



DECLARATION

I hereby declare that this is my original work and has not been presented for a degree in any other University.

(Emmanuel Sarpong)

BUTTERWORTH - A GROWTH POLE

by

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A B S T R A C T

In recent times much attention has been focussed on the spatial development of countries, especially in those countries of the world referred to as the Third World. Many factors have given rise to this interest. It has arisen due in part to the important position of development today both as a means of enhancing the wealth of man's environment, and as a means of raising living standards. It is also a result of the problems being experienced by many countries due to the large spatial inequalities in development that has arisen in these countries. In Transkei a history of racial discrimination and the impact of its close relationship to its former colonial power, South Africa, have combined to produce a spatial pattern of development in which inequalities have become evident. Unfortunately, meaningful efforts have not been evolved to manage the inequalities in such a way as to achieve a balance in spatial development. The need therefore exists to study the factors causing variations in spatial development in Transkei and to suggest methods through which the evolving pattern can be adapted to conform to, if a balance in spatial development is to be obtained from the present pattern of inequalities.

Arising from the background given, this study set out within the growth pole framework to examine the linkages between Butterworth, the most industrial region in Transkei and the rest of the space economy. Forty nine industries and a total of 645 industrial employees of various categories were selected for the study. Linkages were measured with respect to sources of raw materials, destination of

finished goods, origin of industrial employees and the destinations of remittances by industrial employees.

Through the use of techniques such as percentage concentration, correlations, and regression analysis among others for the analysis of the data, the following information emerged from the study:

- (i) agglomeration economies for the industries in Butterworth are minimal.
- (ii) Linkages between Butterworth industries and the rest of the Transkeian space economy are minimal.

The minimal agglomeration economies and linkages have been due to the fact that industries are set up in Butterworth neither because a market exist for its products nor that raw materials exist that are to be utilised in production. This implies that industrial developments as at present is not being properly guided to ensure the attainment of a balanced spatial pattern of development.

From the above findings, it has been proposed that programmes geared towards the establishment of linkages such as the production of raw materials for the industries will be more beneficial than the present regional development strategy. The need for support measures for the industries in Butterworth has also been proposed as a method of raising their economic efficiency and hence their ability to transmit developmental impulses to other regions in Transkei.

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CHAPTER ONE

INTRODUCTION

1.1. THE PROBLEM

A most prominent characteristic of the development effort of virtually all countries which is causing much concern to planners, policy makers and the general public is the existence of inequalities in regional development (Friedmann, 1972; Fair, 1982; Coetzee, 1983; Ligthelm and Coetzee, 1984). Inequalities in development exist between and within different regions of every country (Chapman, 1979; Williamson, 1965; Hensman, 1975; Stohr and Taylor, 1981). Certain regions and countries are 'developed' while others are 'underdeveloped'. Globally, the world is divided into developed countries and underdeveloped (developing) countries, first, second and third worlds, north and south.

Several writers have noted the universality of regional inequalities in the development process (Hoselitz, 1955; Nurkse, 1961; Pred, 1965; Keeble, 1977; Gore, 1984; Cooke, 1983). Ullman's localisation principle for instance holds that, "concentration within nations is the rule of economic development" (1958, p 196). As Myrdal (1957) has pointed out, this is because certain areas due to natural resource availability, manpower, or other economic advantages take the lead. These "initial location advantages at a critical stage of change become magnified in the course of development" (Ullman, 1960, p. 26). Sometimes however, public planning policies may start the process through the deliberate channeling of resources to particular regions

to satisfy certain objectives.

Whatever the initial cause of the inequalities in the development effort, it sets off a series of related processes. The resultant processes, if not guided, cause inequalities in development to increase with time through the process Myrdal (1957) refers to as "circular and cumulative causation". Factors responsible for such inequalities in development include Hirschman's (1958, p. 188-99) dualism and polarisation, and Myrdal's (1957, Ch. 3-5) backwash effects. These processes attract population and other supporting activities to the particular areas that emerge with comparatively more development (ie the core). Thereafter, the process generates a "virtuous upward spiral growth in the core regions and a vicious downwards growth in the periphery" (Myrdal, 1957, p. 26). The initial concentration without guidance therefore, results in a cumulative self generation in which the effects of the inequalities themselves sustain the process at the core at the expense of the other regions. Browett (1976) concludes therefore that, left to free market forces, a convergence in the level of development between regions and accompanying integration of the space economy will not inevitably follow from the concentration of development in a few centres. This arises from the difficulty of achieving change in a system when the parameters of the system remain the same (Browett and Fair, 1974). Properly managed however, initial spatial inequalities in development can generate the diffusion of developmental impulses which will ensure the attainment of balanced spatial development in the end.

Development is a broad term connected to several interrelated variables covering elements such as the material production of goods and services, structural changes in an economy, modernisation, technological and environmental issues, social, economic and cultural organisation of society (Mabogunje, 1980, p. 41). It is thus connected to such elements as poverty, unemployment and inequality (Seers, 1969, p.3). The economic aspects of development relate to economic activities and its associated elements such as production, cost and income all of which have a geographical expression and directly affect the level of living of the population, the ultimate beneficiary of the development effort (Boateng, 1986). The economic dimension therefore constitutes the most important yardstick in measuring the impact of the development effort. This study intends to concentrate attention on this aspect of development.

Spatial analysis of development focuses attention on regional patterns of the development effort, their underlying factors, problems and their possible future state. The information so revealed is useful for planning purposes (Clignet and Jordan, 1971, pp 261-97). Regional analysis of variations in the level of development therefore constitute the basic information on which development plans could be formulated as no meaningful regional development plans can be formulated unless a thorough understanding of the existing situation is known.

While inequality seems to be a fact of every society the degree of inequality varies considerably between and within countries (Cotzee, 1986). It is known, for instance that, spatial inequalities in development is more evident in the Less Developed Countries (LDCs) of especially Africa than in the developed countries (Myrdal, 1957; Nurke, 1961; Keeble, 1977). Williamson (1965) has in the light of this established a relationship between the level of development of a country and the level of inequalities in its overall development. To him, the less developed a country the more evident the problem of inequalities (Williamson, 1965). In most of the LDCs the most prominent manifestation of inequalities in economic development is exemplified by the differences between the urban and the rural areas (Lipton, 1977, p.22; Mabogunje, 1980, p. 119). The present study concentrates on this aspect of inequalities in development and focusses attention on how the growth pole theory could be used as a planning strategy to attain balanced spatial development.

By whatever yardstick or variables one chooses to measure development, there is considerable evidence that there are wide differences in regional development between towns and rural areas in most of the LDCs. In the first place a town has a larger proportion of the modern manufacturing activities, financial activities, commercial activities in addition to such facilities as treated water supply, roads, hospitals and doctors, modern housing and other amenities. As a result they also have the larger share of job-opportunities and therefore a greater number of people. Growth in the production

activities in the town also add a large range of goods and services to the urban market which are unavailable to the rural consumer. In many respects the urban centres of LDCs constitute islands of high and varied economic activities, modern technological know-how, and they boast of aspects of social development that bear comparison with the best of the developed countries.

The rural areas surrounding the urban areas on the other hand are characterised by large natural increases in population, overcrowding, land fragmentation, overgrazing, soil erosion, chronic unemployment and distress. The inevitable result is that many of the people drift into the towns. Those who remain are the conservative type who have difficulty in accepting new ideas in either their way of living or in production techniques. Agriculture, the main activity, is therefore characterised by inefficient production techniques and very low per capita output. Consequently, incomes from rural agriculture are lower than those of the urban/modern/industrial sector. This leads many rural dwellers to lose interest in agricultural production. As a result a vicious cycle of poverty is created where incomes are low because prices are low and production is low. There is neither savings nor investments to create employment opportunities. In spite of this it is known that in the LDCs, the vast majority of the population live and work in the rural areas. This vast majority of the population are therefore left out of the gains of the development effort.

The problem such marked spatial inequalities in development could create is that it could constitute a liability in a country's overall national development effort (Friedman, 1966, p. 14; de Souza and Foust, 1979, p. 588). For one thing, inequalities create a perception of prosperity elsewhere among rural residents and a realisation of their own depressed state (Todaro, 1985). This by itself is capable of inducing population movements from rural areas to urban areas which in the end might not be in the interest of either the rural area or the urban area. For another, as several writers (Myrdal, 1970; Seers, 1969; Meier, 1984; Davis, 1962) have pointed out, with initial spatial inequalities in development and its subsequent amplification, an intolerably high gap is built in time between what people of the depressed areas (rural areas) expect and what they get (refer Figure 1.1 drawn after Davis, 1962). With growing inequalities the population of the poor rural regions might resort in time to political and social upheavals to redress the inequalities in regional development and thus completely overshadow the gains made in the development effort (Carroll, 1952, p. 573-90).

Social upheavals and political turmoil have been caused in many places as a result of large spatial inequalities in development. In Sudan, a civil war has been ranging for over five years between the developed north and the underdeveloped south caused mainly by the large spatial inequalities. The over-centralisation of power and wealth in a few centres generated political and social upheavals in

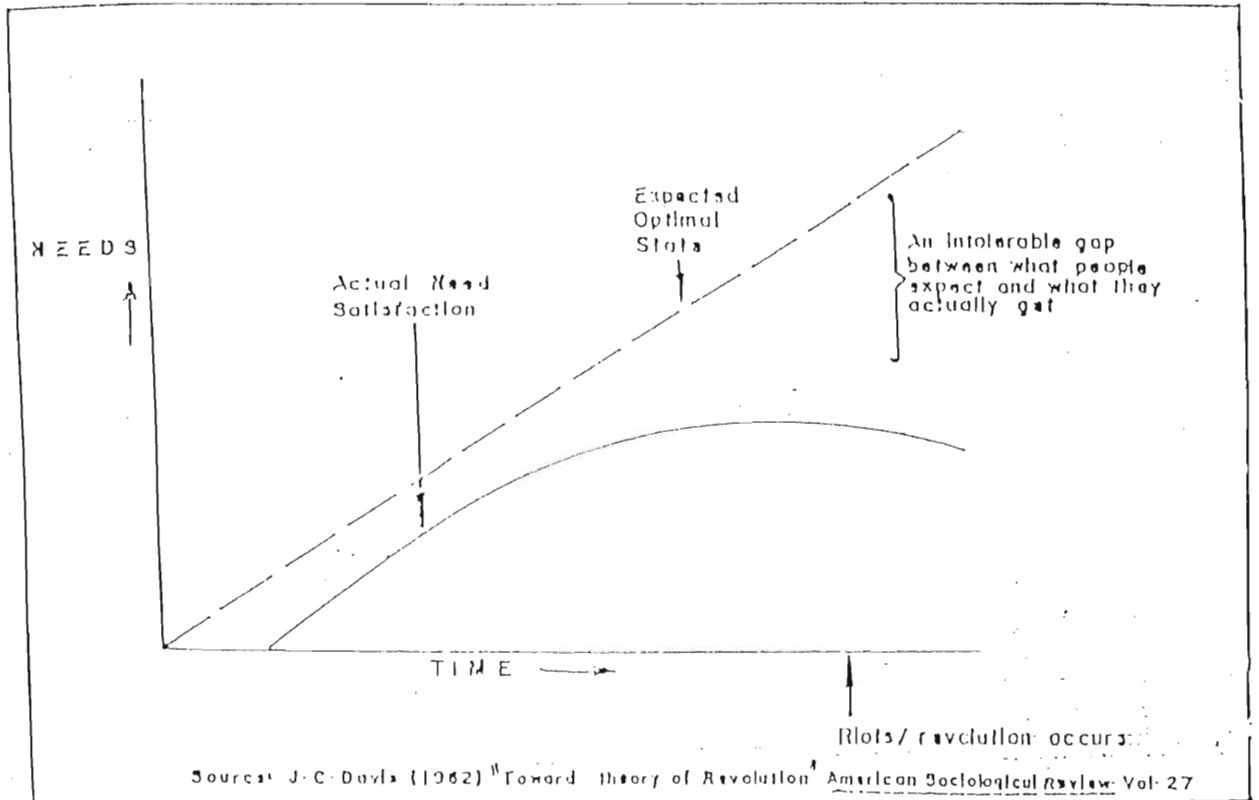


Fig.11 Davis Model indicating the implications of widening the gap between Socialexpectations and what is actually given to society.

