) has to be also area specific (also Misra. 1980). A number of empirical studies have demonstrated that reliance on indirect regional strategies, such as dependence on trickle-down effects, may not only prove to be ineffective but also requires longer time-frame for its achievement.

Evaluation of development performance is a basic prerequisite in the process and efforts to promote development. It is just as important as the planning, implementation and coordination aspects of development. It has been shown both in the literature as well as in the practice of development that evaluation of development is an important component of the development cycle (Drewe, 1979). Information derived from evaluation of development will not only indicate the conditions and status of development for the unit of analysis under examination, but also they can become useful inputs for

future development planning. Figure 5.1 depicts an evaluation process model for development, describing the flow from objectives and standards through measurement, comparison and correction, and back again to the objectives. As Robbin (1976, p.414) states: "not only does planning influence evaluating, the process also works the other way since effective evaluating provides feedback Therefore we should view planning and evaluating as being closely linked, each influencing the other." Despite the theoretical and practical importance of evaluating development performance, these activities do not seem to be given as much emphasis as the planning, implementation and coordination functions of the development cycle. This is clearly borne out by the existence of a number of planning and implementation coordination agencies at the federal and state levels and the noticeable absence of any specific body to handle the monitoring and evaluation responsibilities. It appears that the monitoring and evaluation activities are left to the discretion of the various planning and operating agencies to undertake the task in addition to their existing responsibilities. More often than not the task of monitoring and evaluation of development performance do not receive as much attention as the planning, implementation, and coordination functions. While not speculating on the reasons for the residual attention given to the monitoring and evaluation activities, it is

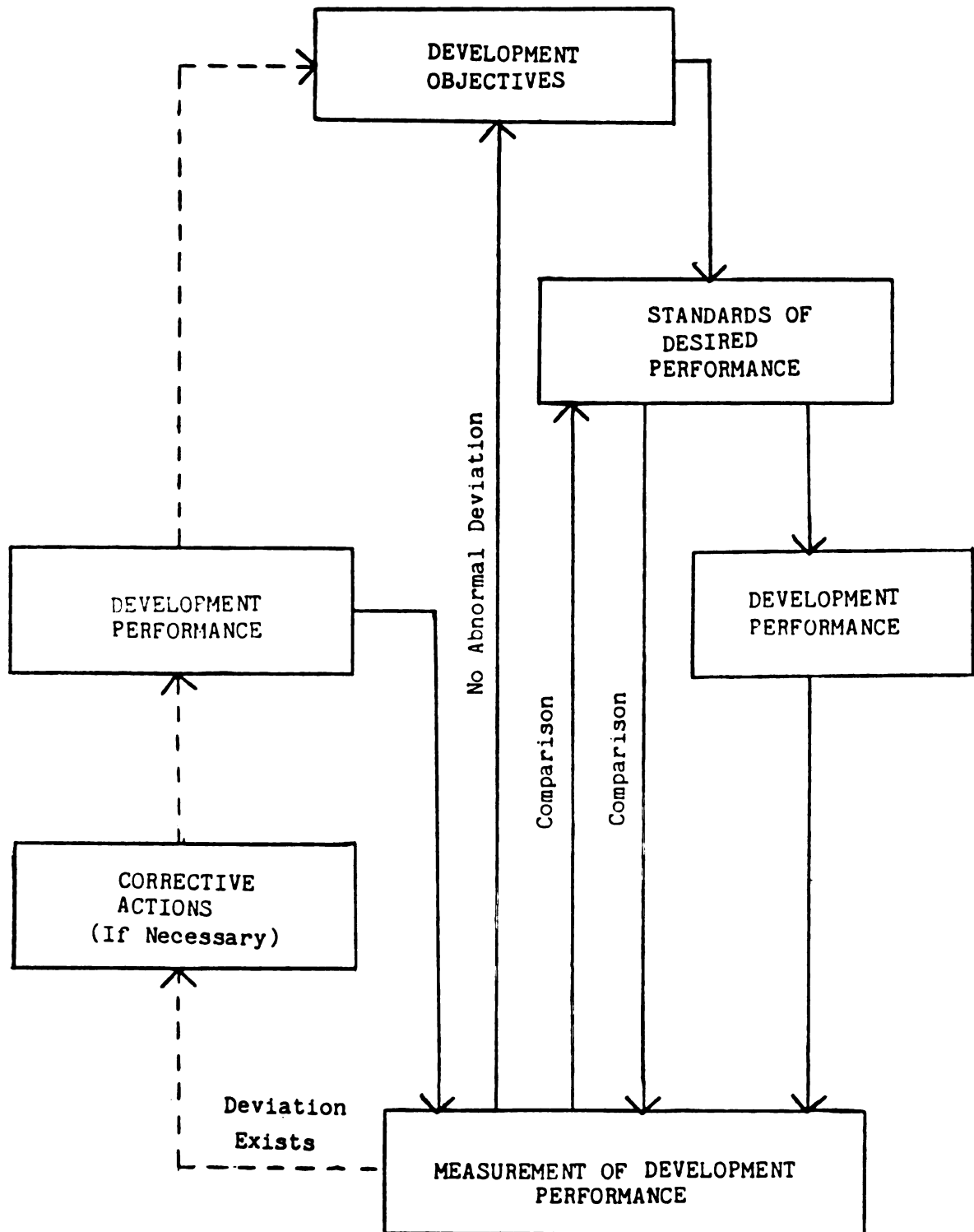


Figure 5.1: A Model Of The Evaluation Process Of Development

appropriate to emphasize that equal attention should also be given to the monitoring and evaluation activities of development performance. Perhaps, the task of monitoring and evaluating development could be better accomplished if a specific public agency is assigned to undertake them.

Inter-regional disparities in development is only a facet of the inequality problem in Malaysia. Since regions contain population and economic activities, regional disparities therefore also have social and economic implications. Inequality as a development issue assumes greater importance when it is remembered that social and economic dualities in Malaysia also have ethnic connotations. In view of the above implications, it is essential that a more comprehensive approach be adopted by the Malaysian authorities to solve the inequality problem as a national issue.

It has been stated in the Mid-Term Review of the Fourth Malaysia Plan (1984, para. 56, p.21) that 'planning on the basis of regions' constitutes an important means to articulate more effective reduction of inter-regional inequalities of development in Malaysia. To facilitate this, three important considerations must be addressed. First, a definition of 'region' is essential. Its existence will provide a common working guideline and purpose for those engaged in the planning, implementation, coordination, and evaluation of regional development. Second, existence of the appropriate institutions to undertake this function at the 'regional' level is required. There should be adequate personnel. Third, in-service course on theoretical

and practical aspects of regional planning and development pertinent to Malaysia must be established. Fulfillment of these considerations would not only enhance efforts to promote regional planning and development but also would facilitate promotion of growth with equity approach to development.

Political Will

To achieve a substantial solution to the problem of regional inequalities in Malaysia will require a concerted effort to truly upgrade and accelerate the development process of the lagging regions. Inequality issues would remain mere academic rhetoric if they are not seriously considered in the actual formulation of development policy and planning. In this respect, it would be difficult to dismiss the importance of the government's political will and wisdom to stimulate and induce the realization of desirable development goals. As the United Nations (1976, p.61) sees it: "Governments must have the political will to evolve and implement innovative and adequate urban and rural . . . policies, [and act] as a cornerstone of their efforts to improve the quality of life in human settlements." The importance of the government's political will has also been emphasized by Waterston (1967, p.14), who states that "sustained governmental commitment is a sine qua non for development." Furthermore, "if the belief of the people in the government is to be maintained, [then] the rhetoric must be backed by explicit actions" (Gore, 1984, p.249).

Efforts by the Malaysian authorities to establish a national

urbanization policy and to implement urbanization of traditional villages are steps in the right direction to deal with problems of inter-regional inequalities. However, such initiatives must be carefully deliberated and planned so that polarization reversal can effectively occur and equitable development be harmoniously accomplished. The concept of urbanization in development must be clearly understood, so that the proposed urbanization policy and strategies will not be based on narrow and faulty interpretations. "Progress depends to a large extent upon the adoption by governments of appropriate administrative and legislative actions" (United Nations, 1951, p.17; also see Higgins, 1980; Chan, 1979). There are at least three major concepts of urbanization that should be considered: the behavioral, the structural, and the demographic (Lampard, 1965). The first of these is concerned with the experience of individuals over time and with patterns of behavior (Wirth, 1938); the second is related to the activities of the whole population and is primarily concerned with changes in economic structure (Lampard, 1965); the third is the demographic concept where the process is seen primarily as one of population concentration (Lampard, 1965). Also, in the proposed urbanization policy lagging regions must be given priority. Development of lagging regions must take place in their own right, with cognizance and understanding of their needs and contributions in the national development process. Advancement of lagging regions should not be made to rely upon the trickle down process. Strategies which still give undue prominence to developed

regions will not only perpetuate the dualistic pattern of spatial development, but also, through polarization effects, hinder efforts to foster integrated and harmonious national development.

CHAPTER SIX

SUMMARY AND CONCLUSION

Within the methodological and data constraints, this study has examined the development performance of the various administrative districts in Peninsular Malaysia. In doing this, the magnitude and the distribution of development benefits has been established. The remainder of this chapter presents the summary of the findings and makes suggestions for future research.

Contextual Overview

The fact that the existence of some degree of inequality in development benefits is inevitable does not justify the neglect in dealing with this problem. In fact, inequality in development requires appropriate attention and redress, since its continued persistence, by polarizing effects, could adversely affect on-going and future development efforts. While the pursuance of perfect equality or even distribution of development benefits is unrealistic, efforts to reduce the intensity of inequality in development are, however, within practical reach.

In many ways, this study has been motivated by the concern expressed by Malaysian authorities over the problem of inter-regional inequalities in development in Malaysia. The authorities recognized the potential problems that could be generated from the persistence of inter-regional inequalities in development in Malaysia, especially as they bear implications upon the initiatives to promote, consolidate and sustain positive progress for overall national development.

Also this study has been prompted by the need for adequate and comprehensive information at a scale of analysis appropriate for a more coherent understanding of the nature and magnitude of inter-regional inequalities in development in Malaysia. Much of current development information and planning is done at the state level, as evidenced in the official five-year plan documents and Treasury annual reports. Information on regional development for different geographical scales is only available for some specific regional studies, mainly done by private consultants or specialised government agencies (such as the Federal Town and Country Planning Department, Ministry of Land and Regional Development, Regional Development Authorities). Information from these isolated regional development studies have limited applications because, being specific to certain geographical areas and performed under different terms of reference, they may or may not fit into the broader national plan. These regional studies are often marked by pursuance of objectives that are quite different from one another and valid for different time periods. This study focussed attention on the examination of spatial development and spatial inequalities by comparing all regions at the

same time.

Summary Of Findings

Analysis of 1970 and 1980 data reveals that there exists a wide spatial variation of development performance among the various states and administrative districts in Peninsular Malaysia. The relative difference of composite indices of development indicates that there are not only gaps in the performance of development among these regions, but also that the benefits of development were not well distributed. This is amidst the impressive aggregate rates of economic growth in Malaysia between 1970 and 1980; with a rate of growth of 7.8 percent per annum as compared to 6 percent per annum in the 1960's. Also, the GDP per capita for Malaysia witnessed an increase from (Malaysian Ringgit) \$1,172/= in 1971 to \$1,836/= in 1980. This finding is therefore in consonance with findings of other studies which contend that the distributional aspect of development in Malaysia has not matched the impressive performance of economic growth (Griffin and Khan, 1979; Cheong, 1979; Chan, 1979; Mahangas, 1982; Aris Othman, 1984).

By use of Gini coefficients and Location Quotients for the various indicators of development it is clearly shown that their geographical distribution is not proportionally uniform at the state nor at the administrative district level. This study reveals that disparities increase as the geographical unit of analysis decrease.

Among administrative districts, this analysis indicates that the

urban and the western districts in Peninsular Malaysia, as a whole, register comparatively better development performance than the rural and the eastern districts. These findings support the hypotheses that (1) urban districts have better development performance and less inequality than rural districts, and (2) districts in the west coast states have better development performance and less inequality than districts in the east coast states. Anand's (1983) study on income inequality in Peninsular Malaysia has also found that rural areas had greater problems with income inequality than urban areas. In finding that the more urbanized districts have higher levels of development, this study is also in consonance with findings established by Leinbach's (1972) and Osborn's (1974) studies.

Comparisons of composite indices of development for 1970 and 1980 reveal that the change in development performance has been small as differences recorded failed to be statistically significant. This verifies the hypothetical contention that there was no significant change in development in Peninsular Malaysia in 1980. Similarly, examination of ratios between the Gini coefficients of 1970 and 1980 shows that the change in spatial inequality has been minimal. In this regard, this finding is not able to support Kuznet's (1955) and Williamson's (1965) hypothetical assertions the process of economic development will reduce the magnitude of inequalities over time.

Suggestions For Further Research

This study focusses only on inter-district disparities in development. This represents only one scale of analysis that could be appropriate. Further insights and understanding of inequalities in development could perhaps could be enhanced if future research would consider intra-district differences, as it is quite possible that within districts pockets of inequality may exist. The availability of these studies would considerably contribute to a much better identification of severe social and economic deviations. These could enhance the process of targetting appropriate measures for some deprived groups.

This study is not to be misconstrued as dealing only with spatial differentiation in the benefits of development. While the focus is clearly spatial, the variables used and the findings are social in nature. As long as people inhabit the various geographical regions, we cannot ignore the question of who is getting what. This study has indirectly attempted to answer this question. Knowledge about who gets what provides useful information for the pursuance of development policy and planning towards national unity and social equity. The fact that Malaysia's New Economic Policy has national unity as its overriding goal suggests that research that investigates the social aspects of the distribution of development benefits is a contribution to this objective. Future research is recommended to go beyond spatial differentiation, towards the understanding of social differentiation in the distribution of development benefits. It will

be useful to explore whether changes in spatial disparity affect social differentiation, among different ethnic and socio-economic groups.

The index of development has been used as a general yardstick of relative level of development. Being based on empirical observations it is subject to many idiosyncracies of local systems, and the results may be affected by them. No attempt was made in this study to take into account the variations in attitudes, perceptions and priorities which exists from region to region within Peninsular Malaysia. But the introduction of variable weights suggests that the inequality results may not be altered substantially. What may be more important is the use of a technique to recognize the complementarities among the various development variables.

It should be pointed out that most of the variables used in this study could, in fact, be further diaggregated to provide more details, but then there is the risk of "overloading" the significance of some. Future research might determining what the appropriate mixture of geographical scale and variable breakdown is.

In this study, the administrative districts have been classified into western and eastern districts as well as into urban and rural districts for the purpose of determining their performance in development. The categorization of western and eastern districts has been used to compare two geographic areas that seem to be quite different from the development point of view. Similarly, the categorization of urban and rural districts has been used to compare

their development performance. Other contrasting areas may be compared in the future using criteria different from the ones adopted here.

Most of the data for the selected indicators of development used in this study were derived from only two points in time, 1970 and 1980. From this study it is not possible to say very much about the variability over the period, the ups and downs of regional development. For this, time-series data are required. Since development is a dynamic process perhaps this study could shed more light when variables are taken over a period of time rather than on a single year. There is always the danger that data could have been produced from development activity that occurred only in that particular year.

Concluding Note

Regional development should not aim only at increased welfare in aggregate terms, but also should strive towards more equitable distribution of development among areas and groups of people. Whatever the present shortfalls, the aim of regional and national development must be to ensure that over a reasonable period of time all regions in the country should realize their potential for development and attain levels of living not far removed from those of the nation as a whole. Cohesive and harmonious development can be effectively promoted and sustained when regional disparities are within acceptable limits.

Strong political commitment is fundamental for the pursuance of an effective policy to accomplish growth with equity (Myrdal, 1957; Hirschman, 1958; Williamson, 1965; Waterston, 1967; Rhoda, 1982). Equally important, development planners must equip themselves with the requisite skills and have adequate information to respond effectively to the dynamics of development and guide them towards more efficient execution of planning, implementation, coordination, and evaluation of development. In this regard, it is befitting to quote the message by Malaysia's 'Father of Development', Tun Haji Abdul Razak (1973), who states:

The course of rapid development should not only be steered by able and skillful management but also [should] be motivated by clear and sound ideals distilled through extensive and intensive inquiries into the deeper meaning of development and progress.