Venezuela (Friedmann, 1966). One of the underlying causes of the Nigeria civil war was related to the large spatial inequalities in development between the oil producing but underdeveloped eastern region and the relatively developed other regions. Much of the current unrest in the Republic of South Africa has also been attributed to the large spatial inequalities in development between the 'white areas' and the 'black areas' (Nkonyeni, 1986).

The seriousness of the problems associated with regional inequalities in development have been dealt with by people like Hoselitz, (1955), Williamson, (1965), Friedman, (1966), Keeble, (1977) and Stohr & Taylor (1981). To them, the elimination of spatial inequalities in development should be of concern to both the depressed areas and the developed areas. This explains why various researchers, and international organisations continue to give much attention to the problem (E.C.A., 1969; I.L.O., 1970). For instance, one of the prime objectives of the Development Bank of Southern Africa states is "to reduce imbalances in the levels of economic development existing in Southern Africa" (DBSA Annual Report 1986-87, p1). Many governments today also view the equal spatial distribution of the gains from economic development as a prominent development objective (Matlon, 1979).

The value of development planning in any country is that it offers opportunities to direct developmental activities towards certain

objectives. The objectives often aim at utilizing the country's resources to achieve human needs. Development planning is therefore concerned with identifying the needs of the people and using the resources of the country to meet those needs. In the LDCs regional planning has taken many forms some of which unfortunately tend to favour further concentration of the development efforts.

As Vance (1970) and Mabogunje (1970) have both pointed out spatial inequalities in development in the less developed countries, especially in Africa, has been based on the structures that were created during the colonial period and reinforced in the post colonial era. Increasing polarisation of development began with the imposition of colonial administration which was designed to facilitate the exploitation of the resources within the colonies (Vance, 1970). Places along the coasts where ports were later developed or places along the major transport routes emerged with considerably more development. This is because they provided a means for the further exploitation of the resources of the colonies (Taaffe, Morrill and Gould, 1963). These regions were the foundations of many of the urban centres in the LDCs today. Historically therefore few indigenous cities existed in the LDCs, especially in Africa, before colonial rule. According to Comhaire and Cahnman (1959, p.1) for instance, Serowe (in Botswana) with a population estimate of just over 2000 was for a long time the largest black settlement south of the equator. The colonial town/city was, however, developed as "the political, military, economic, religious, social and intellectual

entrepot between the colonisers and the colonized" (Horvath, 1969, p. 76). Linkages between it and the hinterland were in most cases limited.

After independence African countries have had to contend with whether to accept these initial spatial inequalities in development as an inevitable and necessary part of the path towards overall national development (Friedman, 1966; Johnston, 1980) or to reject them as an undesirable aspect of development which needed correction (Myrdal, 1957; Hirschman, 1958). Policies adopted by many of these countries have tended to favour further planned concentration of development at the urban centres in the expectation that it will lead to overall balanced spatial development. It was generally assumed that the only sure way to overall national development was the rapid development of the modern/urban/industrial sector (Hirschmann, 1958). Heavy investments have therefore been made in the urban/modern/industrial sector. The surrounding rural areas of the towns were, however, left in their traditional state creating a dual economy: a modern/industrial sector in the urban area and a traditional agricultural sector in the rural area with minimal linkages between the two. The use of the town to achieve balanced spatial development is the basis of the growth pole theory. As Friedman has stated the town can be used for "a rapid advance towards the goals of national development" (Friedman, 1968, p. 364). Cities and towns are therefore regarded as vehicles for national and regional development (Fair, 1982).

The town, can spread development impulses through such processes as filtering, diffusion or trickling down benefits (Gould, 1964, p. 123-125). This diffusion comes through strong linkages which influence the location of economic activities, the spacing and size of settlements, the direction and intensity of movement, the networks of transport and communication, the spread of innovation and the process of decision making within corporate organisations. To Nichols (1969) the diffusion of economic development deals with the spread of new industries, improved methods of business and agriculture. Empirical evidence suggest that the spread is in two forms: the spread to towns and from towns to hinterland. Development thus spread through the introduction and diffusion of successive sets of innovations. By stimulating demand for agricultural commodities for instance, on the one hand, the town can generate strong impacts to create new centres of self-sustained economic growth in the rural areas (Chorley and Hagget, 1965, p. 259). Hermansen, (1972, p. 165) refers to the process as that of the "diffusion of development impulses". The sum effect of these activities generate an expansionary momentum which is not only felt in the urban centre but also in the rural areas.

For the town to spread developmental impulses it must posses certain characteristics. It must have a high rate of economic growth, industrial structure and an ability to innovate various activities in the linked regions through backward and forward linkages. Backward

and forward linkages relate to the supply of material inputs and the distribution of finished goods. Complementarity is thus the basis of the notion that development spreads to other regions as a result of the interdependence between the activity systems of the different regions. Interdependence is therefore a key element in the process of spreading spatial developmental impulses.

The conception of the town as an instrument for achieving balanced spatial development is founded on several reasons. The first relates to the historical mission of towns which is to serve countrysides. "Cities do not grow up by themselves. Countrysides set them up to do tasks that must be performed in central places" (Jefferson, 1931, p. 453). The major function of an urban place is therefore to be a central place providing goods and services for an adjacent market area "which will be both tributary to the city, and served by it" (Vivian, 1960, p. 586). As Hirschman (1958, p. 183) has also pointed out, "for an economy to lift itself to higher income levels, it must and will first develop within itself one or several regional centers of economic strength" centres which he calls "growth poles". To Boudeville (1966) towns and cities are the centres of economic strength or the growth poles. McGee has also observed that towns are "centres of modernisation which act for economic growth" (1971, p. 14). As Mayer has therefore noted "geographers are concerned with the study of urban areas because urban centres constitute distinctive areas economically, socially and politically important out of all proportion to the areas they occupy" (quoted in

James and Jones, 1954, p. 143). Friedman, (1973, p. 25) has noted too that the growth of towns is "an irrepressible accompaniment of modern development experience". The World Bank (1975, p. 67) also accepts the development of urban centres as "... a strong and healthy part of the process of economic development".

The town however does not exist in isolation but is linked to other regions, both urban and rural (Johnson, 1967). The area linked to the urban centre is referred to variously as "hinterland", "umland", "tributary area", "service area", "urban field" or "sphere of influence". This sphere of influence can be delimited by looking at that "framework within which movements occur and the effects thereof are felt" (Jones, 1954, p. 214). Such a sphere of influence constitute a "functional region" (Boudeville, 1961). It is known in the first place that development within any region cannot be successful if efforts are concentrated solely on rural agriculture or urban industrial activities without strong linkages between the various sectors. Indeed the processes of development, relate to the processes of interaction between the sectors. Urban centres provide social services for the rural population and constitute the location of industrial enterprises in the final stage of processing agricultural raw materials. They also serve additionally as markets for food crops from rural areas. Rural areas on the other hand provide food and raw materials for urban residents and industries. They also constitute markets for processed goods from the urban areas. The two areas should therefore be complimentary to each

other. A recognition of this interdependence of developed "poles" and underdeveloped hinterlands constitute an ideal basis for overall national development through planned spatial allocation of resources. As Richardson has contended, growth centres play a useful role in LDCs provided that they are well integrated with the environment and that they create forward and backward linkages with the rural agricultural sector (Richardson, 1974).

Unfortunately, as has been pointed out by Smit (1978, p. 15) "vital links and functional interaction between urban areas and hinterlands are lacking in most African countries". There has been an increasing divergence among the geographical units in Africa and the perpetuation of the problem of spatial inequalities in development (Hance, 1970, 1972; Clarke, 1972; Fair, 1975).

In spite of the apparent lack of vital links between towns and countrysides in most African countries and the failure of the town to act as an effective catalyst for economic expansion in the past, there is a widespread belief that the situation should be corrected. It is in recognition of this that a considerable amount of research has been done by geographers on urban centres and their spheres of influence.

The various studies have shifted interest in and theoretical orientations "from a preoccupation with the problems of the growing city to an intensive examination of its role as an instrument of modernisation and national development" (Hahn-Been, 1968, p. 260).

Several international organisations, governments and various departments are also increasingly devoting their energies to the analysis of the role of urban centres in regional development (Economic Commission for Africa, 1969, International Labour Organisation, 1970). A number of international conferences have also examined the role of cities in economic development (United Nations, 1966). For instance, the International Labour Organisation launched in 1970 the first of its series of missions under the world employment programme in which the general theme was "Redistribution with Growth".

A large amount of the work on the use of the town to achieve balanced spatial development has, however, been done in the developed countries (Hansen, 1967). There is particularly a need for more of this work to be done in Africa as there is considerable evidence of more spatial imbalances in development in Africa than anywhere else (World Bank, 1984, p.21).

The Transkei represents one of the least developed countries of the world in terms of per capita income which stood at R260 in 1980 (Republic of Transkei, 1981/82). In 1986 the average annual household income was estimated at R5 069 comprising R13 362 for urban households, R20 645 for semi urban households and R4 640 to rural households (Income and Expenditure Survey, Central Statistics Office, 1987/88, p. 8). Economic growth has however remained often beyond 3% per annum accompanied by considerable changes in the space economy

(Review of the Transkei Economy, 1986, p. 1). This growth has been achieved however, largely through foreign aid (in the form of budgetary assistance, customs union share, rand circulation compensation and project claims from the Republic of South Africa) and not as a result of self sustained economic growth. This is borne clearly by Table 1.1 below which summarises the income and expenditure account of the Transkei Government from 1980 to 1985.

Table 1.1: Government of Transkei Revenue and Expenditure 1980-1985 (R-Million)

	1980	1981	1982	1983	1984	1985
Internal Revenue	83	117	198	175	256	305
Customs Union Share	120	92	98	188	280	295
Budgetary Assistance	118	154	203	213	212	263
Rand Circulation Compensation	3	5	6	7	9	9
Project Claims	-	-	-	-	21	20
Total Revenue	324	367	504	583	778	892
Total Expenditure	335	388	612	687	913	984

Source: Official Statistics, Dept of Finance, Feb. 1986, p. 9.

From the table it can be deduced that internal revenue has always been less than 30% of both total revenue and total government expenditure.

As a result of this massive funding, Transkei's economy and its population has progressed at different rates in different areas. The resultant effect has been that disparities have arisen between the more developed regions and the less advanced regions with economic activities being focussed on the developed regions. The spatial pattern of development so far is typical of developing countries

experiencing a period of incipient industrialisation (Friedmann, 1966, p. 36) namely : an economic and social core representative of the modern economy in the urban centre, set within a stagnating periphery. This sharp disparity in spatial economic development is a major problem which needs to be researched into.

The concentration of economic development in a few areas in Transkei, notably in Butterworth, has become a particularly glaring phenomenon. Butterworth occupies less than 1% of the total area of Transkei but has about half of all industries in Transkei and over 50% of the nation's industrial employment (Transkei Development Corporation Paper, 1987). This has been caused by the pattern of regional development planning. It is based on the belief that if resources are concentrated in a few core areas, scarce capital will be effectively utilised, and that in the end developmental impulses would diffuse from the core to the less developed areas. Implied in this notion is the idea that the space economy, no matter its configuration, must be viewed as a system of interacting parts. The regional economy is therefore affected by other regional economies. Accordingly, it must be accepted that regional development issues must be expressed in terms of interdependencies that extend across national territories. Arising from this background, the primary concern of this research then is to measure the linkages that have so far been established between Butterworth and the surrounding regions. The usefulness of the growth pole concept as a conceptual tool for such a research lies in its utility as a planning strategy. It has, in fact, become a

solid planning strategy in many countries. The most notable is the economic development planning in Venezuela by L. Rodwin and Associates (Rodwin, 1972). Regional planning in Guyana also employed the use of growth poles. In Transkei and for that matter the Republic of South Africa, growth centre policy has underlain regional development planning strategies for sometime now (Tomlinson, 1983).

1.2. OBJECTIVES OF THE STUDY

This research is primarily designed to fulfil the following specific objectives:

- (a) To examine the factors behind the emergence and growth of Butterworth as an urban/industrial centre.
- (b) To explain the current state of the socio-economic structure of Butterworth as an urban/industrial centre.
- (c) To examine the spatial impacts of Butterworth on its surrounding hinterland and the Transkei as a whole via the modern industrial sector.
- (d) To make appropriate recommendations for increasing the positive role of Butterworth in the regional development of both its district and the Transkei as a whole.

1.3. JUSTIFICATION FOR THE STUDY

A study of the impact of Butterworth as a growth point is, in fact, long overdue. This study is thus being carried out for the following reasons:

- (a) As at present no detailed study of the spatial impacts of development as related specifically to Butterworth is currently available. Such information is however, an essential component for the development planning of the country. While many studies in South Africa (Best and Young, 1972; and Smit, 1977) have been concerned with spatial patterns of black urban areas, enough attention has not been focussed on the impact of the concentration of development in a few regions of these areas.
- (b) Considerable effort, time and money have been spent in developing Butterworth as Transkei's major industrial centre in the belief that the effort will result in a trickling down of development to the surrounding region. As indicated in the Transkei Department of Commerce (1983) policy document on "Development Priorities and Public Spending: 1980-1988", the trickling down of developmental impulses should result in the provision of more educational facilities, health, water, power, transport, communications and employment programmes all aimed at improving the quality of life of Transkeians. Government also intends

that development should reach all sections of the labour force ie people of all ages who are able and willing to work, those in paid employment, those self employed in towns or on the land and those looking for work (White Paper, 1983). The key sector to help in the attaining of these objectives is the manufacturing sector. With the bulk of industrial investment it is expected that Butterworth will lead in the trickling down of these development impulses. As at present the extent of the trickling down (if any) is unknown. There is therefore a need at this time to study the role of Butterworth in the provision of these developmental impulses in the regional development of Transkei in general.

- (c) The general public and the Transkei government in particular are now very much concerned with the issues pertaining to the spatial development of the country, particularly the rural-urban dimension. The Transkei government White Paper on the "Development Strategy: 1980-2000" (1979) for instance, envisages that the functions of larger towns will be to serve "the economic needs other than food production, and the social and administrative requirements of Transkei as a whole" (p. 18). This implies their establishing linkages with the rural areas and providing employment to both areas. Through this it is hoped that regional imbalances in development will be reduced. To achieve this aim,

the Transkei government believed a service centre approach to regional development to be necessary. Through such an approach it is intended to establish a hierarchical network of physical bases to deliver public services. The resulting network will provide the channels for encouraging development in rural areas. The envisaged hierarchy of service centres incorporate existing and new centres, and hopes are that Butterworth will have the largest concentration of urban population by the year 2003 (White Paper, 1983). It is being proposed here that such a policy will not succeed unless it is founded on a detailed study of current trends especially at the micro level. As Szentes, (1971) has pointed out, "it is impossible to bring about a deliberate and purposeful change in the present without knowing how this state came about. We can't successfully fight any phenomenon without knowing its roots" (p. 2). Naturally, Butterworth, because of its position as the most industrialised town in Transkei, and the support being given for its continued growth should have first priority in a study of this nature.

- (d). If increased attention is not given to the spatial manifestation of the development effort of Transkei, the planning authorities would not be able to cope with future problems effectively. This study would therefore assist regional planners to formulate effective plans for

the overall regional development strategy of Transkei.

1.4 ORGANISATION OF THE STUDY

The study falls naturally into three parts: the background, the findings and the conclusion. The three parts are organised into eight chapters as follows. Chapter one serves as the introduction, and has been devoted to examining the general problems of regional inequalities in development and the role of the town in helping to achieve balanced spatial development. The chapter also identifies the objectives of the study and provides a justification for the study. Chapter two is devoted to an examination of the theories and concepts relevant to the research. These theories will provide an understanding of the techniques used in the analysis of the data. The understanding of the theories and concepts will also be invaluable in the selection of the hypothesis in relation to which data will be analysed. In chapter three the various methodologies used in both data collection and analysis are outlined. It is expected that this chapter will form an important link between the first two chapters and the data analysis presented in the subsequent chapters of the second part. Part two begins with chapter four in which the evolution of the space economy of the Republic of Transkei is traced to highlight the inequalities that have accompanied the development effort. Various techniques are utilised in this chapter to illustrate the nature and extent of the spatial inequalities existing in the space economy. Chapter five continues the discussion on spatial inequalities in development by tracing the factors behind the emergence of Butterworth

as an urban/industrial growth point. The chapter also looks at the current socio-economic structure of the town. Having concluded the examination of the current socio-economic structure, the impact of the dominant manufacturing sector is evaluated in chapter six. The chapter examines the characteristics in the manufacturing system of the industries in Butterworth, the various elements in the manufacturing system, the links between the various industries in terms of two of the elements, and assesses the agglomerative economies that industries in Butterworth enjoy. The relationship between distance and the two elements in the manufacturing system of the industries in Butterworth are also examined in this chapter. The penultimate chapter is devoted to an examination of the links between employment and income and the space economy. Part three as chapter eight, is the last chapter which, besides carrying the summary of the work, also contain the recommendations arising from the findings of this study.

CHAPTER TWO

THEORETICAL AND CONCEPTUAL BACKGROUND

2.1 Introduction

The understanding of patterns and processes usually begins with the adoption of a theoretical or conceptual construct for the selection and organisation of facts (de Souza and Foust, 1979, p. 4). Approaches to most geographical enquiries have therefore, largely depended on theoretical and conceptual frameworks. These help to introduce order in descriptions, simplifications, clarifications, and explanations of phenomena in a region (Lukerman, 1961). They also help in plan formulation as well as providing the foundation on which predictions can be made. This chapter, therefore, is intended to introduce the major concepts and theories relevant to this research as well as their operational definitions. The major concepts and theories relate to the explanations that have been advanced for differential inter-regional growth rates and strategies to deal with them. The examination of these concepts and theories would form the framework within which one can examine the impact of Butterworth as a growth pole.

2.2 THE RELATIONSHIP BETWEEN GROWTH AND DEVELOPMENT

Many people distinguish between growth (associated with advanced economies) and development (associated with economically backward economies) (Hodder and Lee, 1974). Growth refers to the "aggregate and strictly economic or material improvement in an economy" while development refers to the "whole social, economic and political

process which results in a perceptible and cumulative rise in the standard and quality of life for an increasing proportion of the population" (Wareing, et al. 1978, p. 169). Development, therefore, goes beyond the immediate improvement in the economy. It aims at raising per capita incomes, reducing personal and spatial inequalities in per capita incomes between regions or enabling the vast majority of citizens to obtain work. The choices are wide and vary from country to country.

It is these choices that present planning objectives for which strategies must be designed. On the basis of these choices, allocation of resources are made in relation to the various sectors. Strategies may involve guiding public policy measures either to stimulate lagging regions or to check the growth of large congested agglomerations. In Transkei development has meant to the government, improvement in the standard of living and the quality of life of the people, increase in agricultural output, the creation of employment and the development of the backward regions (White Paper, 1979). One strategy for attaining these objectives has been the concentration of manufacturing enterprises in selected growth poles or centres from where it is expected to filter down to the other parts of the country. Development is therefore conceived in polarised terms and growth is seen as the instrument for achieving it.

2.3 POLARISED DEVELOPMENT

Polarisation is defined as "the propensity for incremental regional growth to arrange itself in clusters or to be drawn towards existing centres" (Parr, 1973, p. 43). Richardson defined polarisation as "the concentration (of economic development) in certain regions of the national economy" (1973, p. 139). A polarised system is dominated by a core which may be increasing while the periphery decreases (Hall, 1971, p. 117), or be increasing as the periphery also increases but at a slower rate. The creation of a core and a periphery is a result of the particular relationships that are forged among the developmental elements. One can understand specific spatial patterns of development if the associations of the elements and their underlying inter-relationships can be identified. Of the various relationships that of interdependence is the most important.

Interdependence implies that the normal operation of one of the elements is dependent on the operation of others. The relation of interdependence among geographic regions occurs when the economy of one unit (ie the dominant one) can expand and can be sustaining while the other unit can do this only as a reflection of that expansion. This invariably produces a pattern of unequal development because the development of parts of the system occurs at the expense of the other parts. Myrdal (1957) has noted, for instance, that the core sends backwash effects to the periphery which decreases its ability to grow. Siebert (1969) used the term "withdrawal effects" to

refer to the flight of labour, capital, managerial talent and raw materials from the peripheral areas to the core. One glaring manifestation of polarised development is the urban/rural dichotomy (Baer, 1963; Coates, et al., 1977; Mabogunje, 1980).

2.4 THE GROWTH POLE CONCEPT.

The concept of growth poles represents an attempt to conceptualise the relationship that develops between one economic entity and another. It is particularly helpful in the analysis of manufacturing activities. The concept was first propagated by the French economist Perroux over twenty years ago (Perroux, 1950).

The structure of the growth pole concept in both its original form and subsequent revisions involve the following elements: (1) the emergence of a key firm or industry (2) agglomeration economies which arise because of the location of firms in close proximity and with ease of communication (3) the relationship of the growth pole to its surrounding region. It is these elements that provide quantifiable means with which to analyse growth poles in either its original version or the subsequent revisions.

2.4.1 Francois Perroux's Initial Formulation

Perroux's theory describes a dynamic system of economic growth. He was interested in highlighting the processes whereby clusters of economic and industrial activities lead to economic growth primarily through firms at a place. He noted that "development does not appear

everywhere and all at once; it appears in points or development poles and with variable intensities. It spreads along diverse channels and has varying, terminal effects for the whole economy" (Perroux, 1955, p. 1-2). He (Perroux, 1950, 1955) defined development poles or growth poles as points, centres or foci located in an abstract economic space. The abstract economic space is defined as a field of forces. The constellation of the forces creates a growth pole which being a centre of attraction and repulsion has its proper field which is set in the field of other centres (Perroux, 1950).

2.4.1.1 Emergence of Growth Poles

Perroux's notion is that growth poles owe their existence to the location within it of one main growth industry or "une industrie motrice" (Perroux, 1955, pp. 183-185). This industry belongs to a relatively fast growing sector, has a high output rate, has strong linkages with other activities of the region and is capable of generating significant growth impulses. It also has a high ability to innovate. Such an industry often achieve lower costs per unit of item produced because its production is often at its optimum. The growth of this industry attracts other linked industries by virtue of external economies created in the locality. Through the lowering of the cost of the "une industrie motrice", other industries integrated with this key industry initially benefit from a reduction in their cost, and they can therefore sell their products cheaply and thus increase demand for their products. In time these industries grow and attract other industries (ie those which provide those industries with inputs

or derive their inputs from them). Thus as these linked industries grow under the influence of the single propulsive industry the growth pole as a whole expands still further. This expansion is not limited to the growth centre alone but also extends to the surrounding regions.

To Perroux, growth poles emerged naturally as a result of certain inherent conditions. He identified these conditions as the achievement of a new monopolistic position, the introduction of a new good or technology, the opening of a new market or reservoir of consumption and the exploitation of a new supply of raw materials. A firm with these advantages will grow and induce growth in related industries through forward and backward linkages. Whenever growth poles emerge therefore they tend to exploit all manner of scale economies and externalities. Gradually, they reshape the productive relations around their own marketing and demand requirements. Their field of influence (functional region) will exist at any period of time.

While recognising the importance of growth poles most analysts have found Perroux's insistence on the role of the single propulsive industry generally unacceptable (Friedman, 1966). It is held that the presence of such a growth industry itself in a growth pole may in the long run inhibit industrial development by preventing the ingress of firms in other industries. There are also many obvious growth poles in existence which are not dominated by a growth industry rather

there are a host of unco-ordinated activities without the presence of any growth industry stimulating the process.