Finally, as resolution 2626 (XXV) of the United Nations General Assembly, passed on 24th October, 1970, aptly states:

The ultimate objective of development must be to bring a sustained improvement of the well-being of the individual and bestow benefits on all. If undue privileges, extremes of wealth and social injustices persists, then development fails in the essential purpose.

LIST OF APPENDICES

APPENDIX 1

APPENDIX 1: INDICATORS OF DEVELOPMENT -- OPERATIONALIZATION,
SOURCES OF DATA, AND NOTATION

- 1) Percent population 10 years and older who are literate.
(Source: Department of Statistics, Malaysia) *a
- 2) Percent population 5 years and older who have/had formal schooling. *b
(Source: Department of Statistics, Malaysia) *c
- 3) Number of teachers per 1,000 population 5 years and older.
(Source: Department of Statistics, Malaysia) *d
- 4) Number of infant deaths (under 1 year old) per 1,000 live births (by occurrence).
(Source: Department of Statistics (1972) Vital Statistics, West Malaysia, 1970. Kuala Lumpur, Government Printer.
- 5) Number of maternal deaths due to puerperal causes per 1,000 live births (by occurrence). *e
(Source: Department of Statistics (1972) Vital Statistics, West Malaysia, 1970. Kuala Lumpur, Government Printer.
- 6) Number of occupied housing units per 1,000 population. *f
(Source: Department of Statistics, Malaysia)
- 7) Percent occupied housing units having flush and pour-flush toilets. *g
(Source: Department of Statistics, Malaysia)
- 8) Percent occupied housing units having piped-water supply. *h
(Source: Department of Statistics, Malaysia)
- 9) Percent occupied housing units having public-supply electricity.*i
(Source: Department of Statistics, Malaysia)
- 10) Number of public law and order enforcement personnel per 10,000 population.
- 11) Number of fire (protection) service personnel per 10,000 population.
(Source: Fire Service Department, Malaysia)
- 12) Road mileage (in miles) per 10 square miles. *j
(Source: Ministry of Public Works, Malaysia & Economic Planning Unit, Prime Minister's Department, Malaysia)
- 13) Number of postal service personnel per 10,000 population. *k
(Source: Postal Services Department, Malaysia)
- 14) Percent labor force 10 years and older in professional and technical group occupations. *l
(Source: Department of Statistics, Malaysia)
- 15) Percent labor force 10 years and older in administrative and managerial group occupations. *m
(Source: Department of Statistics, Malaysia)
- 16) Number of government legislative, administrative and executive officials per 10,000 population. *n
(Source: Department of Statistics, Malaysia)
- 17) Percent of labor force 10 years and older in manufacturing sector. *o and *p
(Department of Statistics, Malaysia)

APPENDIX 1 (cont'd.).

- 18) Percent labor force 10 years and older in commercial sector. *q
(Source: Department of Statistics, Malaysia)
- 19) Gross domestic product per capita. *r
(Source: Department of Statistics, Malaysia & Five-Year Plan documents)
- 20) Number of public telephone booths in rural areas per 10,000 rural population. *s
(Source: Telecoms Department, Malaysia & Department of Statistics, Malaysia)
- 21) Agricultural extension stations acreage per 1,000 labor force in agriculture. *t
(Source: Department of Agriculture, Malaysia & Department of Statistics, Malaysia)
- 22) Percent population in urban places. *u
(Source: Department of Statistics, Malaysia & Federal Town and Country Planning Department)
- 23) Population of places 20,000 and more as percent of total urban population. *v
(Source: Department of Statistics, Malaysia)
- 24) Percent female population 10 years and older who are literate. (Source: Department of Statistics, Malaysia)
- 25) Percent female labor force 10 years and older in non-agricultural economic activities. *w
(Source: Department of Statistics, Malaysia)
- 26) Percent labor force 10 years and older receiving mean monthly income earnings more than Malaysian R\$300/=. *x
(Source: Department of Statistics & Anand, S. (1983). Inequality and Poverty in Malaysia. New York, Oxford University Press)
- 27) Number of public low-cost housing units per 1,000 labor force receiving mean monthly income earnings less than Malaysia R\$300/=. *y
(Source: State Secretariats (Housing Section) in Peninsular Malaysia; Anand, S. (1983). op.cit., Department of Statistics, Malaysia)
- 28) Malay labor force 10 years and older in agricultural vocations as percent of total Malay labor force.
(Source: Department of Statistics, Malaysia)
- 29) Malay labor force 10 years and older as percent of labor force in manufacturing sector.
(Source: Department of Statistics, Malaysia)
- 30) Malay labor force 10 years and older as percent of labor force in commercial sector.
(Source: Department of Statistics, Malaysia)

Notes:

- *a) Refers to those able to read and write a simple letter in any language. Persons who could only read and write a few words are not considered to be literate but were categorised as illiterate.

APPENDIX 1 (cont'd.).

- *b) Does not include nursery and kindergarten, adult education and religious education. The percentage with formal schooling is derived from the percentage of population with no schooling (obtained from the Department of Statistics, Malaysia). By subtracting the percentage of population with no schooling by 100 percent, the percentage of population with schooling is obtained.
- *c) Based on those listed as 'teachers' under the occupational group tables for unpublished districts files.
- *d) and *e) 'By residence' data are preferred. Such data are not available for 1970. Thus, comparison with 1980 'by residence' data is not possible.
- *f) Housing units are classified as occupied if there were people living and/or sleeping in the housing units at the time of the Census.
- *g) Among the residential sanitation system, flush and pour-flush toilets could be considered as modern system.
- *h) Includes all piped-water, regardless whether it is treated or from public-supply or private tank.
- *i) Refers to electricity supplied by the National Electricity Board, local authorities and/or other electricity companies.
- *j) For major, paved roads. Data prepared by the Department of Public Works, Malaysia.
- *k) Includes only uniformed postmen and the clerical staff. Excluded are other ancillary staff, such as typists, stenographers, office boys, and drivers.
- *l) and *m) The occupation of a person refers to the kind of work performed by the person at his/her place of employment. Occupations have been classified according to the Dictionary of Occupational Classification, 1980 published by the Ministry of Labour and Manpower (which is based on the International Standard Classification of Occupations, 1968 prepared by the ILO).
- *m) 'Government officials' here include only (1) legislative officials and government administrators, and (2) government executive officials.
- *n) This refers to persons aged 10 and older who during the reference week were either employed or unemployed.
- *o) Manufacturing industries are based on classification according to the Malaysian Industrial Classification, 1972 (updated) (which is based on the U.N. International Standard Industrial Classification Of All Economic Activities, 1968). Includes large and small manufacturing activities.
- *p) 'Commerce' here includes (1) wholesale trade, (2) retail trade, (3) banks and other financial institutions, (4) insurance, (5) real estate, and (6) hotel and restaurant. Although in 1970 'business services' were tabulated under 'Services', breakdown for all districts, except Kuala Lumpur, were obtained.
- *q) State GDPs are available from Five-Year Plan documents. However, GDPs for districts are not available. So estimates are derived based on the following formula: labor force in relevant

APPENDIX 1 (cont'd.).

industries in the district divided by similar labor force in the state and then multiply by the state GDP.

- *r) Based on records obtained from the Telecoms Department, Malaysia. Some adjustments are made to the data provided, especially when it is not indicated in which district the rural telephone booth is located. The total number of rural telephone booths for 1970 and 1980 are based on cumulative figures from 1959 till end of 1970 for the 1970 and from 1971 till end of 1980 for 1980 data. Total for districts and states may not tally because for those telephone booths which could not be located in the districts they were not accounted for in the total under districts; but they are considered in the total for the state.
- *s) Based mainly on I.F.T. Wong's book on land use in Peninsular Malaysia. For 1970, used the 1974 statistics for size of agricultural station(s)' acreage; since no data available for 1970. For 1980, used the estimates made by the Department of Agriculture (Soil Science Section). Some adjustments are made to fit the data with the comparative districts used. Wong's book indicate that in 1974 Perak Tengah had 146 acres of agricultural stations. Since in 1970 Perak Tengah did not exist yet, this 146 acres were placed under the district of Kuala Kangsar; since it is found that these stations were largely found at Titi Gantung (near Parit). The 525 acres listed in 1974 under Petaling are placed under the district of Ulu Langat in 1970; since most of these 525 acres are found in Serdang.
According to Wong's book, small agricultural stations are usually less than 2 acres; serving as outposts and servicing centers for channelling of technical publications and subsidies to farmers in the surrounding areas. On the other hand, large agricultural stations have wider activities which include: demonstration plots, field verification trials, research into newly introduced crops, production of planting materials and stock seeds, multiplication of stock materials, hybridization and large scale production.
- *t) Urban areas refer to all gazetted areas with a population 10,000 or more at the time of the Census.
- *u) Places with population 20,000 and more is used here as an indicator of urban development for the following reasons: (1) theoretically, 20,000 and more population is considered a minimum demographic threshold for efficient existence and delivery of basic urban services and facilities, and (2) most of the active large towns in Peninsular Malaysia have a population at least 20,000 and above.
- *v) Include all those activities that are not listed under 'Agriculture, Forestry, and Fishing.' These would then include the following sectors: 'Mining, Manufacturing, Construction, Utilities, Transportation, Storage and Communications, Wholesale and Retail, Hotel and Restaurant, Finance, Banking, Insurance, Real Estate, Business, Government Services, and Other Services'.

APPENDIX 1 (cont'd.).

- *w) Use the benchmark of Malaysian R\$300/= and less per mensem as the poverty line (based on reports by the Socio-Economic Research Unit, Prime Minister's Department, 1976/77 Agricultural Census, and Five-Year Plan documents). Using Anand's (1983) Table 6-11, which shows the mean income for the various occupations in Malaysia (by two-digit occupational category), the mean income of the labor force for the district was computed. Then the number of labor force with mean income less or above the poverty line was derived.
- *x) These are public low-cost housing built by the public agencies -- state governments and their statutory bodies. The figures for 1970 and 1980 are based on cumulative statistics; for 1970 all low-cost housing units before Dec., 1970 and for 1980 from 1971 till end of 1980. 1970 figures for Manjung/Kuala Kangsar/Perak Tengah has been apportioned according to their percentage share of low-cost housing.
- *y) The number of labor force below poverty line are derived by estimates as in *w.

APPENDIX 2

APPENDIX 2(A): STATES IN PENINSULAR MALAYSIA, 1970 AND 1980

States in 1970	States in 1980
1) Johore	1) Johore
2) Kedah	2) Kedah
3) Kelantan	3) Kelantan
4) Malacca (Melaka)	4) Malacca (Melaka)
5) Negri Sembilan	5) Negri Sembilan
6) Pahang	6) Pahang
7) Penang (Pulau Pinang)	7) Penang (Pulau Pinang)
8) Perak	8) Perak
9) Perlis	9) Perlis
10) Selangor	10) Selangor
11) Trengganu	11) Trengganu
	12) Federal Territory of Kuala Lumpur (Wilayah Persekutuan Kuala Lumpur) *

Note:

The Federal Territory of Kuala Lumpur is treated as a state in this study.

APPENDIX 2(B): AREA OF STATES IN PENINSULAR MALAYSIA,
1970 AND 1980

States in 1970	Area (sq. ml)	States in 1980	Area (sq. ml)
1) Johore	7330	1) Johore	7330
2) Kedah	3639	2) Kedah	3639
3) Kelantan	5765	3) Kelantan	5765
4) Malacca (Melaka)	640	4) Malacca (Melaka)	640
5) Negri Sembilan	2566	5) Negri Sembilan	2566
6) Pahang	13884	6) Pahang	13884
7) Penang (Pulau Pinang)	398	7) Penang (Pulau Pinang)	398
8) Perak	8110	8) Perak	8110
9) Perlis	307	9) Perlis	307
10) Selangor	3166	10) Selangor	3072
11) Terengganu	5002	11) Terengganu	5002
		12) Federal Territory of Kuala Lumpur (Wilayah Persekutuan Kuala Lumpur) *	94

Note:

The Federal Territory of Kuala Lumpur is treated
as a state in this study.

APPENDIX 2(C): POPULATION OF STATES IN PENINSULAR MALAYSIA,
1970 AND 1980

States in 1970	Population	States in 1980	Population
1) Johore	1271794	1) Johore	1580423
2) Kedah	952421	2) Kedah	1077815
3) Kelantan	684312	3) Kelantan	859270
4) Malacca (Melaka)	403061	4) Malacca (Melaka)	446769
5) Negri Sembilan	480053	5) Negri Sembilan	551442
6) Pahang	503030	6) Pahang	768801
7) Penang (Pulau Pinang)	773327	7) Penang (Pulau Pinang)	900772
8) Perak	1561184	8) Perak	1743655
9) Perlis	120996	9) Perlis	144782
10) Selangor	1625625	10) Selangor	1426250
11) Trengganu	404924	11) Trengganu	525255
		12) Federal Territory of Kuala Lumpur (Wilayah Persekutuan Kuala Lumpur) *	919610

Note:

The Federal Territory of Kuala Lumpur is treated as a state in this study.

APPENDIX 3

APPENDIX 3: STATES IN PENINSULAR MALAYSIA, 1970 AND 1980
(FOR COMPARATIVE USE)

Comparative States in 1970	Comparative States in 1980
1) Johore	1) Johore
2) Kedah	2) Kedah
3) Kelantan	3) Kelantan
4) Malacca (Melaka)	4) Malacca (Melaka)
5) Negri Sembilan	5) Negri Sembilan
6) Pahang	6) Pahang
7) Penang (Pulau Pinang)	7) Penang (Pulau Pinang)
8) Perak	8) Perak
9) Perlis	9) Perlis
10) Selangor	10) Selangor and the Federal Territory of Kuala Lumpur (Wilayah Persekutuan Kuala Lumpur) *
11) Trengganu	11) Trengganu

Note:

The Federal Territory of Kuala Lumpur is combined with the state of Selangor to facilitate comparison with the same area in 1970. In 1970, the Federal Territory of Kuala Lumpur was part of the district of Kuala Lumpur in the state of Selangor.

APPENDIX 4

**APPENDIX 4 (A): ADMINISTRATIVE DISTRICTS IN PENINSULAR MALAYSIA,
1970 AND 1980**

Districts in 1970	District in 1980
JOHORE STATE	JOHORE STATE
1) Batu Pahat	1) Batu Pahat
2) Johor Bahru	2) Johor Bahru
3) Kluang	3) Kluang
4) Kota Tinggi	4) Kota Tinggi
5) Mersing	5) Mersing
6) Muar	6) Muar
7) Pontian	7) Pontian
8) Segamat	8) Segamat
KEDAH STATE	KEDAH STATE
9) Baling	9) Baling
10) Bandar Bahru	10) Bandar Bahru
11) Kota Setar	11) Kota Setar
12) Kuala Muda	12) Kuala Muda
13) Kubang Pasu	13) Kubang Pasu
14) Kulim	14) Kulim
15) Langkawi	15) Langkawi
16) Padang Terap	16) Padang Terap
17) Sik	17) Sik
18) Yan	18) Yan
	19) Pendang
KELANTAN STATE	KELANTAN STATE
19) Bachok	20) Bachok
20) Kota Bahru	21) Kota Bahru
21) Machang	22) Machang
22) Pasir Mas	23) Pasir Mas
23) Pasir Puteh	24) Pasir Puteh
24) Tanah Merah	25) Tanah Merah
25) Tumpat	26) Tumpat
26) Ulu Kelantan	27) Ulu Kelantan
	28) Kuala Krai
MALACCA STATE	MALACCA STATE
27) Melaka Utara	29) Melaka Utara
28) Melaka Selatan	30) Melaka Selatan
29) Melaka Tengah	31) Melaka Tengah
NEGRI SEMBILAN STATE	NEGRI SEMBILAN STATE
30) Jelebu	32) Jelebu
31) Kuala Pilah	33) Kuala Pilah
32) Port Dickson	34) Port Dickson
33) Rembau	35) Rembau

APPENDIX 4(A) (cont'd.).