In spite of these criticisms, Perroux's growth pole concept still stands as the firm foundation on which later scholars of spatial inequalities in economic development have built their theories and models. Among these are Gunnar Myrdal, Albert Hirschman, and John Friedmann.

2.4.2 SPATIAL ASPECTS OF THE GROWTH POLE THEORY

Initially much attention was not given to the spatial dimension of the growth pole theory even though this was implied in the relationship between the growth pole and the surrounding hinterland. The direct equivalent between a growth pole and a locational or spatial arrangement as opposed to abstract economic space was suggested by Boudeville (1966) and extended by Lasuen (1969). They drew a direct equivalent between a growth pole and a locational or spatial arrangement (cf. Boudeville, 1966). Boudeville correctly pointed out that all economic activity takes place in a geographical space, and that organisational and industrial changes in functional regions occurring during economic growth can be projected into and manifest themselves in geographical space. He also noted that growth poles located in geographical space spread innovation within such space, and that the concept can be used to shed light on transformations within a functional space just as in geographical space. Boudeville, however, established a difference between a

region (a continuous area) and its location which is in space. Space could be homogeneous, planning or polarised. According to Paelinck (1965) however, the growth pole theory when applied to geographical space should be regarded as a conditional theory of regional growth that establishes conditions under which regional growth might occur.

Boudeville defined growth poles as "geographical agglomerations of activities rather than as complex system of sectors different from a national matrix". Thus, in short, "growth poles will appear as towns possessing a complex of propulsive industries" (Boudeville, 1966, p. 121). Growth poles in this sense are based on a notion of polarised industrial development. They emerge or are established on the basis of intrinsic or acquired locational advantages and are able to attract specialised and potentially dynamic activities which provide a self-sustaining momentum of growth and change. A regional growth pole is therefore a set of expanding industries located in an urban area and inducing further development of economic activity throughout its own sphere of influence.

A clustering of manufacturing firms is the first impact of the emergence of a growth pole. With this clustering of manufacturing firms at a point economies of urbanisation can arise, since services such as roads, sewerage, social amenities etc. can be provided at lower cost at such clusters than when firms are spread widely. Other localisation benefits include a supply of skilled labour which occur if a group of firms within the same industry are located at a centre.

Parr calls these benefits "economies of spatial juxtaposition" (Parr, 1965, p. 2)). Through such economies a sort of multiplier effect is set in the pole which fuels further growth. This growth extends in time to the surrounding hinterlands.

To Berry (1960) the role of a growth centre in regional development is similar to a diffusion process. New innovations associated with growth filter down from large centres to smaller ones. Thus he states, "growth centres serve as filtering enhancement devices when keyed to an accessibility policy that bring peripheries effectively within orbit ... When filtering and diffusion work well they do result in rapid integration of the space economy" (Berry, 1960, p. 108-138).

Two methods of the diffusion or trickling down processes have been mentioned: (1) through the free flow of factors in a free-market (2) through induced investments or external stimulation from growth points. Either way the system works to create a balanced spatial system. In sum the model holds that just as centripetal forces encourage concentration of growth and development in the centre at first, centrifugal effects gradually begin to provide increased opportunities in outlying areas as centralisation pressures decrease. For instance "growing markets, new technology and friction of distance combined with congestion, pollution and diseconomies of scale in the heartland and the amenities of the hinterland make outlying areas more attractive" (Hartshone, 1971, p. 269). In recognition of these

possibilities Sundrum (1983, p. 72) has drawn attention to the fact that "there are always two sides to development: the initial innovation and its subsequent dissemination" .

The growth centre and its surrounding region constitute a functional region in which interactions take place through forward and backward linkages (Chorley and Hagget, 1969). In inducing the development of the region surrounding the growth pole, particular spatial structures have been identified. According to Friedman (1966, pp. 39-49), the regional impacts generated by the growth centre are strongest near the growth centre and diminish gradually with increasing distance from the centre, similar to the forces around a magnetic field. This characteristic feature of growth poles, is sometimes referred to as the distance decay factor. The functional field can therefore be regarded as an interaction field with regions at various levels of development surrounding the growth centre. These regions would range from the most developed region which is nearest to the centre, to the least developed regions which are very far from the centre.

The effect of the growth centre on the economic development of the wider region could, however, take the form of backwash effects or dominance rather than spread or trickling down (diffusion) effects. Where widespread trickling down effects are predominant the growth pole can be said to be generating development in the surrounding region. On the other hand, where backwash effects predominate the

growth pole can be said to be parasitic in the Hoselitz sense. For example, in instances where the output of the firm is exported for sale outside the region where it is manufactured or its profits are sent elsewhere. Spread effects may also be discovered in primary impulses to development such as the generation of employment from increased demand by the core.

Although the original concept of development poles was envisaged as a tool to study the pattern of economic development in abstract economic space, in the course of time this scope has been considerably broadened and the theory underlying it generalised so that both the concept and the theory now deals with the problem of societal development planning as opposed to economic progress in either a section of an economy, a certain time period or a geographical location (Boudeville, 1966; Hirschman, 1958, Friedman, 1966). These generalisations can be discussed under the balanced and unbalanced growth models.

2.5 THE BALANCED GROWTH MODEL

This school of thought believes that the development of spatial inequalities which start with the emergence of the town be encouraged since it will ultimately steer regional patterns to a balanced state. To the protagonists of this view (notably Richardson, 1973, 1974) unequal development is to be accepted as natural, necessary and self correcting through such processes as the free flow of factors of production and trickling down of developmental impulses. The process

should, therefore, not be interfered with (Richardson, 1974). Richardson's (1974) main thesis is that polarised development occurs initially in every country but subsequent economic development produces at a certain stage dispersion of developmental activities to the other regions which tend to integrate the national economy. This point of view is also supported by Hirschmann, and Friedmann.

2.5.1 Hirschman: Trickle Down and Polarisation Effects.

Like Peroux and Myrdal, Hirschman (1958) concedes that economic development does not emerge every where at once. He accepts polarisation as natural in the early stages of development. According to him, polarisation factors generate a multiplier effect in the regional economy which eventually trickle down to the underdeveloped parts of the region. This emerges from the interaction between the growing region and the stagnating region. To him, this takes the form of "trickling down" and "polarisation effects". These are analogous to the spread and backwash effects. These interactions work through linkages among the industries at the growth pole. He isolated variables including social and cultural ones through which inter-industry linkages work to foster growth and establish relationships among firms. He spoke of the "strength" and the "importance" of the links extending from a given productive unit. Importance referred to the potential net output from industries that may be induced while strength referred to the probability that plants producing the said output would be established as a result of the inducements. The total product of strength and importance is a

measure of the total linkage effect. Chennery, has classified interdependence effects as "effects on users" and "effects on suppliers" to describe the growth mechanism in the pole itself. He also notes that (p. 336) "interdependence is also more important for products sold to producers and hence it occurs typically in sectors related to manufacturing".

The "trickling down" of developmental impulses in time may change the locational structures within the region creating a new balanced spatial structure of development. The new spatial structure thereafter induces a range of innovations throughout its surrounding area. This process of organisation and diffusion will transform the existing patterns of population and production concentration cumulatively reinforcing and transforming the national space-economy. In the end the diffusion is supposed to lead to a convergence in levels of development between areas, (Williamson, 1965; Alonso, 1968, p. 9-10; Semple and Garthier, 1972) the elimination of dual economies and the integration of the economy, polity, and society of less developed areas with those of more developed areas (Friedmann, 1966; 1969).

However, Hirschman did note instances when polarisation effects only predominate in the interaction between the growing region and the stagnating region. In such a case, the growing region only draws upon itself all the resources of the stagnating region without giving anything back in the form of trickling down effects. To Hirschman,

the emergence and growth of differential economic development between regions is inevitable and is a condition of further growth anywhere. To him too, strong forces may emerge leading to a balanced spatial development once the phenomenon of polarised development has proceeded for some time.

2.5.2 J Friedmann: A Sequence of Stages in Spatial Organisation

Friedmann drew attention to what he called the "centre - periphery model". This model describes the relationship between the growth pole (or centre) and the surrounding regions (or the periphery). To him this interaction is an "organised sequences of stages in spatial organisation". The sequences are related to the various stages of economic development of a country whether developed or developing.

Friedmann assumes that economic growth tends to occur in urban regions but that its incidence works towards a progressive integration of the space economy. The urban centre according to Friedman (1972) becomes developed on the basis of an intrinsic or acquired locational advantage. Thereafter, it is able to attract specialised and potentially dynamic activities to itself which will provide a self-sustaining momentum of growth and change. With time the development diffuses in its widest sense towards the periphery creating a balanced pattern of spatial structure through the elimination of the periphery (Friedman, 1973). Diffusion can work through, for example, the provision of machinery, fertilizers, new hybrid crops and increased agricultural demand by the core to the

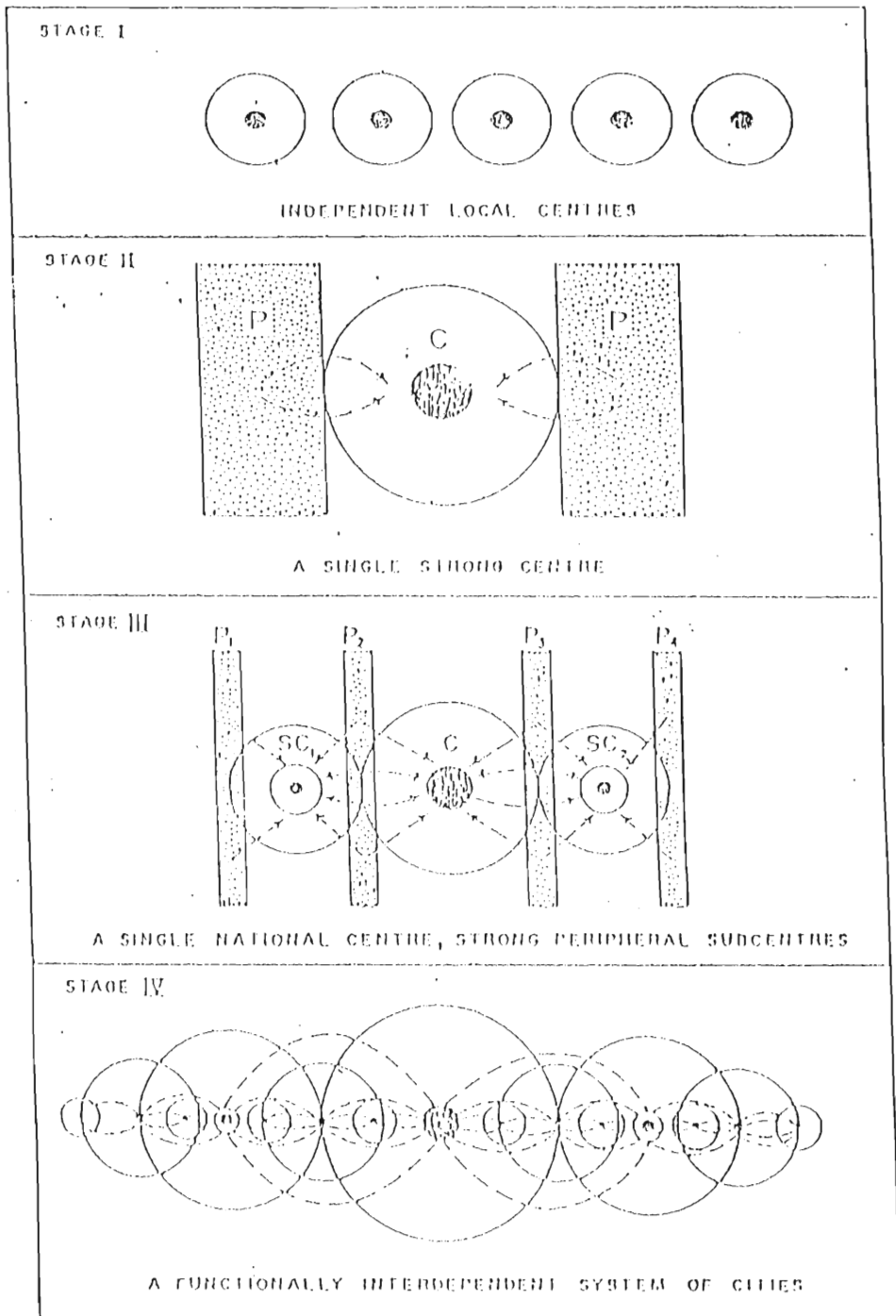
periphery.