Districts in 1970	Districts in 1980
34) Seremban	36) Seremban
35) Tampin	37) Tampin
PAHANG STATE	PAHANG STATE
36) Bentong	39) Bentong
37) Cameron Highland	40) Cameron Highland
38) Jerantut	41) Jerantut
39) Kuantan	42) Kuantan
40) Lipis	43) Lipis
41) Pekan	44) Pekan
42) Raub	45) Raub
43) Temerloh	46) Temerloh
	47) Rompin
PENANG STATE	PENANG STATE
44) Seberang Perai Utara	48) Seberang Perai Utara
45) Seberang Perai Tengah	49) Seberang Perai Tengah
46) Seberang Perai Selatan	50) Seberang Perai Selatan
47) Pulau Pinang Timur Laut	51) Pulau Pinang Timur Laut
48) Pulau Pinang Barat Daya	52) Pulau Pinang Barat Daya
PERAK STATE	PERAK STATE
49) Batang Padang	53) Batang Padang
50) Dindings	54) Manjung
51) Kinta	55) Kinta
52) Krian	56) Krian
53) Kuala Kangsar	57) Kuala Kangsar
54) Larut & Matang	58) Larut & Matang
55) Hilir Perak	59) Hilir Perak
56) Ulu Perak	60) Ulu Perak
	61) Perak Tengah
PERLIS STATE	PERLIS STATE
57) Perlis	62) Perlis
SELANGOR STATE	SELANGOR STATE
58) Klang	63) Gombak
59) Kuala Langat	64) Klang
60) Kuala Lumpur	65) Kuala Langat
61) Kuala Selangor	66) Kuala Selangor
62) Sabak Bernam	67) Petaling
63) Ulu Langat	68) Sabak Bernam
64) Ulu Selangor	69) Sepang
	70) Ulu Langat
	71) Ulu Selangor

APPENDIX 4 (Cont'd.).

TERENGGANU STATE

- 65) Besut
- 66) Dungun
- 67) Kemaman
- 68) Kuala Terengganu
- 69) Marang
- 70) Ulu Terengganu

TERENGGANU STATE

- 72) Besut
 - 73) Dungun
 - 74) Kemaman
 - 75) Kuala Terengganu
 - 76) Marang
 - 77) Ulu Terengganu
- FEDERAL TERRITORY
- 78) Kuala Lumpur
-

**APPENDIX 4 (B): AREA OF ADMINISTRATIVE DISTRICTS IN
PENINSULAR MALAYSIA, 1970 AND 1980**

Districts in 1970	Area (sq.ml)	District in 1980	Area (sq.ml)
JOHORE STATE		JOHORE STATE	
1) Batu Pahat	725	1) Batu Pahat	725
2) Johor Bahru	702	2) Johor Bahru	702
3) Kluang	1101	3) Kluang	1101
4) Kota Tinggi	1345	4) Kota Tinggi	1345
5) Mersing	1095	5) Mersing	1095
6) Muar	906	6) Muar	906
7) Pontian	355	7) Pontian	355
8) Segamat	1101	8) Segamat	1101
KEDAH STATE		KEDAH STATE	
9) Baling	586	9) Baling	586
10) Bandar Bahru	104	10) Bandar Bahru	104
11) Kota Setar	499	11) Kota Setar	256
12) Kuala Muda	356	12) Kuala Muda	356
13) Kubang Pasu	366	13) Kubang Pasu	366
14) Kulim	296	14) Kulim	296
15) Langkawi	180	15) Langkawi	180
16) Padang Terap	524	16) Padang Terap	524
17) Sik	635	17) Sik	635
18) Yan	93	18) Yan	93
		19) Pendang	243
KELANTAN STATE		KELANTAN STATE	
19) Bachok	102	20) Bachok	102
20) Kota Bahru	158	21) Kota Bahru	158
21) Machang	210	22) Machang	210
22) Pasir Mas	223	23) Pasir Mas	223
23) Pasir Puteh	168	24) Pasir Puteh	168
24) Tanah Merah	574	25) Tanah Merah	574
25) Tumpat	65	26) Tumpat	65
26) Ulu Kelantan	4265	27) Ulu Kelantan	3129
		28) Kuala Krai	1136
MALACCA STATE		MALACCA STATE	
27) Melaka Utara	256	29) Melaka Utara	256
28) Melaka Selatan	269	30) Melaka Selatan	269
29) Melaka Tengah	115	31) Melaka Tengah	115
NEGRI SEMBILAN STATE		NEGRI SEMBILAN STATE	
30) Jelebu	528	32) Jelebu	528
31) Kuala Pilah	956	33) Kuala Pilah	421
32) Port Dickson	216	34) Port Dickson	216
33) Rembau	160	35) Rembau	160

APPENDIX 4(B) (cont'd.).

Districts in 1970	Area (sq.ml)	Districts in 1980	Area (sq.ml)
34) Seremban	367	36) Seremban	367
35) Tampin	339	37) Tampin	339
PAHANG STATE		PAHANG STATE	
36) Bentong	707	39) Bentong	707
37) Cameron Highland	275	40) Cameron Highland	275
38) Jerantut	2918	41) Jerantut	2918
39) Kuantan	1143	42) Kuantan	1143
40) Lipis	2007	43) Lipis	2007
41) Pekan	3721	44) Pekan	1714
42) Raub	876	45) Raub	876
43) Temerloh	2237	46) Temerloh	2237
		47) Rompin	2007
PENANG STATE		PENANG STATE	
44) S.Perai Utara	101	48) S.Perai Utara	101
45) S.Perai Tengah	91	49) S.Perai Tengah	91
46) S.Perai Selatan	93	50) S.Perai Selatan	93
47) P.Pinang Timur Laut	46	51) P.Pinang Timur Laut	46
48) P.Pinang Barat Daya	67	52) P.Pinang Barat Daya	67
PERAK STATE		PERAK STATE	
49) Batang Padang	1047	53) Batang Padang	1047
50) Dindings	513	54) Manjung	451
51) Kinta	756	55) Kinta	756
52) Krian	370	56) Krian	370
53) Kuala Kangsar	1194	57) Kuala Kangsar	981
54) Larut & Matang	809	58) Larut & Matang	809
55) Hilir Perak	887	59) Hilir Perak	667
56) Ulu Perak	2534	60) Ulu Perak	2534
		61) Perak Tengah	495
PERLIS STATE		PERLIS STATE	
57) Perlis	307	62) Perlis	307
SELANGOR STATE		SELANGOR STATE	
58) Klang	391	63) Gombak	252
59) Kuala Langat	385	64) Klang	243
60) Kuala Lumpur	355	65) Kuala Langat	324
61) Kuala Selangor	570	66) Kuala Selangor	456
62) Sabak Bernam	275	67) Petaling	188
63) Ulu Langat	417	68) Sabak Bernam	386
64) Ulu Selangor	776	69) Sepang	239
		70) Ulu Langat	310
		71) Ulu Selangor	674
TERENGGANU STATE		TERENGGANU STATE	
65) Besut	764	72) Besut	764
66) Dungun	1056	73) Dungun	1056

APPENDIX 4 (B) (cont'd.).

67) Kemaman	979	74) Kemaman	979
68) Kuala Terengganu	506	75) Kuala Terengganu	506
69) Marang	201	76) Marang	201
70) Ulu Terengganu	1496	77) Ulu Terengganu	1496
		FEDERAL TERRITORY	
		78) Kuala Lumpur	94

APPENDIX 4 (C): POPULATION OF ADMINISTRATIVE DISTRICTS IN
PENINSULAR MALAYSIA, 1970 AND 1980

Districts in 1970	Population	District in 1980	Population
JOHORE STATE		JOHORE STATE	
1) Batu Pahat	249596	1) Batu Pahat	274625
2) Johor Bahru	267913	2) Johor Bahru	406871
3) Kluang	134510	3) Kluang	179791
4) Kota Tinggi	60942	4) Kota Tinggi	114267
5) Mersing	34644	5) Mersing	42208
6) Muar	278903	6) Muar	291129
7) Pontian	117686	7) Pontian	121031
8) Segamat	127600	8) Segamat	150501
KEDAH STATE		KEDAH STATE	
9) Baling	104142	9) Baling	104858
10) Bandar Bahru	33257	10) Bandar Bahru	31724
11) Kota Setar	301213	11) Kota Setar	279567
12) Kuala Muda	159831	12) Kuala Muda	192308
13) Kubang Pasu	117451	13) Kubang Pasu	129808
14) Kulim	88346	14) Kulim	92525
15) Langkawi	23788	15) Langkawi	28340
16) Padang Terap	30363	16) Padang Terap	40428
17) Sik	39027	17) Sik	43366
18) Yan	55003	18) Yan	59030
		19) Pendang	75861
KELANTAN STATE		KELANTAN STATE	
19) Bachok	62162	20) Bachok	73953
20) Kota Bahru	207394	21) Kota Bahru	275986
21) Machang	51570	22) Machang	58040
22) Pasir Mas	100604	23) Pasir Mas	118153
23) Pasir Puteh	70155	24) Pasir Puteh	80959
24) Tanah Merah	57591	25) Tanah Merah	78097
25) Tumpat	73056	26) Tumpat	85952
26) Ulu Kelantan	61780	27) Ulu Kelantan	18578
		28) Kuala Krai	69552
MALACCA STATE		MALACCA STATE	
27) Melaka Utara	114550	29) Melaka Utara	113083
28) Melaka Selatan	84816	30) Melaka Selatan	87523
29) Melaka Tengah	203695	31) Melaka Tengah	246163
NEGRI SEMBILAN STATE		NEGRI SEMBILAN STATE	
30) Jelebu	32897	32) Jelebu	36730
31) Kuala Pilah	115240	33) Kuala Pilah	67296
32) Port Dickson	76032	34) Port Dickson	83561
33) Rembau	39842	35) Rembau	36350

APPENDIX 4(C) (cont'd.).

Districts in 1970	Population	Districts in 1980	Population
34) Seremban	168175	36) Seremban	202790
35) Tampin	47867	37) Tampin	57507
		38) Jempol	67208
PAHANG STATE		PAHANG STATE	
36) Bentong	56744	39) Bentong	72865
37) C. Highland	15365	40) C. Highland	21502
38) Jerantut	36739	41) Jerantut	67875
39) Kuantan	96327	42) Kuantan	170573
40) Lipis	50645	43) Lipis	56996
41) Pekan	70345	44) Pekan	62246
42) Raub	57300	45) Raub	64414
43) Temerloh	119565	46) Temerloh	213355
		47) Rompin	38975
PENANG STATE		PENANG STATE	
44) S.Perai Utara	161524	48) S.Perai Utara	199449
45) S.Perai Tengah	117475	49) S.Perai Tengah	161975
46) S.Perai Selatan	63626	50) S.Perai Selatan	71558
47) P.P.Timur Laut	369991	51) P.P.Timur Laut	391400
48) P.P.Barat Daya	60711	52) P.P.Barat Daya	76390
PERAK STATE		PERAK STATE	
49) Batang Padang	121121	53) Batang Padang	136473
50) Dindings	127861	54) Manjung	143610
51) Kinta	477758	55) Kinta	564500
52) Krian	153692	56) Krian	155765
53) Kuala Kangsar	188601	57) Kuala Kangsar	146292
54) Larut & Matang	220169	58) Larut & Matang	249550
55) Hilir Perak	210843	59) Hilir Perak	203028
56) Ulu Perak	61139	60) Ulu Perak	71372
		61) Perak Tengah	73065
PERLIS STATE		PERLIS STATE	
57) Perlis	120996	62) Perlis	144782
SELANGOR STATE		SELANGOR STATE	
58) Klang	233524	63) Gombak	166059
59) Kuala Langat	107121	64) Klang	279349
60) Kuala Lumpur	871909	65) Kuala Langat	101578
61) Kuala Selangor	135646	66) Kuala Selangor	110366
62) Sabak Bernam	77968	67) Petaling	360056
63) Ulu Langat	95865	68) Sabak Bernam	103261
64) Ulu Selangor	103592	69) Sepang	46025
		70) Ulu Langat	177877
		71) Ulu Selangor	81679
TERENGGANU STATE		TERENGGANU STATE	
65) Besut	79197	72) Besut	100830
66) Dungun	54347	73) Dungun	58360
67) Kemaman	44724	74) Kemaman	64899

APPENDIX 4 (C) (Cont'd.).

68) Kuala Terengganu	173304	75) K. Terengganu	232730
69) Marang	19692	76) Marang	24977
70) Ulu Terengganu	33660	77) Ulu Terengganu	43459
		FEDERAL TERRITORY	
		78) Kuala Lumpur	919610

APPENDIX 5

APPENDIX 5: ADMINISTRATIVE DISTRICTS IN PENINSULAR MALAYSIA,
1970 AND 1980 -- FOR COMPARATIVE USE

Comparative Districts in 1970	Comparative Districts in 1980
JOHORE STATE	JOHORE STATE
1) Batu Pahat	1) Batu Pahat
2) Johor Bahru	2) Johor Bahru
3) Kluang	3) Kluang
4) Kota Tinggi	4) Kota Tinggi
5) Mersing	5) Mersing
6) Muar	6) Muar
7) Pontian	7) Pontian
8) Segamat	8) Segamat
KEDAH STATE	KEDAH STATE
9) Baling	9) Baling
10) Bandar Bahru	10) Bandar Bahru
11) Kota Setar	11) Kota Setar/Pendang *
12) Kuala Muda	12) Kuala Muda
13) Kubang Pasu	13) Kubang Pasu
14) Kulim	14) Kulim
15) Langkawi	15) Langkawi
16) Padang Terap	16) Padang Terap
17) Sik	17) Sik
18) Yan	18) Yan
KELANTAN STATE	KELANTAN STATE
19) Bachok	19) Bachok
20) Kota Bahru	20) Kota Bahru
21) Machang	21) Machang
22) Pasir Mas	22) Pasir Mas
23) Pasir Puteh	23) Pasir Puteh
24) Tanah Merah	24) Tanah Merah
25) Tumpat	25) Tumpat
26) Ulu Kelantan	26) Ulu Kelantan/Kuala Krai **
MALACCA STATE	MALACCA STATE
27) Melaka Utara	27) Melaka Utara
28) Melaka Selatan	28) Melaka Selatan
29) Melaka Tengah	29) Melaka Tengah
NEGRI SEMBILAN STATE	NEGRI SEMBILAN STATE
30) Jelebu	30) Jelebu
31) Kuala Pilah	31) Kuala Pilah/Jempol ***
32) Port Dickson	32) Port Dickson
33) Rembau	33) Rembau
34) Seremban	34) Seremban
35) Tampin	35) Tampin
PAHANG STATE	PAHANG STATE
36) Bentong	36) Bentong
37) Cameron Highland	37) Cameron Highland
38) Jerantut	38) Jerantut
39) Kuantan	39) Kuantan

APPENDIX 5 (cont'd.).

Comparative Districts in 1970	Comparative Districts in 1980
40) Lipis	40) Lipis
41) Pekan	41) Pekan/Rompin ****
42) Raub	42) Raub
43) Temerloh	43) Temerloh
PENANG STATE	PENANG STATE
44) Seberang Perai Utara	44) Seberang Perai Utara
45) Seberang Perai Tengah	45) Seberang Perai Tengah
46) Seberang Perai Selatan	46) Seberang Perai Selatan
47) Pulau Pinang Timur Laut	47) Pulau Pinang Timur Laut
48) Pulau Pinang Barat Daya	48) Pulau Pinang Barat Daya
PERAK STATE	PERAK STATE
49) Batang Padang	49) Batang Padang
50) Dindings/Kuala Kangsar/ Hilir Perak **	50) Manjung/Kuala Kangsar/ Hilir Perak/Perak Tengah **
51) Kinta	51) Kinta
52) Krian	52) Krian
53) Larut & Matang	53) Larut & Matang
54) Ulu Perak	54) Ulu Perak
PERLIS STATE	PERLIS STATE
55) Perlis	55) Perlis
SELANGOR STATE	SELANGOR STATE
56) Kuala Selangor/ Sabak Bernam ++*	56) Kuala Selangor/ Sabak Bernam ++*
57) Kuala Langat/Ulu Langat **+	57) Kuala Langat/Ulu Langat/ Sepang +++*
58) Klang/Ulu Selangor/ Kuala Lumpur @	58) Gombak/Klang/Petaling/Ulu Selangor/ F.T. of K.Lumpur #
TRENGGANU STATE	TRENGGANU STATE
59) Besut	59) Besut
60) Dungun	60) Dungun
61) Kemaman	61) Kemaman
62) Kuala Trengganu	62) Kuala Trengganu
63) Marang	63) Marang
64) Ulu Trengganu	64) Ulu Trengganu

Note:

* For 1980, the districts of KOTA SETAR and PENDANG (in Kedah State) have been combined as one district to facilitate comparison between these two districts in 1970 and 1980. PENDANG is wholly created from part of KOTA SETAR.

** For 1980, the districts of ULU KELANTAN and KUALA KRAI have been combined as one district to facilitate comparison of these two districts in 1970 and 1980. KUALA KRAI is wholly created from part of ULU KELANTAN.

APPENDIX 5 (cont'd.).

*** For 1980, the districts of KUALA PILAH and JEMPOL have been combined as one district to facilitate comparison of these two districts in 1970 and 1980. JEMPOL is wholly created from part of KUALA PILAH.

**** For 1980, the districts of PEKAN and ROMPIN have been combined as one district to facilitate comparison of these two districts in 1970 and 1980. ROMPIN is wholly created from part of PEKAN.
APPENDIX 5(cont)

*+ For 1970, the districts of DINDINGS, KUALA KANGSAR and PERAK HILIR have been combined as one district to facilitate comparison of these districts for 1970 and 1980. Such combination is necessitated by the fact that after 1970 PERAK TENGAH, a new administrative district, was created from parts of these three districts. Also this combination is necessary because of the difficulty of determining the distribution of 1970 data for PERAK TENGAH.

+* For 1980, the districts of MANJUNG (formerly DINDINGS), KUALA KANGSAR, PERAK HILIR and PERAK TENGAH have been combined as one district to facilitate comparison of similar areas between 1970 and 1980. Explanation given for combination of districts of DINDINGS, KUALA KANGSAR and PERAK HILIR FOR 1970 is relevant (refer).

++* For 1970 and 1980, the districts of KUALA SELANGOR and SABAK BERNAM have been combined as one district to facilitate comparison of these areas between 1970 and 1980. The main reason for combining these two districts together instead of other districts is because SABAK BERNAM gained additional area from KUALA SELANGOR following the restructuring of district boundaries in SELANGOR STATE after the FEDERAL TERRITORY OF KUALA LUMPUR came into being in 1971.

**+ For 1970, the districts of KUALA LANGAT and ULU LANGAT have been combined as one district to facilitate comparison of these areas between 1970 and 1980. This has been necessitated by the fact that the new district of SEPANG has been created from parts of these two districts.

+++ For 1980, the districts of KUALA LANGAT, ULU LANGAT and SEPANG have been combined as one district to facilitate comparison of these areas between 1970 and 1980. Explanations for combination of the districts of KUALA LANGAT and ULU LANGAT in 1970 is relevant (refer).
@ For 1970, the districts of KLANG, ULU SELANGOR and KUALA LUMPUR have been combined as one district to facilitate comparison of these areas between 1970 and 1980. This decision has been made because after 1971 several changes occurred to these areas that therefore require this adjustment -- (1) the district of KUALA LUMPUR was abolished, (2) the new district of PETALING has been created from parts of KLANG and the former district of KUALA LUMPUR, (3) the new district of GOMBAK has

APPENDIX 5 (cont'd.).

been created from parts of ULU SELANGOR and the former district of KUALA LUMPUR, (4) the new FEDERAL TERRITORY of KUALA LUMPUR has been created from part of the former district of KUALA LUMPUR, i.e. from the Mukim of Kuala Lumpur.

For 1980, the districts of GOMBAK, KLANG, PETALING, ULU SELANGOR and the FEDERAL TERRITORY OF KUALA LUMPUR have been combined as one district to facilitate comparison of these areas between 1970 and 1980. Explanations for the combination of the districts of KLANG, ULU SELANGOR and KUALA LUMPUR in 1970 above is relevant (refer).

APPENDIX 6

VALUE JUDGEMENT SURVEY

Please fill in the following information:

NAME:.....

ADDRESS:.....

TELEPHONE NUMBER: (Area code:().....

NAME CURRENT PLACE OF
STUDY/EMPLOYMENT:.....

NAME LAST PLACE OF EMPLOYMENT IN MALAYSIA:.....

TITLE/DESIGNATION HELD:.....

TOWN/CITY OF RESIDENCE IN MALAYSIA:.....

Please respond as objectively as you can to the following
questionnaires:

- 1) INDICATE, BY MARKING THE APPROPRIATE PLACE, HOW WOULD YOU RATE
THE ISSUE OF REDUCTION OF REGIONAL INEQUALITIES (I.E. BETWEEN
ADMINISTRATIVE DISTRICTS) IN MALAYSIA ?

Very Important:.....

Fairly Important:.....

Less Important:.....

Not Important:.....

- 2) INDICATE, IN THE APPROPRIATE PLACE, HOW WOULD YOU RATE THE
ROLE OF THE GOVERNMENT IN REDUCING REGIONAL INEQUALITIES (I.E.
BETWEEN ADMINISTRATIVE DISTRICTS) IN MALAYSIA ?

Very Important:.....

Fairly Important:.....

Less Important:.....

Not Important:.....

- 3) PLEASE RATE EVERY PAIR OF INDICATORS OF DEVELOPMENT IN THE
30 X 30 MATRIX OF SELECTED INDICATORS. PLEASE REFER TO THE
ATTACHED SHEETS ON 'INSTRUCTION ON HOW TO FILL IN THE MATRIX
CELLS' AND 'LIST OF SELECTED INDICATORS OF DEVELOPMENT'.

INSTRUCTION ON HOW TO FILL IN THE MATRIX CELLS

This survey attempts to determine the relative importance of a list of selected 'development objectives', hereafter called 'indicators'.

Thirty (30) indicators are used in this survey (please see attached sheet on 'List Of Selected Indicators Of Development. These indicators are to be compared to each other on a paired basis. To do this a total of ten (10) points are distributed to each indicator in a pair according to their relative importance. This means that for every cell in the 30 x 30 matrix (attached) there are two (2) values that must sum to ten (10).

For example, in making comparison between indicator 'X' and indicator 'Y', if indicator 'X' is more desirable to 'development' than indicator 'Y' then one might want to give indicator 'X' a rating value of 7 and 3 to indicator 'Y'. However, if one feels that indicator 'X' is absolutely more desirable than indicator 'Y' then a distribution of 10 for 'X' and 0 for 'Y' will be appropriate. On the other hand, if they are equally desirable then a cell distribution 5 and 5 will reflect this equality.

In filling the matrix cells you can use any combination of values as long as the sum is ten (10).

LIST OF SELECTED INDICATORS OF DEVELOPMENT CRITERIA

<u>CODE</u>	<u>INDICATORS OF DEVELOPMENT CRITERIA</u>
E1.....	Increase population with formal schooling
E2.....	Increase population literacy
E3.....	Increase number of teachers
H1.....	Reduce number of infant deaths (less than 1 year old)
H2.....	Reduce number of maternal deaths
R1.....	Increase housing stock
R2.....	Improve residential sanitation system
A1.....	Increase beneficiaries of piped-water supply
A2.....	Increase beneficiaries of public-supply electricity
S1.....	Increase accessibility of population to public law and order enforcement personnel
S2.....	Increase accessibility of population to fire service
C1.....	Improve transportation network
C2.....	Increase accessibility of population to postal service
M1.....	Increase professional and technical manpower
M2.....	Increase administrative- and managerial-level manpower
M3.....	Improve distribution of government officials
EC1.....	Increase manufacturing activities
EC2.....	Encourage commercial and business activities
EC3.....	Increase gross domestic production
RD1.....	Increase accessibility of rural population to telephone
RD2.....	Increase agricultural extension services
UD1.....	Increase urban population
UD2.....	Increase size of cities with higher-order services, amenities and facilities
WP1.....	Increase female literacy
WP2.....	Increase participation of female population in non-agricultural economic activities
PE1.....	Reduce number of people in poverty
PE2.....	Increase access of poor people to housing
PE3.....	Reduce number of Malays in agricultural vocations
RS1.....	Increase Malay participation in commercial and business sectors
RS2.....	Increase Malay participation in manufacturing sector

30 X 30 MATRIX OF SELECTED INDICATORS OF DEVELOPMENT

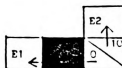
Please fill your judgement only in cells above the darkened diagonal.

	E1	E2	E3	H1	H2	R1	R2	A1	A2	S1	S2	C1	C2	M1	M2	M3	EC1	EC2	EC3	RD1	RD2	UD1	UD2	WD1	WD2	FE1	FE2	FE3	RS1	RS2
E1																														
E2																														
E3																														
H1																														
H2																														
R1																														
R2																														
A1																														
A2																														
S1																														
S2																														
C1																														
C2																														
M1																														
M2																														
M3																														
EC1																														
EC2																														
EC3																														
RD1																														
RD2																														
UD1																														
UD2																														
WD1																														
WD2																														
FE1																														
FE2																														
FE3																														
RS1																														
RS2																														

EXAMPLE FOR FILLING THE MATRIX CELLS

Comparing E1 and E2

The following distribution of 10 points shows that E1 is absolutely more important than E2.



APPENDIX 7

APPENDIX 7: URBAN & RURAL DISTRICTS++, 1970 AND 1980.

Urban or Rural			Urban or Rural		
District	1970	1980	District	1970	1980
JOHORE STATE			42) Kuantan	U	U
1) Batu Pahat	U	U	43) Lipis	R	R
2) Johor Bahru	U	U	44) Pekan	R	R
3) Kluang	U	U	45) Raub	R	U
4) Kota Tinggi	R	R	46) Temerloh	R	R
5) Mersing	R	R	47) Rompin	*	R
6) Muar	U	U	PENANG STATE		
7) Pontian	R	U	48) S.P. Utara	U	U
8) Segamat	R	U	49) S.P. Tengah	U	U
KEDAH STATE			50) S.P. Selatan	R	R
9) Baling	R	R	51) P.P. Timur Laut	U	U
10) Bandar Bahru	R	R	52) P.P. Barat Daya	R	R
11) Kota Setar	U	U	PERAK STATE		
12) Kuala Muda	U	U	53) Batang Padang	R	R
13) Kubang Pasu	R	R	54) Dinding/Manjung	R	R
14) Kulim	R	U	55) Kinta	U	U
15) Langkawi	R	R	56) Krian	R	R
16) Padang Terap	R	R	57) Kuala Kangsar	U	U
17) Sik	R	R	58) Larut & Matang	U	U
18) Yan	R	R	59) Perak Hilir	U	U
19) Pendang	*	R	60) Ulu Perak	R	R
KELANTAN STATE			61) Perak Tengah	R	R
20) Bachok	R	R	PERLIS STATE		
21) Kota Bahru	U	U	62) Perlis	R	R
22) Machang	R	R	SELANGOR STATE		
23) Pasir Mas	R	R	63) Gombak	*	R
24) Pasir Puteh	R	R	64) Klang	U	U
25) Tanah Merah	R	R	65) Kuala Langat	R	R
26) Tumpat	R	R	66) Kuala Selangor	R	R
27) Ulu Kelantan	R	R	67) Petaling	*	U
28) Kuala Krai	*	R	68) Sabak Bernam	R	R
MALACCA STATE			69) Sepang	*	R
29) Melaka Utara	R	R	70) Ulu Langat	U	U
30) Melaka Selatan	R	R	71) Ulu Selangor	R	R
31) Melaka Tengah	U	U	TERENGGANU STATE		
N. SEMBILAN STATE			72) Besut	R	R
32) Jelebu	R	R	73) Dungun	R	U
33) Kuala Pilah	R	R	74) Kemaman	R	R
34) Port Dickson	R	U	75) Kuala Terengganu	U	U
35) Rembau	R	R	76) Marang	R	R
36) Seremban	U	U	77) Ulu Terengganu	R	R
37) Tampin	R	R	KUALA LUMPUR		

APPENDIX 7 (Cont'd.).

38) Jempol	*	R	78) Kuala Lumpur Dist. U	**
PAHANG STATE			78) F.T. of K.Lumpur	* U
39) Bentong	U	U	<hr/>	
40) Cameron Highland	R	R	* means did not exist yet.	
41) Jerantut	R	R	** means no longer exist.	
			U = URBAN R = RURAL	
<hr/>				
+ Urban District = has urban place with population 20,000 and more.				

APPENDIX 8

APPENDIX 8: URBAN & RURAL DISTRICTS++, 1970 AND 1980

Urban or Rural			Urban or Rural		
District	1970	1980	District	1970	1980
JOHORE STATE			PAHANG STATE		
1) Batu Pahat	U	U	36) Bentong	U	U
2) Johor Bahru	U	U	37) Cameron Highland	R	R
3) Kluang	U	U	38) Jerantut	R	R
4) Kota Tinggi	R	R	39) Kuantan	U	U
5) Mersing	R	R	40) Lipis	R	R
6) Muar	U	U	41) Pekan/Rompin	R	R
7) Pontian	R	U	42) Raub	R	U
8) Segamat	R	U	43) Temerloh	R	R
KEDAH STATE			PENANG STATE		
9) Baling	R	R	44) S.P. Utara	U	U
10) Bandar Bahru	R	R	45) S.P. Tengah	U	U
11) Kota Setar/ Pendang	U	U	46) S.P. Selatan	R	R
12) Kuala Muda	U	U	47) P.P. Timur Laut	U	U
13) Kubang Pasu	R	R	48) P.P. Barat Daya	R	R
14) Kulim	R	U	PERAK STATE		
15) Langkawi	R	R	49) Batang Padang	R	R
16) Padang Terap	R	R	50) Manjung(Dinding)/ K.Kangsar/P.Hilir/ Perak Tengah	U	U
17) Sik	R	R	51) Kinta	U	U
18) Yan	R	R	52) Kerian	R	R
KELANTAN STATE			53) Larut & Matang	U	U
19) Bachok	R	R	54) Ulu Perak	R	R
20) Kota Bahru	U	U	PERLIS STATE		
21) Machang	R	R	55) Perlis	R	R
22) Pasir Mas	R	R	SELANGOR STATE		
23) Pasir Puteh	R	R	56) Kuala Selangor/ Sabak Bernam	R	R
24) Tanah Merah	R	R	57) Kuala Langat/Ulu Langat/Sepang	U	U
25) Tumpat	R	R	58) Gombak/Klang/Ulu Selangor/Petaling/ W.Persekutuan(KL)	U	U
26) Ulu Kelantan/K.Krai	R	R	TERENGGANU STATE		
MALACCA STATE			59) Besut	R	R
27) Melaka Utara	R	R	60) Dungun	R	U
28) Melaka Selatan	R	R	61) Kemaman	R	R
29) Melaka Tengah	U	U	62) Kuala Terengganu	U	U
N. SEMBILAN STATE					
30) Jelebu	R	R			
31) K.Pilah/Jempol	R	R			
32) Port Dickson	R	U			
33) Rembau	R	R			

APPENDIX 8 (Cont'd.).

34) Seremban	U	U	63) Marang	R	R
35) Tampin	R	R	64) Ulu Terengganu	R	R

U = URBAN DISTRICTS R = RURAL DISTRICTS

++ Urban District = has urban place with pop. 20000 and more.

APPENDIX 9

**APPENDIX 9: PLACES IN PENINSULAR MALAYSIA WITH A POPULATION
OF 10,000 AND MORE IN 1970**

<u>NO.</u>	<u>NAME OF PLACE</u>	<u>POPULATION</u>	<u>DISTRICT</u>	<u>STATE</u>
1.	BATU PAHAT	53291	BATU PAHAT	JOHORE
2.	JOHOR BAHRU	136229	JOHOR BAHRU	JOHORE
3.	KULAI	11841	JOHOR BAHRU	JOHORE
4.	KELUANG	43272	KELUANG	JOHORE
5.	MUAR	61218	MUAR	JOHORE
6.	TANGKAK	12328	MUAR	JOHORE
7.	SEGAMAT	17796	SEGAMAT	JOHORE
8.	ALOR SETAR	66260	KOTA SETRA	KEDAH
9.	SUNGAI PETANI	35959	KUALA MUDA	KEDAH
10.	KULIM	18505	KULIM	KEDAH
11.	KOTA BHARU	55124	KOTA BHARU	KELANTAN
12.	PANGKAL KALONG	14426	KOTA BHARU	KELANTAN
13.	PERINGAT	11806	KOTA BHARU	KELANTAN
14.	PASIR MAS	11233	PASIR MAS	KELANTAN
15.	TUMPAT	10673	TUMPAT	KELANTAN
16.	MALACCA TOWN	87160	MELAKA TENGAH	MALACCA
17.	KUALA PILAH	12508	KUALA PILAH	NEGRI SEMBILAN
18.	PORT DICKSON	10300	PORT DICKSON	NEGRI SEMBILAN
19.	SEREMBAN	80921	SEREMBAN	NEGRI SEMBILAN
20.	BENTONG	22683	BENTONG	PAHANG
21.	KUANTAN	43358	KUANTAN	PAHANG
22.	RAUB	18433	RAUB	PAHANG
23.	MENTAKAB	11308	TEMERLOH	PAHANG
24.	BUTTERWORTH	61187	S.P.UTARA	PENANG
25.	BUKIT MERTAJAM	26631	S.P.TENGAH	PENANG
26.	GEORGETOWN	269247	P.P.TIMUR LAUT	PENANG
27.	AYER ITAM	25640	P.P.TIMUR LAUT	PENANG
28.	TANJONG TOK KONG	12291	P.P.TIMUR LAUT	PENANG
29.	IPOH	247969	KINTA	PERAK
30.	KAMPAR	26591	KINTA	PERAK
31.	BATU GAJAH	10692	KINTA	PERAK
32.	KUALA KANGSAR	15310	KUALA KANGSAR	PERAK
33.	SG. SIPUT UTARA	21383	KUALA KANGSAR	PERAK
34.	TAIPING	54645	LARUT & MATANG	PERAK
35.	TELOK INTAN	44524	HILIR PERAK	PERAK
36.	KLANG	113607	KLANG	SELANGOR
37.	PETALING JAYA	93447	KUALA LUMPUR	SELANGOR
38.	SERDANG BAHRU	13910	KUALA LUMPUR	SELANGOR
39.	KAJANG/SG. CHUA	21950	ULU LANGAT	SELANGOR
40.	AMPANG	11084	ULU LANGAT	SELANGOR
41.	DUNGUN	17560	DUNGUN	TERENGGANU
42.	KEMAMAN	12514	KEMAMAN	TERENGGANU
43.	KUALA TERENGGANU	53320	KUALA TERENGGANU	TERENGGANU
44.	KUALA LUMPUR	648276	KUALA LUMPUR	SELANGOR

Sources: (1) 1980 Population & Housing Census of Malaysia: Local Authority Areas, Population, Households and Living Quarters. Department of Statistics Malaysia, Kuala Lumpur. (June, 1982).
(2) Federal Town & Country Planning Department Malaysia, K.L.