Friedmann's stages appear as Figure 2.1. Stage one characterises the pre-industrial period with the urban centre lying at the centre of a small regional enclave. At that stage the volume of inter-regional relationship is generally small. Each centre exists in isolation from one another and growth possibilities are small and the economy soon stagnates. During the second stage the economy enters into a period of incipient industrialisation. The space economy is dominated by a single urban region which has emerged due to its attractiveness.

Labour, capital, entrepreneurs etc migrate to the centre from the periphery. This undermines the peripheral economy and the national economy is reduced in time to a single metropolitan region. This is akin to what Jefferson (1939) refers to as "primate city". In the third stage, investments are made in some sub centres thereby reducing the periphery to smaller and more manageable inter-metropolitan peripheries. Hence the growth potential for the nation is enhanced. At the fourth stage the intermetropolitan peripheries are absorbed into nearby metropolitan economies. There is a greater national integration of the economy, efficiency of the location of individual firms, maximum growth potential and minimum interregional balances are realised.

Friedmann's propositions are important in two respects : they clarify the re-ordering of spatial relations that occur under condition of growth. Secondly, it explains the changing influence of spatial

FIGURE 2.1 : A SEQUENCE OF STAGES IN SPATIAL ORGANISATION



SOURCE: J. FRIEDMANN: *Regional Development Policy: A CASE STUDY OF VENEZUELA*, MIT Press 1966
p. 30

patterns on system-wide growth. In these respects, it is recognised as a regional theory explaining the spatial incidence of economic growth. Some regional theorists like Myrdal contest the end result of the balanced growth model. To him this has not been supported by empirical evidence.

2.6 UNBALANCED GROWTH MODEL

Myrdal is the main proponent of this argument. His contentions are therefore discussed below as being representative of the views of the protagonists of this viewpoint.

2.6.1 Gunnar Myrdal: The Model of Circular and Cumulative Causation.

Myrdal's main idea is to expose how growth poles lead to cumulatively greater disparities through the operation of market forces. He calls this the model of circular and cumulative causation. This model is based on the idea that in a free economy where regional inequalities in economic development exists, the growing regions always tend to develop at the expense of the stagnating regions. His model therefore sets out to outline the internal growth process in the growing regions and their relationships with the stagnating regions.

The internal growth mechanism of the growing region is such that a cumulative process of forces act and react upon one another in such a manner as to keep the stagnating region in a perpetual state of poverty. These forces become inter-locked in a circular causation such that a change in any one induces the others in such a way that

these secondary changes support a first change with similar tertiary effects acting upon forces first affected. Myrdal contends that once the initial inequality has emerged supporting changes "move the system in the same direction as the first change but much further" (Myrdal, 1957, p. 3). This circular and cumulative process is shown in the flow diagram below (Figure 2.2).

The process can be explained in this way: locating an industry in a place brings opportunities for employment and higher incomes for those unemployed or employed in less prosperous activities. This expands the local market and creates a trained labour market as the industrial environment is made more attractive for new economic activities. This relative attractiveness leads to the flow of labour, skills, capital and commodities to the centre to produce deviation amplification (rather than deviation counteraction) forces. The flow of these factors to a centre leads to an expansion in the local economy.

Economic expansion introduces in its wake higher profits thereby increasing savings and an increase in investments. The prosperous and increasing population becomes attractive for enterprises especially those performing service functions. In this way local and public finances are increased through the realisation of more revenues. With increased industrial prosperity comes the creation of better infrastructural facilities, public utilities, services and educational facilities. In the long term, this reinforces itself and external economies become tied down in only the growth centre.

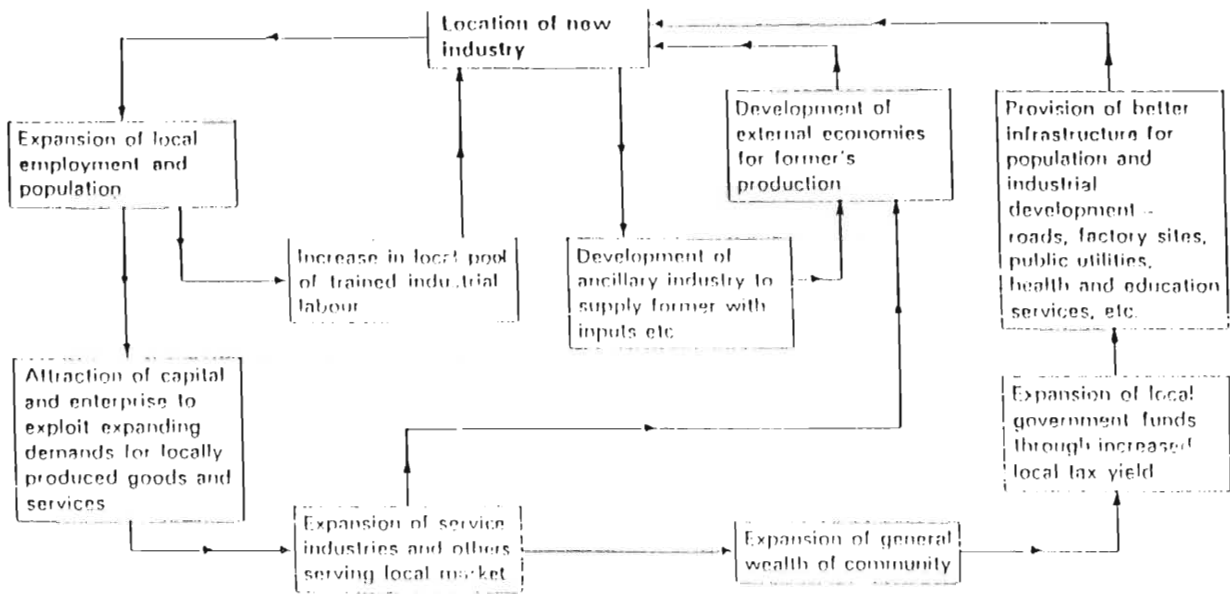


Figure 2.2 Myrdal's model of cumulative causation. The box marked 'location of new industry' can be seen as the birth of industrialisation in a particular area. In time, more industries will locate there to produce a growth pole. Occasionally cumulative causation may work in reverse. A factory may close and create an overall regional depression since other factories dependent on it close also. (Adapted from 'Models of economic development' by D. Keeble in *Models in geography*, edited by R. J. Chorley and P. Haggett, 1967 (London: Methuen))

Myrdal's differential growth model also recognises the effects of the interaction between the growing region and the surrounding regions. To him the process of cumulative growth in the centre (through the flow of factors such as capital, labour etc) also brings in its wake downward growth in the surrounding regions. The downward growth results from BACKWASH EFFECTS.

In simple terms backwash effects arise from the fact that every movement to an area implies a movement from another area which then becomes depleted and cannot therefore become developed. Among backwash effects migration in particular is noted as being particularly constraining on the development of the hinterland. This is because migration is selective and takes away the younger population leaving older and more dependent people in the rural areas. Besides migrants, potential entrepreneurs, capital, raw materials etc also flow to the core.

Backwash effects may also emerge from purely non-economic factors. This results from the fact that stagnation would produce poorer utilities, road systems, and infrastructure. Arising from the poverty and the general lack of proper utilities, the population would be unhealthy with a low productive efficiency. Myrdal also notes that the population of the stagnating regions would not only be believers in "more primitive variants of religion" but also advocates of taboos,

functional magic and superstition (Myrdal 1969, p. 29). All these factors become interlocked in a circular causation to promote backwash effects which operate to stunt growth in the peripheral areas. Myrdal therefore presents a strong case for controlling growth at the centre.

Besides the backwash effects, Myrdal noted significant spread effects of expansionary momentum (Myrdal, 1969, p. 31) from the centres of economic expansion to the other regions. This includes the demand for raw materials from the stagnating regions which may stimulate economic growth in the stagnant regions. Thus, if the expansionary momentum generated in the stagnating regions become strong enough to overcome the backwash effects from the growing regions, then new growth points of self-sustained economic expansion can develop in such regions. According to Moseley (1973), whether the gap between core and periphery widens depends on the rates of spread and backwash effects. Where the initial advantage is maintained through the cumulative causation process due largely to the benefits of agglomeration economies, growth will continue in the core and backwash effects will be stronger than the spread effects. The spatial pattern thus created is what Friedmann, (1966) refers to as "polarised development".

Spread effects are strongest in economies which have achieved a fairly high level of economic development since a high average level of development is accompanied by improved transportation and

communication, higher levels of education and a more dynamic communion of ideas and values. These will tend to neutralise the obstacles to economic expansion. The spread effects are weak in a developing economy where there is a low average level of economic development. Free market forces also act to create great regional inequalities in economic development. For as long as free market forces operate therefore the biblical quotation:

"For unto every one that hath shall be given and he shall have abundance; but from him that hath not shall be taken away even that which he hath" (St. Matthew Chapt. 25, vrs 29).

holds true. Due mainly to this tendency of polarised development to reinforce itself, various planning strategies have been suggested for helping to achieve balance in regional development. In many countries regional planning has focussed on two strategies: beginning the development process from the poor regions so that a balanced spatial development can be attained from the beginning (development from below model) or concentrating development in a few centres from which developmental impulses diffuse to help achieve balanced spatial development in the long run (development from above model).

2.7 THE DEVELOPMENT FROM BELOW PLANNING MODEL

It is the view of the proponents of this model that development must be tackled at the grassroots, that is the periphery itself. They believe that the spread effects from the growth centre may be weak or non-existent in reality, and at times backwash effects may even be so strong, thereby reducing the positive impacts which could emanate from

the growth centres. For these reasons, attention has of late been to concentrate the developmental efforts right within the less developed regions themselves. This will mean involving the local population and local resources in their own development, instead of relying on outlying growth centres. This concept, therefore, is an aspect of self-reliant development. With time the periphery could catch up with the growth centre creating a situation of more balanced development. Through this policy the less-developed countries seek to define a new order which will be conducive to their development and to gain control of their resources.

At the international level it has been claimed that development efforts must be concentrated within the less developed countries. Within countries development efforts must be concentrated at the less-developed regions (in the case of Transkei the rural centres) as a way of accelerating their development efforts so as to catch up with the developed regions (urban centres). At the micro-scale, development efforts must be concentrated at the low class residential areas so as to bring about a balanced spatial development.

2.8 THE DEVELOPMENT FROM ABOVE PLANNING MODEL

This strategy is based on the idea of growth poles. It holds that development must be concentrated in a few favoured centres. In time these will spread developmental impulses in the other regions.

During the past thirty years, the development from above model (the growth pole model) has been the dominant paradigm in the theory and practice of regional development policy. This has resulted from several reasons. It has arisen partly from the systematic investigation of relationships and structures which contribute to the ordering of people and activities over space with particular reference to developing countries (Keeble, 1967; Johnson, 1970). It has also arisen from the explanation of how the existing concentrations of population and production have come about and from attempts to prescribe an optimal pattern for future city systems (Moseley, 1973). It has also come about from the sequences of the process of development and underdevelopment as expressed in sequences of spatial organisation (Gould, 1970; Gilbert, 1974; Soja, 1976). Economic growth in especially the underdeveloped countries fit the growth pole concept particularly well (Hartshorn, 1980). Finally, it has emerged as a tool to achieve balanced regional development since traditional theories have not generated the development envisaged (Rosenfield, 1964; Paelinck, 1965; Misra, 1972; Moseley, 1972). In this respect certain aspects of growth pole theory such as the emergence of a growth pole and the spread of growth impulses have received a lot of attention as a potential planning tool (Friedman, 1966).

The aim of this approach as in the former, is to achieve greater convergence in regional development. Indeed, it has in some cases been used as a guide for development of new planned cities as focal

points for development in depressed areas (such as was suggested for Venezuela by L. Rodwin and Associates, op. cit.). The notion rests on the belief that a growth centre strategy would promote economic activity (notably job opportunities) at the population centre and from there spread to other regions through the establishment of mutually beneficial relationships with the other regions. It is also based on the notion that only through a rational process of resource allocation at growth centres can economic growth take place in a region. Regional planning then becomes a process of functional integration of the space economy and the concentration of people, resources and economic activities in a tightly woven network of settlements.

It is not surprising, therefore, that while the concept of growth poles and growth centres were envisaged to emerge naturally, planning strategies have now often been initiated to create them. The first of these planning strategies involves the concentration of infrastructure at a centre as the key to the growth of directly productive enterprise. Thereafter, agglomeration and threshold economies can be secured by attracting all manufacturing investment to that centre. These centres, it is hoped, will then help to transform the existing pattern of regional activities usually through exploiting regional resources for industrial production. In the course of time, extensive development throughout the surrounding area is induced by stimulating, for example, agriculture to produce food for urban use. Complementary material and organisational inputs from the urban industrial economy progressively transform rural and interregional interlinkages

producing greater convergence in development for the whole region.

The growth pole policy may thus be taken to mean a long term policy of deliberate intervention and the spontaneous development of forces aiming at creating or controlling growth poles in organisational and industrial as well as geographical space. The underlying motives may be the solution of certain problems of structural adjustment pertaining to specific problem areas within these regions or the generating of development through the implementation of growth poles capable of generating development. The latter has been the objective in the development of Butterworth as a growth pole.

In using the growth pole concept to achieve regional balance in economic development, the key issues to consider are those relating to the formation and spread of poles in geographical space, the structural characteristics of the spatial patterns of poles, the interaction between this pattern and the development process and the diffusion of developmental impulses from the poles. It has been noted that any settlement except those at the very bottom of the hierarchy is capable of serving as a growth centre (Boudeville, 1966).

Different strategies may be formulated such as creating new growth centres or activating already existing centres. In Southern Italy, Venezuela and India the policy involved the creation of new centres. In other countries the policy has involved the activation of old urban centres eg Birmingham in U.K.. In all cases large-scale, capital

intensive manufacturing plants are established at the growth centre from which the effects of expansionary momentum are expected to transmit development impulses to other regions. In Transkei growth centres have been based on this pattern.

2.8.1 BUTTERWORTH AS A GROWTH POLE

As a growth point, Butterworth was planned. Emphasis for generating growth at this centre was placed on the concentration of mostly manufacturing activities there. The government of Transkei, being concerned with the development of the country but with limited resources, committed itself to promoting private sector investment to achieve development. The Development Bank of Southern Africa was utilised for the mobilisation and the channelling of developmental funds to development projects. The funds were utilised to induce large-scale capital intensive industrialisation in selected centres from both local and private sources.

Since the 1970s when industrial development in Transkei became a national priority 70% of the investments has been in Butterworth (Le Roux and Marais, 1979). The two industrial sites set for industrial use in Butterworth were provided with road and rail links, and other infrastructural facilities like telephone lines, factory buildings, etc. Thereafter, industrial units were put up and offered on rental basis at concessional rates to industrialists. Many industries have been established at the industrial sites manufacturing diverse goods ranging from foundries through alcoholic beverages to clothing.

Through these manufacturing activities it has been the hope that development would be stimulated through agglomeration effects, and forward and backward linkages will also be created within the economy.

While the growth pole concept may aim at the attainment of balanced spatial development different strategies may be utilised to achieve its objectives at different places by different people. In the case of Transkei, the approach has been to attract industries from the developed parts of South Africa and abroad. Through such industrial decentralisation, Transkei may benefit from a filtering down of some developmental impulses. For industries to achieve this filtering down of developmental impulses, however, it must employ people in both its sector and the other sectors such as agriculture. Through employing people and paying them wages or salaries, there will be improvements in their standards of living, a decrease in the inequality of income and a general increase in the attractiveness of the whole region from increased buying power. The policy also includes interlinkages between centres and their peripheries and the achievement of regional multiplier effects.

SUMMARY

From the examination of the concepts and theories related to spatial imbalances in development, the linkages that are possible between a centre and a periphery and between industries at the centre, the

following has emerged:

- (1) Spatial economic development may take one of two forms : polarised or balanced.
- (2) Specific relationships are generated by developmental impulses and it is this which tend to either perpetuate or reduce spatial imbalances in development.
- (3) Manufacturing activities are capable of generating growth in both their locations and the areas surrounding their locations.
- (4) Growth centres result not only from the location within it of one major propulsive industry but also agglomeration effects that come from the concentration of many industries in a place.
- (5) Growth centres may be created by creating substantial agglomeration economies to satisfy certain planning objectives or they may emerge from intrinsic locational advantages.
- (6) The effect of a growth centre reduces with distance from the centre.

2.9 WORKING HYPOTHESES

From the review presented above, and the objectives of this study the following deductions will form the working hypotheses :

- (a) The problem of regional inequalities in development is evident in Transkei particularly in the rural - urban dimension.

- (b) The pattern of regional development planning in Transkei has led to the emergence of growth centres like Butterworth.
- (c) The modern manufacturing sector of Butterworth constitutes a key propulsive unit through which development impulses can filter to the less developed regions of Butterworth and other linked regions.
- (d) As distance increases from Butterworth, the spatial impacts of the manufacturing activities there decrease.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Following the examination of the concepts and themes relevant to this research, data collection and analysis was carried out through the following methods.

3.2 DATA COLLECTION : TYPES

Data collection, in terms of the objectives of this study, was primarily related to the following information:

- (a) Selection of variables to measure the extent of spatial inequalities existing between, especially, towns and rural areas of Transkei.
- (b) Identifying the factors responsible for the selection and growth of Butterworth as an industrial growth point.
- (c) Selection of industrial units in Butterworth which can be considered as propulsive.
- (d) Selection of techniques that highlight the impacts (spread and backwash effects) of the firms (including backward and forward linkages).
- (e) Selection of a sample of employees to examine their income and expenditure patterns and the kind and use of any training they have received at their place of work as part of highlighting the spread and backwash effects of the manufacturing firms in Butterworth.

3.3 DATA COLLECTION : SOURCES AND PROCEDURES

3.3.1 PRIMARY DATA ACQUISITION

The primary data for this research was collected from two main sources (i) through questionnaires and (ii) from TDC, Department of Commerce, Industry and Tourism and Statistical division files.

3.3.2 Measuring Regional Inequalities.

Regions may be defined on different criteria by different people for various purposes. Some geographers have, however, made searching criticisms of the validity of the regional concept (Kimble, 1951, p. 151-174) while others accept the usefulness of regionalisation as a method of inquiry but regret the prominence given to regional geography (Thornwaite, 1961, p. 345-356). In this research, the concern is to utilise regionalisation as a method of investigation to highlight the existence of spatial inequalities in development in Transkei. This will be done with the notion that spatial variations in social and economic inequalities may be such that the range discerned in a particular state will depend on a large part on the scale of regional sub-division adopted (Keeble, 1967; Stohr, 1974). For the purposes of this research, two regional sub-divisions have been adopted : (1) between the administrative districts and (2) between the town and the rural areas of Transkei. In spite of the disadvantages with regionalisation as a tool, these two proposed units possess the basic unifying or homogeneous characteristics demanded for the sort of

analysis envisaged.

While the boundaries of the administrative districts in Transkei are well known, rural and urban areas are not so clearly demarcated. It is however generally agreed that an urban area is the opposite of a rural area. If an urban area can therefore be delimited it will not be difficult to define the rural area. Defining an urban area is, however, not without problems. The reason for this is that the term urban is defined differently in various regions for different purposes. While the United Nations Organisation defines an urban area as a region having more than 20 000 inhabitants, different countries have their own criteria for delimiting the urban area. For instance, in Sweden, any built up area with houses 200 metres apart and more than 200 inhabitants is regarded as urban. In Japan, an urban area must have not less than 370 000 inhabitants while in the U.S.A. it is 2500 (Butler and Crooke, 1973, p. 1). Within this framework it is difficult to stick to one criteria in defining an urban area in Transkei for the purposes of this research. It seems reasonable therefore to adopt multiple criteria for the definition of urban areas. Bearing in mind the general characteristics of urban places and the specific conditions that characterise towns in Transkei, it is proposed that an urban area, for the purpose of this research be defined as an area with known boundaries, with some form of officially constituted local authority and with a minimum population size of 500. Arising from this definition, 31 towns in Transkei are recognised as urban.

3.3.3. Selection of Variables

Another important task in the process of regional analysis relates to the identification of variables for measuring the degree of spatial inequalities in development. The selection of such indices is, however, not an easy undertaking. This is due in part to the multiplicity of developmental goals which has led to a variety of developmental measurements. Various measures of development have been employed at various times by different people. Berry (1960) employed 43 indices to assess the degree of development of 95 areal units. The Washington based Overseas Development Council uses a composite of life expectancy, infant mortality and literacy to measure the degree of development through what they call "The Physical Quality of Life Index". To Richardson, a satisfactory regional development model should be expressed in terms such as spatial patterns of production and incomes, the diffusion of technology and innovation preferences, of rates of population increases and its size, and age distribution (Richardson, 1974). Using several indices and weighted by the relative of the population magnitude, Williamson has established that the pattern "of regional inequality is in the form of an inverted U reaching a peak in the middle income class" (P. 15) (Figure 3.1). Despite the multiplicity of indices being employed, it is known that no country or region is completely developed just as none is completely underdeveloped. Measuring the degree of development, no matter the criteria utilised is, therefore, only meaningful in comparative terms (Coates et al., 1977, p. 114).

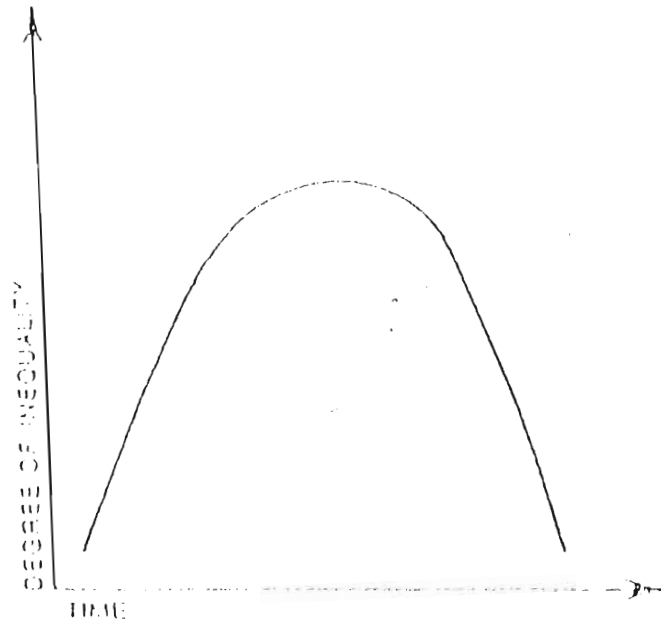


fig. 3.1 The Williamson 'inverted U' thesis (Source: Keeble, 1967, p. 265).