APPENDIX 10

APPENDIX 10: PLACES IN PENINSULAR MALAYSIA WITH POPULATION
10,000 AND MORE, 1980

<u>NO.</u>	<u>NAME OF PLACE</u>	<u>POPULATION</u>	<u>DISTRICT</u>	<u>STATE</u>
1.	BATU PAHAT	64727	BATU PAHAT	JOHORE
2.	JOHOR BAHRU	246395	JOHOR BAHRU	JOHORE
3.	KULAI	23617	JOHOR BAHRU	JOHORE
4.	KELUANG	50315	KELUANG	JOHORE
5.	KOTA TINGGI	13056	KOTA TINGGI	JOHORE
6.	MERSING	13888	MERSING	JOHORE
7.	MUAR	65151	MUAR	JOHORE
8.	TANGKAK	13251	MUAR	JOHORE
9.	PONTIAN KECHIL	21789	PONTIAN	JOHORE
10.	SEGAMAT	34008	SEGAMAT	JOHORE
11.	LABIS	10629	SEGAMAT	JOHORE
12.	ALOR SETAR	69435	KOTA SETAR	KEDAH
13.	SUNGAI PETANI	45343	KUALA MUDA	KEDAH
14.	JITRA	13908	KUBANG PASU	KEDAH
15.	KULIM	26817	KULIM	KEDAH
16.	KOTA BHARU	167872	KOTA BHARU	KELANTAN
17.	PANGKAL KALONG	21628	KOTA BHARU	KELANTAN
18.	PERINGAT	13808	KOTA BHARU	KELANTAN
19.	KADOK	11711	KOTA BHARU	KELANTAN
20.	PASIR MAS	13402	PASIR MAS	KELANTAN
21.	KUALA KRAI	12607	KUALA KRAI	KELANTAN
22.	MALACCA TOWN	87494	MELAKA TENGAH	MALACCA
23.	BUKIT BAHRU	16887	MELAKA TENGAH	MALACCA
24.	KUALA PILAH	11954	KUALA PILAH	NEGRI SEMBILAN
25.	PORT DICKSON	24389	PORT DICKSON	NEGRI SEMBILAN
26.	SEREMBAN	132911	SEREMBAN	NEGRI SEMBILAN
27.	BAHAU	10260	JEMPOL	NEGRI SEMBILAN
28.	BENTONG	22921	BENTONG	PAHANG
29.	KUANTAN	131457	KUANTAN	PAHANG
30.	KUALA LIPIS	10183	LIPIS	PAHANG
31.	RAUB	22907	RAUB	PAHANG
32.	MENTAKAB	13305	TEMERLOH	PAHANG
33.	BUTTERWORTH	77982	S.P.UTARA	PENANG
34.	BUKIT MERTAJAM	28675	S.P.TENGAH	PENANG
35.	GEORGETOWN	248241	P.P.TIMUR LAUT	PENANG
36.	AYER ITAM	35550	P.P.TIMUR LAUT	PENANG
37.	TANJONG TOK KONG	13964	P.P.TIMUR LAUT	PENANG
38.	GELUGOR	12796	P.P.TIMUR LAUT	PENANG
39.	TANJONG BUNGA	10597	P.P.TIMUR LAUT	PENANG
40.	IPOH	293849	KINTA	PERAK
41.	KAMPAR	24626	KINTA	PERAK
42.	BATU GAJAH	10638	KINTA	PERAK
43.	KUALA KANGSAR	14539	KUALA KANGSAR	PERAK
44.	SG. SIPUT UTARA	23400	KUALA KANGSAR	PERAK
45.	TAIPING	146002	LARUT & MATANG	PERAK
46.	TELOK INTAN	49147	HILIR PERAK	PERAK
47.	KANGAR	12949	PERLIS	PERLIS
48.	KLANG	192080	KLANG	SELANGOR

APPENDIX 10 (cont'd.).

49. PETALING JAYA	207805	PETALING	SELANGOR
50. SHAH ALAM	19041	PETALING	SELANGOR
51. SERDANG BAHRU	15981	PETALING	SELANGOR
52. KAJANG/SG. CHUA	29301	ULU LANGAT	SELANGOR
53. AMPANG	12987	ULU LANGAT	SELANGOR
54. KUALA KUBU BAHRU	10038	ULU SELANGOR	SELANGOR
55. DUNGUN	28923	DUNGUN	TERENGGANU
56. KEMAMAN	15962	KEMAMAN	TERENGGANU
57. KUALA TERENGGANU	180296	K. TERENGGANU	TERENGGANU
58. KUALA LUMPUR	919610	WILAYAH PERSEKUTUAN	

SOURCES:(1) 1980 Population and Housing Census of Malaysia:Local Authority Areas: Population, Households and Living Quarters. Department of Statistics Malaysia, Kuala Lumpur.(June, 1982).
 (2) Federal Town and Country Planning Department Malaysia, Kuala Lumpur.

APPENDIX 11

APPENDIX 11: VARIABLES USED TO CALCULATE GINI COEFFICIENTS

1) Population Literacy

Variable: Population 10 years and older who are literate

Reference Variable: Total Population

2) Formal Schooling

Variable: Population 5 years and older who have/had formal schooling

Reference Variable: Total Population

3) Teachers

Variable: Number of Teachers

Reference Variable: Total Population

4) Infant Mortality Rate

Variable: Number of infant deaths (below 12 months)

Reference Variable: Number of live births

5) Maternal Mortality Rate

Variable: Number of maternal deaths due to puerperal causes

Reference Variable: Number of live births

6) Housing Stock

Variable: Number of occupied housing units

Reference Variable: Total Population

7) Flush Toilets

Variable: Number of occupied housing units having flush and pour-flush toilets

Reference Variable: Total occupied housing units

8) Piped-Water Supply

Variable: Number of occupied housing units having piped-water

Reference Variable: Total occupied housing units

9) Electricity

Variable: Number of occupied housing units having public-supply electricity

Reference Variable: Total occupied housing units

APPENDIX 11 (cont'd.).

10) Public Security

Variable: Number of public law enforcement personnel

Reference Variable: Total Population

11) Fire Service

Variable: Number of Fire Service personnel

Reference Variable: Total Population

12) Road Density

Variable: Road mileage (in miles)

Reference Variable: Total area

13) Postal Service

Variable: Number of Postal Service workers

Reference Variable: Total population

14) Professional and Technical Manpower

Variable: Number of professional and technical personnel

Reference Variable: Total labor force

15) Administrative and Managerial Manpower

Variable: Number of administrative and managerial manpower

Reference Variable: Total labor force

16) Government Officials

Variable: Number of government officials (see Appendix 1)

Reference Variable: Total population

17) Manufacturing Sector

Variable: Number of labor force in manufacturing sector

Reference Variable: Total labor force

18) Commercial Sector

Variable: Number of labor force in commercial sector

Reference Variable: Total labor force

19) Gross Domestic Product

Variable: Gross domestic product (in million)

Reference Variable: Total population

APPENDIX 11 (cont'd.).

20) Rural Telephone Booths

Variable: Number of rural telephone booths

Reference Variable: Total rural population

21) Agricultural Extension Service

Variable: Agricultural stations' acreage

Reference Variable: Total labor force in agriculture

22) Urban Population

Variable: Urban population

Reference Variable: Total Population

23) Large Urban Place

Variable: Population of places 20,000 and more

Reference Variable: Total Population

24) Female Literacy

Variable: Female 10 years and older who are literate

Reference Variable: Total female population 10 years and older

25) Female in Non-Agricultural Economic Activities

Variable: Female labor force in secondary and tertiary sectors

Reference Variable: Total female labor force

26) Above Poverty LineVariable: Labor force with mean monthly income earning more than
Malaysian R\$300/=

Reference Variable: Total labor force

27) Public Low-Cost Housing

Variable: Number of public low-cost housing units

Reference Variable: Total labor force with mean monthly income
less than Malaysian R\$300/=28) Malays in Agriculture

Variable: Malay labor force in agricultural occupations

Reference Variable: Total Malay labor force

APPENDIX 11 (cont'd.).

29) Malays in Manufacturing

Variable: Malay labor force in manufacturing sector

Reference Variable: Total labor force in manufacturing sector

30) Malays in Commerce

Variable: Malay labor force in commercial sector

Reference Variable: Total labor force in commercial sector

BIBLIOGRAPHY

BIBLIOGRAPHY

- Abdul Hamid bin Abdullah (1979). "Socio-Economic Regionalization and its Implications for Development Planning in Peninsular Malaysia." Ph.D. Dissertation, The University of Michigan.
- Abu Asmara bin Hj. Mohamed (1982). "Inequality and Poverty Among Rubber Smallholders in Malaysia." Ph.D. Dissertation, RijksUniversiteit, Gent, Belgium.
- Abu-Lughod, J. and Hay, Jr., R. eds. (1979). Third World Urbanization. New York, Methuen.
- Adarkwa, K.K. (1982). "Spatial Aspects of Regional Inequalities and Development in Ghana." Ph.D. Dissertation, Michigan State University.
- Adelman, I. (1975). "Growth, Income Distribution, and Equity Oriented Development Strategies," World Development, vol. 3, no. 2-3, Feb.-March.
- Adelman, I. (1978). Theories of Economic Growth. Stanford, Stanford University Press.
- Adelman, I. and Morris, C.T. (1967). Society, Politics and Economic Development. Baltimore, Johns Hopkins University Press.
- Adelman, I. and Morris, C.T. (1972). An Anatomy of Income Distribution Patterns in Developing Nations. IBRD Economic Staff Working Paper no. 116. Washington, IBRD.
- Adelman, I. and Morris, C.T. (1973). Economic Growth and Social Equity in Developing Countries. Stanford, Stanford University Press.
- Ahmad, Q.K. and Hossain, M. (1980). "Economic Development Through Peoples' Participation On A Self-Help Basis: Lessons From Ulashi (Bangladesh)," in J. Friedmann and C. Weaver. Territory and Function. Berkeley, UCLA, pp.217-225.

- Ahluwalia, M.T. (1974). "Income Inequality: Some Dimensions of the Problem," Finance and Development, vol. 11, no. 3, pp. 3-8.
- Ahluwalia, M.S. (1976). "Inequality, Poverty and Development," Journal of Development Economics, vol. 3, pp.307-342.
- Ahluwalia, M.S. and Chenery, H. (1974). "The Economic Framework," in H. Chenery, M.S. Ahluwalia, C.L.G. Bell, J.H. Duloy and R. Jolly. Redistribution with Growth. London,
- Ahluwalia, M.S., Carter, N.G. and Chenery, H.B. (1979). "Growth and Poverty in Developing Countries," Journal of Developing Economics, vol. 6, no. 3, Sept., pp. 299-341.
- Ahmad Idris bin Mohd. Noor (1983). "Spatial and Sectoral Implications of the New Economic Policy: A Case Study of Peninsular Malaysia, 1970-1990." Ph.D. Dissertation, University of Southern California.
- Alker, H.R., Jr. (1979). "Measuring Inequality," in E.R. Tufte. The Quantitative Analysis of Social Problems. Reading, Mass., Addison Wesley Publishing Company, pp. 191-211.
- Alonso, W. (1968). "Urban and Regional Imbalances in Economic Development," Economic Development and Cultural Change, vol. 17, no. 1, pp. 1-14.
- Anand, S. (1983). Inequality and Poverty in Malaysia. New York, Oxford University Press.
- Appalraju, J. and Safier, M. (1976). "Growth Centre Strategies in Less Developed Countries," in A. Gilbert ed. Development Planning and Spatial Structure. London, John Wiley,
- Ariff, K.A.M. (1973). "Economic Development in Malaysia: Pattern and Perspective," The Developing Economies, vol. 11, pp. 371-391.
- Aris bin Othman (1984). "Growth, Equality and Poverty in Malaysia, 1957-1980." Ph.D. Dissertation, Boston University, Massachusetts.
- Armstrong, A. (1966) "Infant Mortality--Some Possible Determinants," Canadian Journal of Public Health, vol. 57, June, pp. 263-268.
- Atkinson, A.B. (1978). The Economics of Inequality. Oxford, Clarendon Press.

- Baer, W. (1964). "Regional Inequality and Economic Growth in Brazil," Economic Development and Cultural Change, vol. 12, no. 2.
- Baer, W. and Herve, M. (1966). "Employment and Industrialization in Developing Countries," Quarterly Journal of Economics, vol. 80, pp. 88-107.
- Bairoch, P. (1973). Urban Unemployment in Developing Countries. Geneva, International Labour Organization.
- Bandman, M.K. (1980). "Scheme and Composition of Optimization Models of Farming Spatial Production Complexes," in A.R. Kuklinski ed. Regional Development and Planning Perspectives. Leyden, Sijthoff.
- Baster, N. ed. (1972). Measuring Development: The Role and Adequacy of Development Indicators. London, Frank Cass.
- Bendavid-Val, A. (1983). Regional and Local Economic Analysis for Practitioners. New York, Praeger Publishers.
- Berry, B.J.L. (1961). "Method For Deriving Multi-Factor Uniform Regions," Przeglad Geograficzny, vol. 43, pp. 263-82.
- Berry, B.J.L. (1962). "Some Relations of Urbanization and Basic Patterns of Economic Development," in F.R. Pitts ed. Urban Systems and Economic Development. Oergon, pp.1-15.
- Berry, B.J.L. (1976). "Comparative Urbanization Strategies," Ekistics, vol. 42, pp.130-135.
- Bhooshan, B.S. and Misra, R.P. (1980). "Role of Small and Intermediate Towns in the Development of Mandya District," in B.S. Bhooshan ed. Toward Alternative Settlement Strategies. New Delhi, India, Heritage Publishers.
- Blackstone, W.T. ed. (1969). The Concept of Equality. Minneapolis, Burgess Publishing Company.
- Blalock, H.M., Jr. (1979). Social Statistics. rev. ed. New York, McGraw-Hill Book Company.
- Blandy, R. (1972). "Population and Employment Growth: An Introductory Empirical Exploration." International Labor Review, vol. 106, pp. 347-366.
- Boeke, J.H. (1953). Economic and Economic Policy of Dual Societies New York, Institute of Pacific Relations.

- Bogle, J.E. (1977). "Infrastructural for Rural Development," Ekistics, vol. 43, no. 257, pp.195-198.
- Bor, W. (1982). "Planning and Development in Developing Countries," Ekistics, vol. 49, no. 292, pp. 28-31.
- Boudeville, J.R. (1966). Problem of Regional Economic Planning. Edinburgh, University Press.
- Boudeville, J.R. (1971). "Planning Methods for Integrated Regional Development," Ekistics, vol. 32, no. 192, pp. 323-328.
- Boudon, R. (1974). "Educational Growth and Economic Equality," Quality and Quantity, vol. 8, no. 1, pp.1-10.
- Boulding, K. (1956). "Toward A General Theory of Growth," General Systems Yearbook, vol. 1, pp. 66-75.
- Bowles, S. (1972). "Schooling and Inequality from Generation to Generation." Journal of political Economy, vol. 80, pp. 219-251.
- Bracken, I. (1981). Urban Planning Methods: Research and Policy Analyses. New York, Methuen.
- Bradford, M.G. and Kent, W.A. (1978). Human Geography: Theories and Their Applications. New York, Oxford University Press.
- Brandt, W. (1980). North-South: A Programme For Survival: The Report of the Independent Commission on International Development Issues. London, Penguin.
- Brimer, M.A. and Pauli, L. (1971). Wastage in Education: A World Problem. Paris, UNESCO.
- Bruton, H.J. (1974). "Economic Development and Labor Use: A Review," in E.O. Edwards ed. Employment in Developing Countries. New York, Columbia University Press.
- Bruton, H.J. (1982). "The Malaysian Planning System," Third World Planning Review, vol. 4, no. 4, pp. 315-334.
- Bruton, H.J. (1985). "The Search for a Development Economics," World Development, vol. 13, no. 10/11, pp. 1099-1124.
- Brutzkus, E. (1975). "Centralized versus Decentralized Pattern of Urbanization in Developing Countries: An Attempt to Elucidate A Guideline Principle," Economic Development and Cultural Change, vol. 23, pp. 632-652.

- Bryant, C. and White, L.G. (1982). Managing Development in the Third World. Boulder, Colorado, Westview Press.
- Buchanan, K. (1975). Reflections on Education in the Third World. Nottingham, United Kingdom, Spokesman Books.
- Bussink, W. (1980). "Employment and Income Distribution in Peninsular Malaysia," in K. Young, W.C.F. Bussink, and P. Hasan eds. Malaysia: Growth and Equity in a Multi-Racial Society. Baltimore, The John Hopkins University Press.
- Butterfield, S.H. (1977). "Rural Development: Why It Is Hard For Developing Country Leadership To Get Started," International Development Review, vol. 19, pp. 8-12.
- Campbell, A., Converse, P.E. and Rodgers, W.L. (1976). The Quality of American Life. New York, Russell Sage Foundation.
- Cant, R.G. (1975). "Territorial Socio-Economic Indicators In Development Plans in the Asian Region," International Social Science Journal, vol. 27, no. 1, pp. 53-77.
- Carley, M.J. (1983). "Social Indicators Research," in K. Finsterbusch, L.G. Llewellyn and C.P. Wolf eds. Social Impact Assessment Methods. Beverly Hills, Sage Publications, pp. 151-168.
- Carter, H. (1973). The Study of Urban geography. London, E. Arnold Ltd.
- Chandrasekhar, S. and Hultman, C.W. ed. (1967). Problems of Economic Development. Boston, D.C. Heath and Company.
- Chan, P. (1979). "The Third Malaysia Plan and Social Economics," in C.K. Cheok, K.S. Mun and R. Thillainathan eds. Malaysia: Some Contemporary Issues in Socio-Economic Development. Kuala Lumpur, Malaysia, University of Malaya Press.
- Chatterji, M. ed. (1976). Space Location and Regional Development. London, Pion Limited.
- Chenery, H., Ahluwalia, M.S., Bell, C.L.G., Duloy, J.H., and Jolly, R. (1974). Redistribution with Growth. London.
- Chenery, H.B. and Syrquin, M. (1975). Patterns of Development -- 1950-1970. London, Oxford University Press.

- Check, C.K., Mun, K.S. and Thillainathan R. eds. (1971). Malaysia: Some Contemporary Issues in Socio-Economic Development. Kuala Lumpur, Malaysian Economic Association.
- Cheong, L.K. (1979). "Aspects of Regional Economic Problems and Policy in Malaysia," Southeast Asian Affairs. Singapore, Heinemann Educational Book (Asia) Ltd.
- Chetwynd, Jr., E. (1983). "Regional Analysis, market Towns and Rural Development," Horizons, vol. 2, pp. 15-21.
- Chiswick, B.R. (1968). "The Average Level of Schooling and the Intra-Regional Inequality of Income: A Clarification," American Economic Review, vol. 58, no. 3, pp. 495-500.
- Cubukgil, A. (1981). Urbanization in Developing Countries: Some Reflections on the Literature. Papers on Planning and Design, Paper no. 30.
- Coates, B.E., Johnston, R.J. and Knox, P.L. (1977). Geography and Inequality. New York, Oxford University Press.
- Cole, J.P. (1981). The Development Gap: A Spatial Analysis of World Poverty and Inequality. New York, John Wiley and Sons.
- Colm, G. and Geiger, T. (1967). "Country Programming as a Guide to Development," in S. Chandrasekhar and C.W. Hultman eds. Problems of Economic Development. Boston, D.C. Heath and Company, pp. 271-94
- Colman, D. and Nixon, F. (1978). Economics of Change in Less Developed Countries. Oxford, Philip Allan.
- Crooks, R.J. (1971). "Planning for Developing Countries," Journal of the Royal Town Planning Institute, vol.57, pp. 251-256.
- Dadzie, K.K.S. (1980). "Economic Development," Scientific American, vol. 243, no. 3, Sept.
- Dale, B. (1980). "Subjective and Objective Social Indicators in Studies of Regional Social Well-Being," Regional Studies, vol. 14, pp. 503-515.
- Dangschat, J. and Zirwes, M. (1982). "Social Indicators for Regional and Urban Planning," in J. Friedrichs ed. Spatial Disparities and Social Behavior. Hamburg, Hans Christian Verlag, pp. 208-19.

- Danhaeuser, N. (1981). "Commercial Relations Between Center and Periphery in Northern Luzon: Detrimental Dependence or Generative Independence," Phillipine Studies, vol. 29, pp. 144-169.
- Darkoh, M.B.K. (1977). "Growth Poles and Growth Centers With Special Reference To Developing Countries -- A Critique," The Journal of Tropical Geography, vol. 44, June, pp. 12-22.
- Datoo, B.A. and Gray, A.J.B. (1978). "Underdevelopment and Regional Planning in the Third World: A Critical Review," Canadian Journal of African Studies, vol. 13, no. 1, pp. 245-264.
- Davidoff, P. and Reiner, T.A. (1978). "A Choice Theory of Planning," in A. Faludi ed. A Reader in Planning Theory. New York, Pergamon Press, pp. 251-63.
- Davis, K. and Golden, H.H. (1954). "Urbanization and Development of Pre-Industrial Areas," Economic Development and Cultural Change, vol. 3, no. 1, pp.6-26.
- Dawson, J.A. and Unwin, D.J. (1976). Computing for Geographers. New York, Crane, Russak and Co., Inc.
- DeKadt, E. (1985). "Of Markets, Might and Mullahs: A Case For Equity, Pluralism and Tolerance in Development," World Development, vol. 13, no.4, pp. 549-556.
- Department of Statistics, Malaysia. (1972). 1970 Population and Housing Census of Malaysia, Volume 2 -- General Housing Tables. Kuala Lumpur, Government Printer.
- Department of Statistics, Malaysia. (1972). Vital Statistics, West Malaysia, 1970. Kuala Lumpur, Government Printer.
- Department of Statistics, Malaysia. (1975). Population and Housing Census of Malaysia, Volume 1 -- Basic Population Tables. Kuala Lumpur, Government Printer.
- Department of Statistics, Malaysia. (1980). 1980 Population and Housing Census of Malaysia: Preliminary Field Count Summary. Kuala Lumpur, Government Printer.
- Department of Statistics, Malaysia. (1982). Local Authority Areas: Population, Households, and Living Quarters, Kuala Lumpur, Malaysia.

- Department of Statistics, Malaysia. (1983). 1980 Population and Housing Census of Malaysia, Volume 2 -- General Report of the Population Census. Kuala Lumpur, Government Printer.
- Department of Statistics, Malaysia. (1983). Social Statistics Bulletin, Malaysia. Kuala Lumpur, Government Printer.
- Department of Statistics, Malaysia. (1984). 1980 Population and Housing Census of Malaysia, Volume 1 -- General Housing Tables. Kuala Lumpur, Government Printer.
- Department of Statistics, Malaysia. (1983). Vital Statistics, Peninsular Malaysia. Kuala Lumpur, Government Printer.
- De Souza, A.R. and Porter, P.W. (1974). The Underdevelopment and Modernization of the Third World. Commission on College Geography, Resource Paper no. 28, Washington D.C., Association of American Geographers.
- Desmond, G.M. (1975). "The Impact of National Development Policies on Urbanization in South and Southeast Asia," Ekistics, vol. 40, no. 238, pp. 167-173.
- Dixon, W.J. (1984). "Trade Concentration, Economic Growth and the Provision of Basic Human Needs," Social Science Quarterly, vol. 65, no. 3, Sept., pp. 767-774.
- Dos Santos, T. (1970). "The Structure of Dependence," American Economic Review, vol. 60, pp. 231-236.
- Drakakis-Smith, D. (1980). Urbanization, Housing and the Development Process. New York, St. Martin's Press.
- Drewe, P. (1979). "Integrated Regional Planning: As Applied To The Northern Netherlands," in H. Folmer and J. Oosterhaven eds. Spatial Inequalities and Regional Development. Boston, Martinus Nijhoff Publishers, pp. 219-254.
- Drewnowsky, J. (1970). Studies in the Measurement of Levels of Living and Welfare. Geneva, United Nations Research Institute for Social Development.
- Drewnowsky, J. (1974). On Measuring and Planning the Quality of Life. The Hague, Mouton.
- Dykema, E.R. (1986). "No View Without A Viewpoint: Gunnar Myrdal," World Development, vol. 14, no. 2, pp. 147-163.

- Easterlin, R.A. (1968). "Overview On Economic Growth," in D.L. Sills ed. International Encyclopaedia of the Social Sciences, vol. 4, New York.
- Easterlin, R.A. (1973). "Does Economic Growth Improve the Human Lot in P.A. David and M.W. Reder eds. Nations Are Households in Economic Growth. New York, Academic Press.
- Edwards, E.O. and Todaro, M.P. (1974). "Education, Society and Development: Some Main Themes and Suggested Strategies for International Assistance," World Development, vol. 2, no. 1, pp.
- Eisenstadt, S.N. (1973). Tradition, Change and Modernity. New York, John Wiley and Sons.
- Ellis, G.F.R. (1980). The 'Quality of Life' Concept: An Overall Framework for Assessment Schemes. Cape Town, Southern Africa Labour and Development Research Unit.
- El-Shakhs, S. (1972). "Development, Primacy and Systems of Cities," Journal of Developing Areas, vol.7, no. 1, Oct., pp. 11-36.
- El-Shakhs, S. (1976). "Planning for Systems of Settlements in Emerging Nations," Town Planning Review, vol. 47, no. 2, April, pp. 127-138.
- Elyas bin Omar (1980). Policy Analysis and Development in Malaysia. Kuala Lumpur, National Institute of Public Administration.
- Encel, S., Marstrand, P.K. and Page, N. eds. (1975). The Art of Anticipation. London, Martin Robertson.
- Engmann, E.V.T. (1973). "Spatial Convergence-Divergence: A Quantitative Approach to the Patterns of Delineating the Region," The Journal of Tropical geography, vol. 37, December, pp. 16-29.
- Faludi, A. ed. (1978). A Reader in Planning Theory. New York, Pergamon Press.
- Fields, G.S. (1980). Poverty, Inequality, and Development. New York, Cambridge University Press.
- Folmer, H. and Oosterhaven, J. (1979). "Spatial Inequalities and Regional Development: A Framework," in H. Folmer and J. Oosterhaven eds. Spatial Inequalities and Regional Development. Boston, Martinus Nijhoff Publishing, pp. 1-19.

- Ford, A.G. (1966). "Economic Growth: A Theoretical Outline," in W. Birmingham and A.G. Ford eds. Planning and Growth in Rich and Poor Countries, New York, Frederick A. Praeger, pp. 15-61
- Forde, E.R. (1968). The Population of Ghana: A Study of the Spatial Relationship of its Sociocultural and Economic Characteristics. Evanston, Illinois, Department of Geography, Northwestern University.
- Frank, A.G. (1967). Capitalism and Underdevelopment in Latin America: New York, Monthly Review Press.
- Frank, A.G. (1969). Latin America: Underdevelopment or Revolution. New York, Monthly Review Press.
- Frankel, H.S. (1952). The Economic Impact of Underdeveloped Countries. Oxford, Bladwell.
- Friedmann, J. (1966). Regional Development Policy: A Case Study of Venezuela. Cambridge, Mass., MIT Press.
- Friedmann, J. (1969). "The Role of Cities in National Development," American Behavioral Scientist, vol. 12, pp.13-21.
- Friedmann, J. (1972). "A Generalized Theory of Polarized Development," in Niles M. Hansen ed. Growth Centers in Regional Economic Development. New York, The Free Press, pp. 82-107.
- Friedmann, J. (1973). Urbanization, Planning and National Development. Beverly Hills, California, Sage Publications.
- Friedmann, J. (1979). "Basic Needs, Agropolitan Development, and Planning From Below," World Development, vol. 7, no. 6, pp. 607-613.
- Friedmann, J. (1980). "The Active Community: Towards a Political-Territorial Framework for Rural Development in Asia," Regional Development Dialogue, vol. 1, pp. 39-86.
- Friedmann, J. and Alonso, W. eds. (1964). Regional Development and Planning: A Reader. Cambridge, Mass., MIT Press.

- Friedmann, J. and Douglass, M. (1978). "Agropolitan Development: Towards A New Strategy for Regional Planning in Asia," in Fu-Chen Lo and Kamal Salih eds. Growth Pole Strategy and Regional Development Policy: Asian Experiences and Alternative Approaches. New York, Oxford University Press.
- Friedmann, J. and Weaver, C. (1980). Territory and Function: The Evaluation of Regional Planning. Beverly Hills, University of California Press.
- Friedrichs, J. ed. (1982). Spatial Disparities and Social Behavior: A Reader in Urban Research. Hamburg, Hans Christian Verlag.
- Furtado, C. (1977). "Development," International Social Science Journal, vol. 29, no. 4, pp. 628-650.
- Gan, H.J. (1974). More Equality. New York, First Vintage Book.
- Ghosh, P.K. ed. (1984). Development Policy and Planning. Westport, Conn., Greenwood Press.
- Gilbert, A. (1975). "A Note on the Incidence of Development in the Vicinity of a Growth Centre," Regional Studies, vol. 9, pp. 325-33.
- Gleave, M.B. (1981). "Urban Growth, Urbanization and Development in Sierra Leone, 1964-1974," Malaysian Journal of Tropical Geography, vol. 3, June 1981.
- Gore, C. (1984). Regions in Question: Space, Development Theory and Regional Policy. New York, Methuen.
- Goulet, D.A. (1968). "On the Goals of Development," Cross Currents, vol. 18, pp. 387-405.
- Goulet, D. (1971). The Cruel Choice. New York, Atheneum.
- Government of Malaysia. (1971). Second Malaysia Plan, 1971-75. Kuala Lumpur, Malaysia, Government Printer.
- Government of Malaysia. (1976). Third Malaysia Plan, 1976-80. Kuala Lumpur, Malaysia, Government Printer.
- Government of Malaysia. (1981). Fourth Malaysia Plan, 1981-85. Kuala Lumpur, Malaysia, Government Printer.
- Government of Malaysia. (1984) Mid-Term Review of the Fourth Malaysia Plan, 1981-85. Kuala Lumpur, Malaysia, Government Printer.