The duality of the Transkeian economy, characterised by two extreme poles namely: a highly urban and economically advanced group on the one hand, and a less urbanised and comparatively poor group on the other hand, is manifested in spatial terms in economically developed concentrations as against less developed rural peripheral areas. Accordingly, the variables selected reflect mostly, but not exclusively, on economic development. Consideration has also been given to the need to select indices for which the data could be collected fairly easily due to the general lack of vital statistics in Transkei which emerged in Transkei after independence in 1976 (Thomas, 1985). At that time, South African statisticians were withdrawn while there was an almost total lack of trained staff in the public service of Transkei. As a consequence, the collection of statistical data was brought to a virtual standstill (Tapscott and Thomas, 1985). Transkei's first five year development plan (1981/82 - 1987/88) where goals and targets were expressed in such terms as "improvement in agricultural output", "increased employment" and "enhancement of quality of life" instead of specific development targets also makes it difficult to select quantifiable and meaningful criteria. There is, in conclusion, a paucity of criteria on which to base the selection of indices to measure economic development progress. Against this background, Tapscott and Thomas (1985) established a list of possible indicators from which one could select some for the purpose of measuring developmental progress in Transkei. They stress the need to select a small number of indicators for which data is readily

available. Variables selected were, therefore, guided by these considerations.

Among such economic development factors the following were selected: availability of electricity, number of modern industries, number of banks & building societies, number of post offices, number of hotels, number of police stations, number of courts, availability of treated water, number of hospitals and number of educational institutions. Variables 1 to 5 are regarded as indicators of the general pace of economic activity. Variables 6 - 10 are surrogate measures of personal welfare.

3.3.3.1 Electricity and Treated Water Consumption

These affect the quality of life as well as being useful as inputs for industry. Electricity is regarded as a safe, efficient and cheap source of energy for homes and businesses. It is also vital for the successful operation of many businesses. Water supply in the Transkei, where rainfall of only about 300mm per annum falls mainly in summer, is very important. In a survey conducted by the Institute of Management and Development Studies of the University of Transkei (IMDS), 61% of household heads in the Umzimkhulu district identified water as one of their most difficult needs to provide (IMDS, 1985). IMDS, therefore, concludes "that the easier the access to water the better the quality of life" (IMDS, 1985, p. 59). Water supply is also important for an increase in the health and productivity of the population (Bazzel, 1971).

3.3.3.2 Police Stations and Courts

These two variables are important for the maintenance of peace and order. It is only through the maintenance of peace and stability that economic development can progress. It is therefore expected that places with these facilities will due to the presence of these institutions have the peace and stability to achieve a higher level of economic development than areas without these facilities.

3.3.3.3 Banks and Building Societies

The importance of these financial institutions lies in the functions they provide. The job of a bank or a building society is to mobilise savings and use these to promote economic development by lending them to others. They also provide a means of payment which is necessary for a healthy growth of economic activities. It is these functions which provide a means for the rise of corporate forms and the emergence of large scale industry. In the transformation from under development to a developed region banks and building societies therefore play a great role (Cairncross, 1962). Regions possessing these institutions will therefore be able to achieve a higher level of economic development than a region without these institutions.

3.3.3.4 Hotels

Economic development demands a transformation of institutions and the emergence of new ones (Mabogunje, 1980). One of such institution is the rise of hotels. By providing accommodation to the businessman,

entertainment to individuals and work to many people, they help to promote general economic activity and improvement in the quality of life in a region.

3.3.3.5 Post Office

The importance of the post office lies in its role as the medium through which messages are passed and received. Messages passed through the post office help to overcome the friction of distance for a tiny fraction of energy. Through its means people are able to maintain their networks without taking to the streets. This is important for economic progress and human welfare. The Research Institute of Telecommunications and Economics (Tokyo), for instance, concludes that, the single measure bringing the greatest improvement in quality of life is the telephone (Takasaki, 1977).

3.3.3.6 Hospitals

Hospitals are regarded as a measure of welfare. Besides welfare, they promote economic development by providing health and vitality to the working population in times of indisposition. Regions where such facilities are lacking will therefore suffer such deprivations which will affect the rate of economic development.

3.3.3.7 Manufacturing Industries

The advantages of industrial developments to an economy are well known. For instance, it is accepted that the promotion of industries in an economy leads directly to the creation of employment

opportunities and income on a wide front. Through the provision of employment and income socio-economic progress is enhanced within the country. Industrialisation also allows for the exploitation and mobilisation of natural resources which can be used as inputs by industries. To Aizenstat (1975) "industrialisation is the best measure of how far a community has been able to upgrade the results of human effort and this in turn defines the level of incomes". To him "industry simply means that instead of perpetuating low-yielding manual labour, man's effort is extended through the use of mechanical tools and outside sources of power, thereby multiplying several fold their effectiveness - or what is technically called productivity - and the income generated for the community and the worker himself" (Aizenstat, p. 30). In the longer term industrial development may improve the balance of payments position of a country.

Manufacturing industries constitute a strategic subdivision of the wider concept of industrialisation. This is because manufacturing besides employment creation is capable of adding income through forward and backward linkage effects as well as multiplier action on the regional income as a whole (Benbo, 1976). As a result, a country or region is considered as developed if manufacturing contributes, at least, 60% of the production of the industrial sector (Sutcliffe, 1971). It is not surprising, therefore, that the Transkei government places more emphasis on manufacturing industries in its industrial development programme.

3.3.3.8 Educational Institutions

The importance of education in economic development cannot be over-emphasised. Education provides the manpower and the technological know-how which is utilised in economic development. Access to education increases the literacy rate in a country which is important for economic development and human welfare. Golden has, for instance, established a correlation between literacy and economic development in the less developed countries and obtained a co-efficient of 0.98 (1962). A very high correlation has also been established between education and income (Gordon, 1969). For these reasons the presence of educational institutions is regarded as essential to economic development. Educational institutions however vary greatly in the sort of courses they offer and in the type of students they accept. All educational pursuits must of necessity start from a base. This base in the case of the Republic of Transkei is the primary and secondary schools. As the foundation of higher educational attainment the availability of these institutions are considered of prime importance. Educational institutions as described in this research therefore took account of only these institutions.

The variables outlined above are to be employed, individually and collectively to test the hypotheses that spatial inequalities especially between rural and urban areas have accompanied the development effort of the Republic of Transkei.

Having selected the criteria suitable for the measurement of the pattern of regional development in Transkei, it was found necessary to establish the means of collecting the required data. As this stage of the study is primarily concerned with establishing the differences in economic development between different districts and between rural and urban areas of Transkei, the two regions were utilised as the regional taxonomic units for the collection of the data. Data was collected from office files and official publications through personal visits to the relevant departments such as Commerce, Finance, Transport and Communications, Health, and the Statistics Division.

3.3.4 Impact of Industries

The impact of industries at a growth centre can be measured in terms of capital investment, turnover, purchases of raw materials and distribution of finished goods, or in terms of the provision of employment. The contribution of these generate both multiplier effects (diffusion) in the economy and agglomerative economies for the industries. The multiplier is related to the "trickling down" effects of economic growth (Hermansen, In Niles, 1972, p. 184). The multiplier works through interregional trade, transfer of capital from developed to underdeveloped regions, migration of surplus labour from the periphery to the core and increased demand for the products of the periphery. It will also bring to light the leakage which is akin to the backwash effects of growth poles. Regional multiplier analysis, therefore, provides a useful means of assessing the impact of a growth

centre.

3.3.4.1 Regional Multiplier Analysis

The multiplier describes the effect on regional output, income and employment of recurrent or new investment. The basic notion behind the regional multiplier is that an amount of money spent within an economic system whether national, or regional, will cause an increase in the level of income in that system by some multiple of the original expenditure. The multiplier therefore represents the change in the level of a region's income as a result of the injection of a certain amount of money. In spite of the variety of approaches taken Archibald (1967) estimated that the regional multiplier is about 1.25 for a typical region. Allen (1969) estimates that for Scotland at between 1.4 and 1.5. The actual value for any given region depends on factors such as size, industrial structure, and social characteristics. For instance, if the industrial structure of a region is such that very little capital goods are produced then the only part of the cash injection that is capable of generating a multiplier are the wages and salaries paid to the workers in the available industries and the induced investments that may arise from the presence of such industries (Wilson, 1968). The multiplier is also greatest within the sub region surrounding the location of a new project and decreases with distance from there (Brownrigg, 1971). It is generally agreed that the higher the leakage from the regional economy the lower the multiplier (Steele, 1969). Problems with the calculation of the regional multiplier are related to obtaining the

necessary data, necessary assumptions and the lack of agreement on the appropriate formula to be used (Tomlinson, 1983).

3.3.4.2. Regional Multiplier: Mierwyk Model

Mierwyk (1965) provides a reasonable method of conceptualising the multiplier using the three stages of investment contraction. These are the direct stage, the indirect stage, and the induced stage.

1. Direct Stage: This is concerned with the effect of the initial investment itself and/or the increases in output of industries which initiate the process.
2. The indirect stage: this reflects the backward and forward linkage effects of the direct stage on other industries or intermediate inter-industry transaction.
3. The induced stage: This incorporates consumption linkages resulting from the extra incomes and consequent demand created as the impact of the first two stages spread throughout the economy. The contribution of the induced stage to the multiplier depends on the consumers marginal propensity to save. Any addition to income which is not saved but spent represents the consumption linkages.

Whatever the initiating source of the multiplier process, its effects exceed the value of the new investment or the increase in the rate of output. Many researchers have noted that the regional multiplier is invariably smaller than the multiplier per se (Brownrigg, 1971; Stonier and Hague, 1972). The reason for this is that many if not most linkages leave the region. Extra-regional linkages, therefore,

represent regional multiplier leakages. The multiplier process is, however, often but not necessarily sequential.

3.3.4.3 Measuring The Multiplier.

An important objective of this research is to assess the agglomerative economies that the industrial firms enjoy and the extent to which this multiplier accrues to the local economy (the diffusion and/or the backwash that industries in Butterworth generate). This is intended to highlight the spread and backwash effects and the linkages among the manufacturing units in Butterworth. Data gathering techniques, types and sources were basically towards attaining this objective. The assessment of the impact was organised in three stages corresponding to the three stages propounded by Mierwyk. The impact of the direct stage is assessed basically on the space economy of Butterworth. Towards this end research concentrated on the activities of public institutions and what impact such activities have had on the space economy of Butterworth. Corresponding to the other two stages, primary data collection was mainly carried out from two main sources: (i) from the manufacturing firms (indirect stage) and (ii) from the employees in the manufacturing industries (induced stage).

3.4 PRIMARY DATA ACQUISITION: PROCEDURES

3.4.1 Identifying the Factors Responsible for the Emergence and Growth of Butterworth as an Urban Industrial Growth Centre.

The first stage of assessing the multiplier concerned identifying the factors for the emergence of Butterworth as an urban growth centre.

This process was accomplished by examining the activities of the Transkei Development Corporation (TDC). They identify industrial sites, provide infrastructure at those sites, approve industries to be established at those sites, provide loans for them, apply for concessions from the Transkei Industries Board for them, and provide them with housing, factory buildings etc. They also have development officers whose duty it is to evaluate the viability of the industries that people intend establishing.

It is clear that whether industries get established in Butterworth or for that matter any other part of Transkei, depends, to a large extent, on the TDC. They have played the major role in the development of Butterworth as an urban industrial growth centre. Part of this research is devoted to identifying the role that the TDC has played, and continues to play in the development of Butterworth as an industrial centre. Primary data was collected from the files of the TDC on its activities, and personal interviews were also held with certain key personnel of the Corporation.

Research was also carried out on the activities of the other public Institutions in Transkei. These notably are the Transkei Department of Commerce Industry and Tourism, the Butterworth Municipality, and the Transkei Department of Finance. Research sought information that would highlight the role of these institutions in the approval and provision of facilities that are favourable to industrialists and which attract them to locate in Butterworth. Information on new estates, number of

service industries, etc was also sought from the public institutions.

3.4.2. Indirect and Induced Stages of the Multiplier

For the two remaining stages of the multiplier, two sets of questionnaires were designed, one set for the industries and the other for a select group of industrial employees.