- Griffin, K. and Khan, A. (1978). "Poverty in the Third World: Ugly Facts and Fancy Models," World Development, vol. 6, March.
- Gugler, J. (1982). "Overurbanization Reconsidered," Economic Development and Cultural Change, vol. 31, pp. 173-189.
- Hagerstrand, T. (1967). Innovation Diffusion As A Spatial Process. Translated by A. Pred. Chicago, University of Chicago Press.
- Hall, P. ed. (1966). Von Thunen's Isolated States. New York, Pergamon.
- Hansen, N.M. ed. (1972). Growth Centers in Regional Economic Development. New York, The Free Press.
- Harbinson, F.H. (1967). "The Development of Human Resources," in S. Chandrasekhar and C.W. Hultman eds. Problems of Economic Development. Boston, D.C. Heath and Company, pp. 189-211.
- Hauser, P.M. (1959). "Demographic Indicators of Economic Development," Economic Development and Cultural Change, vol. 7, no. 2, pp. 98-116.
- Hay, R., Jr. (1979). "Patterns of Urbanization," in Janet Abu-Lughod and R. Hay, Jr. eds. Third World Urbanization. New York, Methuen, pp. 71-101.
- Hicks, J.R. (1959). Essays in World Economics. Oxford, Clarendon Press.
- Hicks, N.L. (1979). "Growth vs. Basic Needs: Is There A Trade-Off," World Development, vol. 7, pp. 985-994.
- Hicks, J.R. and Streeten, P. (1979). "Indicators of Development: The Search for a Basic Needs Yardstick," World Development, vol. 7, no. 6, June, pp. 567-80.
- Higgins, B. (1975). "The 'Unified' Approach to Development Planning at the Regional Level: The Case of Pahang Tenggara," in A.R. Kuklinski ed. Regional Development Planning: International Perspective. Leyden, Sijthoff.
- Higgins, B. (1980). "New Approaches to Regional Development: The Challenge of the 1980s," Regional Development Dialogue, vol. 1, no. 1, Spring, pp. v-x.
- Higgins, B. (1981). "National Development and Regional Policy," in B. Prantilla ed. National Development and Regional

Policy. Nagoya, Japan, Maruzen Asia.

- Higgins, B. (1983). "From Growth Poles to Systems of Interactions in Space," Growth and Change, vol. 14, no. 4, pp. 3-13.
- Hilhorst, J. (1968). "Regional Development Theory," in Multidisciplinary Aspects of Regional Development. Development Centre of the Organization for Economic Cooperation and Development, Montpellier.
- Hirschman, A.O. (1958). The Strategy of Economic Development. New Haven, Yale University Press.
- Hocksbergen, R. (1986). "Approaches to Evaluation of Development Interventions: The Importance of World and Life Views," World Development, vol. 14, no. 2, pp. 283-300.
- Hoe, Tan Loong (1982). The State and Economic Distribution in Peninsular Malaysia. Research Notes and Discussion Paper No. 31, Singapore, Institute of Southeast Asian Studies.
- Honjo, M. (1980). "Role of Government in Regional Development," Regional Development Dialogue, vol. 1, pp. 1-16.
- Horn, R.V. (1984). "Social Indicators for Development Planning and Analysis," in P.K. Ghosh ed. Development Policy and Planning: A Third World Perspective. Westport, Conn., Greenwood Press, pp. 166-91.
- Hoselitz, B.F. (1957). "Urbanization and Economic Growth in Asia," Economic Development and Cultural Change, vol. 6.
- Hoselitz, B.F. (1960). Sociological Aspects in Economic Growth. Glencoe, Ill., Free Press.
- Hoyle, B.S. ed. (1974). Spatial Aspects of Development. New York, John Wiley and Sons.
- Hunter, G. (1972). "Development -- The Search For A New Strategy," Overseas Development Institute Review, vol. 5, pp. 116-127.
- Illich, I. (1969). Celebration of Awareness. New York, Doubleday.
- Inayatullah (1967). "Toward a Non-Western Development Model of Development," in D. Lerner and W. Schramm eds. Communication and Change In the Developing Countries. Honolulu, University of Hawaii, East/West Center Press.

- Inkeles, A. (1966). "The Modernization of Man," in M. Weiner ed. Modernization: The Dynamics of Growth. New York, Basic, pp. 138-150.
- Islam, I. and Khan, H. (1985). "Income Inequality, Poverty and Socio-Economic Development in Indonesia: An Empirical Investigation," Asian Profile, vol. 13, pp. 139-51.
- International Labor Organization (ILO)(1970). Towards Full Employment: A Program for Colombia. Geneva, ILO.
- International Labor Organization (ILO)(1972). Employment, Incomes and Equity: A Strategy for Increasing Productive Employment in Kenya. Geneva, ILO.
- International Labor Organization (ILO)(1977). Meeting Basic Needs. Geneva, ILO.
- Jakobson, L. and Prakash, V. (1968). "Urbanization and Regional Planning in India," Ekistics, vol. 25, pp. 158-165.
- Jakobson, L. and Prakash, V. eds. (1971). Urbanization and National Development. Beverly Hills, California, Sage Publications.
- Jin-Bee, Ooi. (1976). Peninsular Malaysia. New York, Longman.
- Johari bin Mat (1983). Regional Development in West Malaysia: A Comparative Effectiveness Study of Jengka, Dara, Kejora and Ketengah. Kuala Lumpur, National Institute of Public Administration (INTAN), monograph.
- Johnson, R.J. (1978). Multivariate Statistical Analysis in Geography. New York, Longman.
- Jumper, S.R., Bell, T.L. and Ralston, B.A. (1980). Economic Growth and Disparities. Englewood Cliffs, New Jersey, Prentice-Hall Inc.
- Kantsebovskaya, V. (1976). "Some Definitions of Urbanization in Geographic Literature and the Relevant Ideas," in S. Manzoor Alam and V.V. Pokshishevsky eds. Urbanization in Developing Countries. Hyderabad, India, Osmania University, pp. 1-23.
- Kasper, W. (1973). "A New Strategy for Malaysia's Economic Development in the 1970s ?" UMBC Economic Review, vol. 9, no. 1, pp. 16-28.

- Katchamat, S. (1978). "Analysis and Evaluation of the National Economic Development Plans of Thailand, 1961-1971 from a Comparative Regional-Urban Development Perspective," Ph.D Dissertation, Michigan State University.
- Khan, M.H. (1981). "A Comparative Study of Socio-economic Development: Asia," Asian Profile, vol. 9, pp. 309-19.
- Knox, P.L. (1974). "Level of Living: A Conceptual Framework for Monitoring Regional Variations in Well-Being," Regional Studies, vol. 8, pp. 11-19.
- Knox, P.L. (1975). Social Well-Being: A Spatial Perspective. London, Oxford University Press.
- Knox, P.L. (1976). "Social Well-Being and North Sea Oil: An Application of Subjective Social Indicators," Regional Studies, vol. 10, pp. 423-432.
- Knox, P.L. (1982). "Regional Inequality and the Welfare State: Convergence and Divergence in Levels of Living in the United Kingdom, 1951-1971," Social Indicators Research, vol. 10, no.3, April, pp. 319-335.
- Knox, P.L. and MacLaran, A. (1977). "Values and Perceptions in Descriptive Approach to Urban Social Geography," in D. Herbert and R.J. Johnston eds. Geography and the Urban Environment. London, J. Wiley and Sons, pp. 197-247.
- Kow, Lim Heng (1978). The Evolution of the Urban System in Malaya. Kuala Lumpur, Malaysia, University of Malaya Press.
- Krueckeberg, D. and Silvers, A. (1974). Urban Planning Analysis: Methods and Models. New York, John Wiley.
- Kuznets, S. (1953). Share of Upper Income Groups in Income and Savings. New York, National Bureau of Economic Research.
- Kuznets, S. (1955). "Economic Growth and Income Inequality," American Economic Review, vol. 45, no. 1, March, pp.1-28.
- Kuznets, S. (1963). "Quantitative Aspects of the Economic Growth of Nations VIII: Distribution of Income By Size," Economic Development and Cultural Change, vol. 11, no. 2, (Jan)., pt. 2, pp. 1-80.
- Lampard, E.E. (1965). "Historical Aspects of Urbanization," in P.M. Hauser and L.F. Schnore eds. The Study of Urbanization. New York, pp. 519-520.

- Lakshaman, T.R. (1982). "A System Model of Rural Development," World Development, vol. 10, no. 10, pp. 885-898.
- Leinbach, T.R. (1972). "The Spread of Modernization in Malaya: 1895-1969," Tijdschrift Voor Economische En Sociale Geografie, vol. 63, July/August, pp. 262-77.
- Lentnek, B. (1980). "Regional Development and Urbanization in Latin America: The Relationship of National Policy to Spatial Strategies," in R.N. Thomas and J.M. Hunter eds. Internal Migration Systems in the Developing World. Cambridge, Mass., Achenkman Pub. Co., pp. 82-113.
- Lerner, D. (1965). The Passing of Traditional Society. New York, Free Press.
- Leupolt, M. (1977). "Integrated Rural Development: Key Elements of An Integrated Rural Development Strategy," Sociologia Ruralis, vol. 17, no. 1/2, pp. 7-28.
- Levy, M.J. (1966). Modernization and Structure of Societies. 2 vols., Princeton, New Jersey, Princeton University Press.
- Lewis, J.P. (1964). Quiet Crisis in India. New York, Double Day and Company
- Lewis, W.A. (1954). "Economic Development With Unlimited Supplies of Labor," Manchester School of Economics Studies, vol. 22, May, pp. 139-191.
- Lewis, W.A. (1955). The Theory of Economic Growth. London, Allen and Unwin.
- Lewis, W.A. (1961). "Is Economic Growth Desirable?" in B.Okun and W. Richardson eds. Studies in Economic Development. New York, Holt, Rinehart and Winston, pp. 478-491.
- Lewis, W.A. (1966). Development Planning. New York, Harper and Row.
- Lewis, W.A. (1976). "Development and Distribution," in A Cairncross and M. Puri eds. Employment, Income Distribution and Development Strategy. London, Macmillan.
- Lim, D. (1982). "The Political Economy of the New Economic Policy in Malaysia," Review of Indonesian and Malaysian Affairs, vol. 16, no. 1, pp. 48-81.

- Lindblom, C.E. (1978). "The Science of 'Muddling Through'," in A. Faludi. ed. A Reader in Planning Theory. New York, Pergamon Press, pp. 151-169.
- Liu, Ben-Chieh (1973). The Quality of Life in the United States -- 1970: Index, rating and Systems. Kansas City, Missouri, Midwest Research Institute.
- Lo, Fu-Chen and Kamal Salih eds. (1978). Growth Pole Strategy and Regional Development Policy. New York, Pergamon Press.
- Logan, M.I. (1972). "The Spatial System and Planning Strategies in Developing Countries," Geographical Review, vol. 62, pp. 229-244.
- Logan, M.I. (1980). "Editorial," Regional Development Dialogue, vol. 1, pp. iii-vi.
- Losch, A. (1954). The Economics of Location. New Haven, Connecticut, Yale University Press.
- Mabogunje, A.L. (1981). The Development Process: A Spatial Perspective. New York, Holmes and Meier Publications, Inc.
- Mahbub ul Haq (1973). "The Crisis in Development Strategies," in C.K. Wilber ed. The Political Economy of Development and Underdevelopment. New York, Random House.
- Mangahas, M. (1982). "Measurement of Poverty and Equity: Some ASEAN Social Indicators Experience," Social Indicators Research, vol. 13, no. 3, (Oct.), pp. 253-279.
- Maslow, A. (1970). Motivation and Personality. New York, Macmillan.
- Mayer, H.M. and Kohn, C.F. (1959). Readings in Urban Geography. Chicago, University of Chicago Press.
- McClelland, D.G. (1963). "Motivational Patterns in Southeast Asia with Reference to the Chinese case," Journal of Social Issues, vol. 29, no. 17, Jan.
- McGee, T.G. (1971). The Urbanization Process in the Third World. London, G. Bell and Sons, Ltd.
- McGee, T.G. (1974). "In Praise of Tradition: Towards A Geography of Anti-Development," Antipode: A Radical Journal of Geography, vol. 6, pp. 30-47.

- McGranahan, D. (1972). "Development Indicators and Development Models," in Nancy Baster. ed. Measuring Development: The Role and Adequacy of Development Indicators. London, Frank Cass, pp. 91-102.
- Meerman, J. (1979). "Public Services for Basic Needs in Malaysia," World Development, vol. 7, no. 6, pp. 615-634.
- Mehretu, A. (1986). "Towards A Framework For Spatial Resolution Of Structural Polarity in African Development," Economic Geography, vol. 62, no. 1, January, pp. 30-51.
- Mehretu, A. and Campbell, D.J. (1981-82). "Regional Planning For Small Communities in Rural Africa: A Critical Survey," Rural Africana, vol. 12-13, Winter-Spring, pp. 91-110.
- Mehretu, A., Wittick, R.I. and Piggozi, B.W. (1983). "Spatial Design For Basic Needs in Eastern Upper Volta," The Journal Of Developing Areas, vol. 17, pp. 383-394.
- Mellor, J. (1976). The New Economics of Growth. Ithaca, Cornell.
- Misra, R.P. (1980). "Target Groups and Regional Development: Case for a More Comprehensive Social Policy," Regional Development Dialogue, vol. 1, no. 1, Spring.
- Misra, R.P. and Prantilla, B. (1983). "Emerging Trends in Regional Development Planning: The Southeast Asian Experiences," in L. Chatterjee and P. Nijkamp. eds. Urban and Regional Policy Analysis in Developing Countries. Aldershot, England, Gower Publishing Co. Ltd., pp. 19-41.
- Morrill, R.L. and Wohlenberg, E.H. (1971). The Geography of Poverty in the United States. New York, McGraw-Hill Book Company.
- Morris, M.D. (1979). Measuring the Condition of the World's Poor. New York, Pergamon.
- Muniappan, P. (1982). "Poverty Studies and the Determination of Social Policy in Malaysia," Review of Indonesian and Malaysian Affairs, vol. 16, no. 1, pp. 1-25.
- Myrdal, G. (1957). Economic Theory and Underdeveloped Regions. London, Duckworth.
- Myrdal, G. (1968). Asian Drama: An Inquiry Into The Poverty of Nations. New York.
- Myrdal, G. (1971). The Challenge of World Poverty. New York, Penguin.

- Myrdal, G. (1975). "What is development?" Ekistics, vol. 237, pp. 84-87.
- National Institute of Public Administration, Malaysia. (1983). National Seminar on District Officers, Peninsular Malaysia, 2nd-4th February, 1983. Organized by the National Institute of Public Administration, Malaysia with Cooperation of Central Agencies and Relevant Ministries.
- Nijkamp, P. (1983). "Information Systems for Urban and Regional Planning in Developing Countries," in L. Chatterjee and P. Nijkamp ed. Urban and Regional Policy Analysis in Developing Countries. Aldershot, England, Gower, pp. 159-169.
- Nijkamp, P. and Van Pelt, M. (1983). "Urban and Regional Impact Analysis in Development Planning," in M. Chatterji and P. Nijkamp. Urban and Regional Policy Analysis in Developing Countries. Aldershot, England, Gower, pp. 171-79.
- Nyerere, J. (1968). Freedom and Socialism: A Selection From Writings and Speeches, 1965-1967. Dar-es-Salam, Oxford University Press.
- OECD (1976). Measuring Social Well-Being: A Progress Report on the Development of Social Indicators. Paris, Organization for Economic Cooperation and Development.
- Okun, B. and Richardson, R.W. ed. (1961). Studies in Economic Development. New York, Holt, Rinehart and Winston.
- Onn, F.C. and Wan Abdul Rahim. (1979). "Regional Economic Differences: A Case Study," in C.K. Cheok, K.S. Mun, R. Thillainathan eds. Malaysia: Some Contemporary Issues in Socio-Economic Development. Kuala Lumpur, P.E. Malaysia, pp. 18-34
- Osborn, J. (1974a). "The Geography of Development Policy: Reflections on Malaysia," in B.S. Hoyle ed. Spatial Aspects of Development. New York, John Wiley and Sons, pp. 345-364.
- Osborn, J. (1974b). Area, Development Policy and the Middle City in Malaysia. Chicago, The University of Chicago, Department of Geography, Research Paper no. 153.
- Overholt, M.B., Cloud, K. and Austin, J.E. ed. (1986). Gender Roles in Development Projects. Connecticut, Kumarian Press.

- Oyebanji, J.O. (1982). "Quality of Life in Kwara State, Nigeria: An Exploratory Geographical Study," Social Indicators Research, vol. 11, pp. 301-17.
- Park, R.E. et al. (1925). The City. Chicago, University of Chicago Press.
- Patnaik, S.C. (1982). Economics of Regional Development and Planning in Third World Countries. Atlantic Highlands, New Jersey, Humanities Press.
- Paukert, F. (1973). "Income Distribution at Different Levels of Development: A Survey of Evidence," International Law Review, vol. CVIII, nos. 2-3, August-September, pp. 97-125.
- Pedersen, P.O. (1978). "Innovation Diffusion Within and Between National Urban Systems," in L.S. Bounds and J.W. Simmons (eds.), System of Cities: Readings on Structure, Growth, and Policy. New York, Oxford University Press.
- Peet, R. (1977) Radical Geography: An Alternative Viewpoint On Contemporary Social Issues. London, Methuen.
- Perloff, H. (1971). "Key Features of Regional Planning," in B.G. Jones ed. Regional Development Planning. Ithaca, New York, Cornell University Press, pp. 1-26.
- Poister, T.H. (1978). Public Program Analysis: Applied Research Method Baltimore, Md., Uni. Park Press.
- Portes, A. (1974). "Modernity and Development: A Critique," Studies in Comparative International Development, vol. 9, Spring, pp. 247-79.
- Portes, A. (1976). "On the Sociology of National Development: Theories and Issues," American Journal of Sociology, vol. 82, pp. 55-85.
- Prantilla, B. ed. (1981). National Development and Regional Policy. Nagoya, Japan, Maruzen Asia.
- Pryor, R.J. (1973). "The Changing Settlement System of West Malaysia," The Journal of Tropical Geography, vol. 37, pp. 53-67.
- Quazi, A.M. (1982). "Some Observations On Rural Development In Malaysia," Third World Planning Review, vol. 14, no. 4, pp. 335-344.

- Ram, R. (1982). "International Inequality and The Basic Needs Indicators," Journal of Development Economics, vol. 10, no. 1, pp. 113-117.
- Ranis, G. (1977). "Development Theory Three-Quarters Century," in Manning Nash ed. Essays On Economic Development and Cultural Change. University of Chicago.
- Ranis, G. (1977b). "Growth and Distribution: Trade-Offs or Complements ?" in W. Loehr and J.P. Powelson eds. Economic Development and Income Distribution Boulder, Col., Westview Press.
- Rao, M.V.S. (1984). "Socio-Economic Indicators for Development Planning," in P.K. Ghosh ed. Development Policy and Planning: A Third World Perspective. Westport, Conn., Greenwood Press, pp. 192-220.
- Rao, V.M. (1969). "Two Decompositions of Concentration Ratio," Journal of the Royal Statistical Society, series A, vol. 132, pt. 3.
- Redfield, R. and Singer, M. (1954). "The Cultural Role of Cities," Economic Development and Cultural Change, vol. 3, no. 1, pp. 53-73.
- Rhoda, R. (1982). Urban and Regional Analysis for Development Planning. Boulder, Colorado, Westview Press.
- Richardson, R.W. (1973). Regional Growth Theory. London, Macmillan.
- Rivkin, M.D. (1967). "Urbanization and National Development: Some Approaches to the Dilemma," Ekistics, vol. 23, no. 135, February, pp. 118-119.
- Robertson, D.J. (1970). "Regional Development Planning Policy," in B.G. Jones. ed. Regional Development Planning. New York, Cornell University.
- Robbins, S. (1976). The Administrative Process: Integrating Theory and Practice. Englewood Cliffs, New Jersey, Prentice Hall.
- Rogers, E.M. ed. (1976). Communication and Development. Beverly Hill, California, Sage.
- Rondinelli, D.A. (1979/80). "Balanced Urbanization, Spatial Integration, and Economic Development in Asia: Implications for Policy and Planning," Urbanism: Past and Present, Winter, pp. 13-29.

- Rondinelli, D.A. (1982). "Intermediate Cities in Developing Countries," Third World Planning Review, vol. 4, no. 4, pp. 381-386.
- Rondinelli, D.A. (1983). Secondary Cities in Developing Countries - Policies for Diffusing Urbanization. Beverly Hills, California, Sage Publications.
- Rondinelli, D.A. (1985). "Equity, Growth, and Development: Regional Analysis in Developing Countries," Journal of the American Planning Association, vol. 51, no. 4, Autumn, pp. 434-448.
- Rondinelli, D.A. and Evans, H. (1983). "Integrated Regional Development Planning: Linking Urban Centers and Areas in Bolivia," World Development, vol. 11, pp.
- Rondinelli, D.A., Lombardo, J.F. and Yeh, Gar-On A. (1979). "Dispersed Urbanization and Population Planning in Asia," Ekistics, vol. 46, pp. 206-209.
- Rondinelli, D.A. and Ruddie, K. (1977). "Integrating Spatial Development," Ekistics, vol. 43, no. 257, pp. 185-194.
- Salih, Kamal (1977). "Unbalanced Growth and Persistent Poverty - The Consequences of Unequal Access in Urban and Rural Development," in Mokhzani B. A. R. and Khoo Siew Mun eds. Some Case Studies on Poverty in Malaysia. Kuala Lumpur, Malaysia, University of Malaya Press.
- Santos, T.D. (1970). "The Structures of Dependence," American Economic Review, vol. 60, no. 2, pp. 231-236.
- Schultz, T.W. (1964). Transforming Traditional Agriculture. New Haven, Conn., Yale University Press.
- Schultz, T.W. (1967). "Investment in Human Capital," in S. Chandrasekhar and C.W. Hultman ed. Problems of Economic Development. Boston, D.C. Heath and Company, pp. 3-19.
- Schumacher, E.F. (1973). Small Is Beautiful: Economics As If People Mattered. New York, Harper.
- Schramm, W. and Lerner, D. eds. (1976). Communication and Change in the Developing Countries: 10 Years After. Honolulu, Uni. of Hawaii, East/West Center Press.
- Scott, W. (1978). Measurement and Analysis of Progress at Local Level, vol. 1, An Overview. Report No. 78.1, Geneva, United Nations.

- Scott, W. (1979). "Poverty Monitoring In Developing Countries," Development and Change, vol. 10, pp. 445-60.
- Seers, D. (1972). "What Are We trying to Measure," in Nancy Baster ed. Measuring Development: The Role and Adequacy of Development Indicators. London, Frank Cass, pp. 21-36.
- Seers, D. (1973). "The Transmission of Inequality," Ekistics, vol. 36, no. 212, pp. 163-169.
- Seers, D. (1977). "The New Meaning of Development," International Development Review, vol. 19, no. 3, pp. 2-7.
- Sen, A.K. (1973). On Economic Inequality. Oxford, Clarendon Press.
- Shaffer, J.D. (1980). "Food System Organization and Performance: Toward a Conceptual Framework," American Journal of Agricultural Economics, vol. 62, no. 2, May, pp. 310-13.
- Shamsul, A.B. (1983). "The Politics of Poverty Eradication: The Implementation of Development Projects in a Malaysian District," Pacific Affairs, vol. 56, no. 3, Fall, pp. 455-476.
- Simmons, J. (1979). "Education for Development, Reconsidered," World Development, vol. 7, pp. 1005-1016.
- Singh, A. (1979). "The Basic Needs Approach to Development vs The New International Economic Order: The Significance of Third World Industrialization," World Development, vol. 7, no. 66, pp. 585-606.
- Slater, D. (1973). "Geography and Underdevelopment," Antipode, December.
- Slater, D. (1975). "Underdevelopment and Spatial Inequality: Approaches to the Problems of Regional Planning in the Third World," Progress in Planning, vol. 4, part 2, pp. 97-167.
- Smelser, N.J. (1966). "The Modernization of Social Relations," in M. Weiner ed. Modernization: The Dynamics of growth. New York, Basic, pp. 110-121.
- Smith, D.M. (1973). The Geography of Social Well-Being in the United States: An Introduction to Territorial Social Indicators New York, McGraw-Hill.

- Smith, D.M. (1982). Where the Grass is Greener: Living in an Unequal World. Baltimore, The John Hopkins University Press.
- Smith, J.A. (1974). "Regional Inequalities in Internal Communications: The Case of Uganda," in B.S. Hoyle ed. Spatial Aspects of Development. New York, John Wiley and Sons, pp. 306-321.
- Snodgrass, D.R. (1980). Inequality and Economic Development in Malaysia. New York, Oxford University Press.
- Socio-Economic Research Unit (SERU), P.M.'s Department. (1983). Development Trends in Malaysia (1970-81): An Application of Socio-Economic Indicators. Kuala Lumpur, SERU, Prime Minister's Department.
- Soja, E.W. (1976). Spatial Inequality in Africa. Los Angeles, School of Architecture and Urban Planning, University of California at Los Angeles.
- Soja, E.W. and Tobin, R.J. (1979). "The Geography of Modernization: Paths, Patterns, and Processes of Spatial Changes in Developing Countries," in Janet Abu-Lughod and Richard Hay, Jr. ed. Third World Urbanization. New York, Methuen, pp. 155-64.
- Sovani, N.V. (1964). "The Analysis of Over-Urbanization," Economic Development and Cultural Change, vol. 12, pp. 113-133.
- Spodek, K.H. (1976). Urban-Rural Integration in Regional Development. Chicago, The University of Chicago.
- Srivinas, M.N. (1977). "Village Studies, Participant Observation and Social Science Research in India," in Village Studies in the Third World. New Delhi, Hindustan Publishing Corporation.
- Stohr, W.B. and Taylor, D.R.F. eds. (1981). Development From Above or Below ? The Dialectics of Regional Planning in Developing Countries. New York, John Wiley and Sons.
- Stohr, W.B. and Todtling, F. (1977). "Spatial Equity--Some Anti-theses to Current Regional Doctrine," Papers of the Regional Science Association, vol. 38, pp. 33-53.

- Stohr, W.B. and Todtling, F. (1979). "Spatial Equity: Some Antitheses to Current Regional Development Doctrine," in H. Folmer and J. Oosterhaven eds. Spatial Inequality and Regional Development. Boston, Martinus Nijhoff Publishing, pp. 133-160.
- Streeten, P. (1972). The Frontiers of Development Studies. London, Macmillan.
- Streeten, P. (1977). "The Distinctive Features of a Basic Needs Approach to Development," Institute of Development Review
- Streeten, P. (1979). "Basic Needs: Premises and Promises," Journal of Policy Modeling, vol. 1, pp. 136-146.
- Streeten, P. (1980). "Development Ideas in Historical Perspective: The New Interests in Development," Regional Development Dialogue, vol. 1, no. 2, Autumn, pp. 1-28.
- Streeten, P. (1981). Development Perspectives. New York, St. Martin's Press.
- Streeten, P. and Burki, S. (1977). "Basic Needs: An Issue Paper," World Bank (mimeo).
- Stuckey, B. (1975). "Spatial Analysis and Economic Development," Development and Change, vol. 6, no. 1, Jan., pp. 89-106.
- Sunkel, O. (1974). "External Economic Relationship and the Process of National Development: Suggestion For An Alternative Analytical Framework," in R.B. Williamson, W.P. Glade, and K.M. Schmitt eds. Latin America - US Economic Interactions. Washington, D.C., American Enterprise Institute for Public Policy Research, pp. 27-39.
- Szentes, T. (1971). The Political Economy of Underdevelopment. Budapest, Akademiai Kiado.
- Takamori, H. and Yamashita, S. (1973). "Measuring Socioeconomic Development: Indicators, Development Paths, and International Comparisons," The Developing Economies, vol. XI, no. 2, June, pp. 111-45.
- Taylor, J.L. and Williams, D.G. eds. (1982). Urban Planning Practice in Developing Countries. New York, Pergamon Press.
- Tendler, J. (1975). Foreign Aid. Baltimore, The Johns Hopkins University Press.

- Tisdale, H. (1942). "The Process of Urbanization," Social Forces, pp. 311-316.
- The New Straits Times, Malaysia, July 28th, 1983.
- The New Straits Times, Malaysia, March 15th, 1986.
- The New Straits Times, Malaysia, December 18th, 1986.
- Todaro, M. (1977a). Economic Development in the Third World. London, Longmans.
- Todaro, M.P. (1977b). Economics for the Developing World. Hong Kong, Wilture Enterprise (international) Ltd.
- Town and Country Planning Department, Malaysia. (1984). Urbanization of Traditional Villages. Kuala Lumpur, Town and Country Planning Department.
- Tun Hj. Abdul Razak. (1973). "Development Planning in Malaysia," Address at the Malaysian Society for Public Administration (MASPA), Kuala Lumpur, Jan. 26th, 1973, UMBC Economic Review, vol. 9, no. 1, pp. 4-7.
- Turabian, K.L. (1973). A Manual for Writers. Fourth Edition. Chicago, The University of Chicago Press.
- United Nations Organization (1951). Measures for the Economic Development of Underdeveloped Countries. New York, U.N.O.
- United Nations Organization (1954). Report on International Definition and Measurement of Standards of Living. Report by Committee of Reports, New York, U.N.O.
- UNRISD (1976). Research Data bank of Development Indicators. Geneva, United Nations Research Institute for Social Development.
- United Nations, Social Development Division. (1969). "Social Policy and the Distribution of Income in Nation," Ekistics, vol. 28, no. 169, pp. 399-405.
- United Nations, Department of Economic Affairs. (1971). Measures for the Economic Development of Under-development Countries. New York.
- Utusan Malaysia, December 18, 1986. (Malay newspaper).
- Vogeler, I. (1976). "The Dependency Model Applied To A Mexican Tropical Frontier Region," Journal of Tropical Geography, vol. 43, December, pp. 63-68.

- Vyasulu, V. (1977). The Paradox of Static Change. New Delhi, India, Sterling Publishers Private Ltd.
- Waldman, L.K. (1977). "Types and Measures of Inequality," Social Science Quarterly, vol. 58, no. 2, Sept., pp. 229-241.
- Wallerstein, I. (1974). The Modern World-System--Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century. New York, Academia Press.
- Warmali, S. (1983). Service Provision and Rural Development in India. Research report no. 37. Washington, D.C., International Food Policy Research Institute.
- Waterston, A. (1967). "A Hard Look At Development Planning," Ekistics, vol. 23, no. 134, pp. 13-16.
- Waterston, A. (1974/75). "A Viable Model For Rural Development," Finanace and Development.
- Weaver, J.H., Jameson, K.P., and Blue, R.N. (1978). "Growth and Equity: Can They Be Happy Together ?" International Development Review, vol. 1, pp. 20-27.
- Webster, D.R. (1981). "Regional Development Planning: Persistent Paradigm or New Consensus," Ekistics, vol. 284, Sept., pp. 343-345.
- Webster's Third New International Dictionary. (1981). Chicago, Encyclopaedia Britannica, Inc.
- Webber, M.V. (1978). "Comprehensive Planning and Social Responsibility: Towards an AIP Consensus on the Profession's Roles and Purposes," in A. Faludi ed. A Reader in Planning Theory. New York, Pergamon Press, pp. 95-126.
- Weinand, H.C. (1973). "Some Spatial Aspects of Economic Development in Nigeria," Ekistics, vol. 36, no. 214, September, pp. 182-188.
- Weiner, M. (1966). "Introduction," in M. Weiner ed. Modernization: The Dybanics of Growth. New York, Basic, pp.1-14.
- Weisskopf, T.E. (1983). "Economic Development and the Development of Economics: Some Observations from the Left," World Development, vol. 11, no. 10, pp. 895-899.

- Weissmann, E. (1968). "Relationship of Planning and Implementation," in International Union of Local Authorities (IULAs). Urbanization in Developing Countries. Report of a Symposium held in Dec., 1967 at Noordwijk, Netherlands. The Hague, Martinus Nijhoff, pp. 97-105.
- Wheeler, D. (1980). "Basic Needs Fulfillment and Economic Growth: A Simultaneous Model," Journal of Development Economics, vol. 7, pp. 435-451.
- Williamson, J.G. (1965). "Regional Inequality and the Process of National Development: A Description of the Patterns," Economic Development and Cultural Change, vol. 13, pp. 3-84.
- Wilson, J. (1966). Equality. London, Hutchinson.
- Wong, I.F.T. (1982). The Present Land Use of Peninsular Malaysia, Volume 1 -- Texts. Ministry of Agriculture, Kuala Lumpur, Government Printer.
- Wood, H.A. (1977). "Toward A Geographical Concept of Development," The Geographical Review, vol. 67, pp. 462-68.
- World Bank. (1976). "Village Water Supply," A World Bank Paper.
- Wright, C.L. (1978). "Income Inequality of Economic Growth: Examining the Evidence," The Journal of Developing Areas, vol. 13, pp. 49-66.
- Yeung, Y.M. (1976). "Southeast Asian Cities: Patterns of Growth and Transformation," in Brian J.L. Berry ed. Urbanization and Counter-Urbanization. Beverly Hills, California, Sage Publications, pp. 285-310.
- Ziegler, J.A. and Britton, C.R. (1981). "A Comparative Analysis of Socioeconomic Variations in Measuring the Quality of Life," Social Science Quarterly, vol. 62, no. 2, June, pp. 303-312.