The first set of questionnaires sought to establish among others the linkages among the various industrial firms in Butterworth. Origins of material inputs and the destinations of finished products were demanded. Information was also sought on finished products and their uses, number of employees, expenditure patterns, concessions received, and the ownership of the firms. The second set of questionnaires was given to a select group of industrial employees. The questionnaire demanded information on their origin, how long they have worked for the company, what position they occupy, the amount of money paid to them as salaries or wages, their expenditure patterns including remittances, the relationship between the worker and the recipient(s) of such remittance(s) and the place of residence of the recipient(s). Information was also sought on training programmes that they have been required to attend as a result of their work, and what benefits they have received as a result of such training.

3.4.3 Sampling Techniques Utilised

Industries may be defined as the "totality of relations involving workers, employers and society as they develop to make use of the new

machines, processes and services that modern technology has made possible" (Kerr, 1976, p. 662). From this definition it can be deduced that a wide variety of activities can be classified under industry. It embraces aspects such as mines and quarries, manufacturing, construction, electricity, gas and water. Within the constraints of cost and time it was found necessary to select some of the industries and not others. The distinctive characteristics of the industries which justify their identification and selection are discussed below.

3.4.3.1 Selection of Industries

The first consideration with respect to the selection of industries relates to theory. The growth pole theory makes it clear that the pole's efficiency to diffuse developmental impulses depends on the propulsive industries established in it. Manufacturing industries, because they create forward and backward linkages in addition to the other benefits that one derives from industrialisation, are considered to have far more propulsive power than other types of industries. With regard to this consideration only manufacturing industries were selected in the sample.

The second consideration relates to size. A wide range of manufacturing industries exist in Butterworth. Some (especially those working under the umbrella of TRANSIDO) are very small. The impact of small firms is very weak. Size was, therefore, utilised to cut off a large number of the industries. With respect to size, it was decided

that industries included must be sufficiently large defined as (i) having a total investment of at least R50 000 and (ii) a factory floor area of at least 150 sq metres. This criteria cut off a large number of small scale concerns, especially in the informal sector, and is in conformity with the TDC's own yardstick (TDC preliminary Report 1989). The industries selected were mostly privately owned or joint TDC and privately owned companies.

Another consideration affecting the selection or otherwise of an industry related to the need to give as wide a coverage as possible to as many of the established industries as possible. This enabled a better assessment of the impact of the industries to be made. Using these criteria 49 industries were selected. The selected industries are shown as Appendix A.

3.4.3.2 Selection of Employees

Measuring the degree of induced spread was primarily directed at the employees in the manufacturing industries in Butterworth. In view of the large number of employees and the practical and logistical problems with interviewing all of them, sampling was employed. To achieve this end, initial information on the total number of industries and the number of employees was sought. This was obtained from the responses from the industries to the first set of questionnaires. It was noted that variations in the worker population related to factors like salary, position, education, sex, and age.

The large number of such variations made it imperative that stratified sampling, involving the division of the employees into various categories was necessary to ensure that a balanced picture of the employees could be obtained. This method of sampling has been recommended by researchers like Herbert and Evans (1974, p. 171-188).

A total number of 645 employees representing roughly 5% of the total work force of 12250 in all the selected industries were chosen. This figure was arrived at by selecting through a process of stratification an average of 5% of the total work force in each of the industries. Unless stated below, the variations in the employee population was accounted for generally by selecting a minimum of 5% of the total population of each category. In the first place the sample was varied so that at least 60% (392 out of 645) were females (reflecting the sex variation among the industrial employees). Procedures were also adopted to ensure that variations in the level of educational attainment and position being occupied by a worker was accounted for. In the case of position, a hierarchy of three levels was established. These are: senior staff (those in managerial positions), middle level staff (foremen, shift supervisors etc) and labourers. Samples were drawn from each of these groups. With regard to education the population was divided into two groups (i) well educated employees (matriculants and post matriculants) and (ii) poorly educated employees (below matriculation). Due to the fact that majority of the workers are poorly educated, an average of 3% of the total population in each industry (yielding a total of 365 out of 7840) was

selected from group one in each industry while from group two an average figure of 5% was selected (giving a total of 280 respondents out of 4410).

Using income, employees were divided into three groups (1) lower income group (that is, those earning less than R200 per month), (2) medium income group (that is those earning between 200 - 500) and (3) higher income group (that is those earning more than R500 a month). For the first two groups an average of 5% of all the employees in that category in each of the selected industry were sent questionnaires (representing a total of 583 out of 9760). For the third group approximately 1% of the total population were also sent questionnaires (representing 62 out of 2490). It is noted that these figures are approximate ones as variations were made in each factory depending on the size of the different categories in the labour force in each specific industry.

In each industry the samples were drawn and the questionnaires distributed in one visit to each factory at a specific time approved by management (usually during meal times). Respondents were briefed for a few minutes on the objectives of the exercise and made to complete the questionnaires immediately (except for the managerial staff from whom completed questionnaires were collected in a later visit). From the mass of data they provide, an assessment of the impact of the industries and the extent of their influence through employment was made.

3.5 SECONDARY SOURCES OF DATA

In addition to data obtained from the field, information was also obtained from the records of the Butterworth municipality, various departments and Institutes on various types of plans and policies which these institutions have formulated and intend to formulate on industrial planning. Several other pieces of information were gathered on regional planning techniques, their effects and the role of manufacturing industries in regional growth theory from books, journals, and official reports.

3.6 DATA ANALYSIS

Data analysis in this research was basically to test the hypotheses proposed for this research as set out in chapter two. The various techniques utilised to achieve this purpose and their justification are outlined below.

3.6.1 Measuring Regional Inequalities in Economic Development

A number of techniques exist for analysing data for the purpose of identifying patterns in geographic space. Depending on the nature of the occurrence of the geographical phenomenon, the spatial patterns may be analysed as point patterns, network patterns and areal or regional patterns. Areal patterns which will portray concentration and dispersion are the most relevant for this stage of the analysis.

To measure the concentration of an activity in a given town or region in Transkei, the proportion of the indices available (in percentage

terms) will be employed. In the case of treated water supply and electricity, their availability or non-availability was the only base of comparison. The technique outlined above is relatively simple to use and the data available for this research is particularly suitable for such a use.

In using the technique outlined above to test the hypothesis that spatial inequalities have accompanied the development effort of Transkei, three stages of the analysis are employed. One computes the percentage of eight indices (banks, building societies, post offices, courts, hotels, hospitals, manufacturing industries, and police stations) for each activity per district against the total in the whole country, while the other one computes the percentage for each index per urban area and the total for the whole district. In this latter case treated water supply and electricity were added and educational institutions excluded. Areas with electricity and treated water supply were awarded one point while those areas without these indices received no point. Educational institutions were excluded at this stage because their over concentration in the rural areas tended to present a very misleading picture of the situation in the rural areas. The combination of all the nine indices is then utilised to provide a value (in percentage terms) with which to gauge each region's level of economic development. Through this technique it is hoped to test the assertion that spatial inequalities especially between rural and urban areas have been the most glaring aspect of inequalities that have accompanied Transkei's economic development

effort.

3.6.2 Regional Planning in Transkei and the Emergence of Butterworth

To test the assertion that the pattern of regional planning in Transkei has led to the emergence of growth centres like Butterworth, it is proposed to trace the regional planning strategies that have been followed by Transkei. Through this, it is hoped to outline the processes that have led to the emergence of Butterworth as an urban industrial centre.

Besides tracing regional planning strategies, growth trends are also analysed. In this connection, Myrdal's technique of circular and cumulative causation was employed to trace the growth and development of Butterworth. Time series data is required for this type of analysis. As Myrdal has concluded, "... the power of a centre has its origin mainly in the historical accident that something once started there and not in a number of other places ..." (1957, p. 26). Research, therefore, concentrated on measuring the change over time of several variables. These include schools, housing, population of the town, manufacturing industries, number of Banks, post offices, number of townships built, and water consumption among others. These allowed the use of causal modelling techniques to trace the growth mechanism of Butterworth as a growth centre.

The technique of causal models or chains has been well elaborated as models that could be used to describe the major processes underlying

various geographical and other phenomenon (Harvey, 1969, pp 419 - 25; pp. 450 - 64; Forrester, 1969). Their use is often restricted to the identification of events or processes which are logically linked in a time sequence culminating in the current situation (Smith, 1961). However, independent processes which have a particular contribution to the variations underlying the existing patterns, may be revealed through this technique. In that situation the links in the chains are indicated by parallel flow lines indicating the direction of the individual processes or events. Causal chains are sometimes expressed as a mathematical model where for example $Y_t + 1$ is dependent upon a previous state of the same phenomenon. The causal modelling technique employed in this research is however merely descriptive and is designed to reveal the various processes and the links between them that have led to the emergence of Butterworth as the major urban industrial centre in Transkei.

3.6.3 Growth Centre and Distance

The notion that the volume or quantity of any given variable decrease at increasing distance from the origin of the variable (Thoman and Corbin, 1974, p. 172) was tested in terms of the impacts that the industries generate. To test the hypothesis that the influence of the manufacturing activities in Butterworth decreases with distance from Butterworth, it is intended to establish the agglomerative economies and the interaction fields for all the industrial firms.

Agglomerative economies are assessed on the basis of potential employment that may be generated over time for the population at that time and on the basis of the linkages among the various industrial units in Butterworth. Linkages among industrial units are established on the basis of interdependence and are particularly relevant for the analysis of industrial data (Meier, 1984, p. 368). On the basis of evidence in the industrialised countries, Chenery found that 90% of all input - output flows can usually be arranged in a triangular pattern around a core (1974, p. xiii). The decreasing impact of manufacturing activities with distance confirms the interdependence of manufacturing units. These linkages may be strong, weak or temporary.

There are two main types of linkages: backward linkages and forward linkages. Backward linkages among industries are based on the notion that every non-primary economic activity induces some supply inputs. The backward linkages, therefore, refer to inputs of the manufacturing firms and their sources. Sources of raw materials of the firms and their value in Rand terms are, therefore, analysed to establish backward linkages. Forward linkages are, however, based on the notion that unless exclusively for final demand every output from a firm will induce a utilisation of that output in another firm. The marketing pattern and especially areas where the products are sent and the uses to which the products of the industries are put will, therefore, form the raw data that will establish the forward linkage effects.

To test the effect of distance on the manufacturing activities in Butterworth, regression analysis was also conducted. Regression analysis describes the relationship between a dependent variable and an independent variable. They are commonly based on the least-square criterion. The regression line itself summarises the relationship between two variables such that one can calculate the value of one variable if the other is known. It also gives the closest approximation of a relationship at all stages. In this research the regression technique was used to measure the impact of industry with increase in distance. Through the use of this technique one can assess both the regional and the local spatial patterns (Hagget, 1970). The technique is to be used to test the hypothesis that as distance increases, the impact of the manufacturing industries in Butterworth weakens. The reference point of the distances is Butterworth.

CONCLUSION

In addition to the techniques outlined above, various figures, tables, maps, graphs and other techniques are utilised at various stages of the research to help in the elucidation of data. In the chapters that follow the various techniques of data analysis discussed above are employed at various sections to carry out the objectives of this research. The first stage in the course of analysing the data is to establish that spatial inequalities in development have accompanied the development effort of Transkei. The next chapter is devoted to that aspect of the study.

3.7 Possible Limitations of the Study

Among the possible limitations that this study may suffer from are the following :

- (i) The study deals with the impact of industrial development in Butterworth on the development of Transkei. However, the closeness of the relationship between developments in Transkei and that of the Republic of South Africa has been such that it has not been possible to limit the discussion to only Transkei. In many parts of this research therefore Transkei and the Republic of South Africa are treated as one regional economy.
- (ii) The difficulty of collecting information from industrial firms has been noted in several studies (Tomlinson, 1983). In the Transkei this has been a persistent problem to the Department of Commerce and Industries and to the Transkei Development Corporation. A report in the "Daily Dispatch" of 19th April 1989 attributed to the Transkei Minister of Industries and Commerce, Mr. Mgudlwa, mentions this problem as one of the most formidable confronting his Department. While several ingenious steps were devised in the collection of the data for this research, estimations were provided by some of the firms in some instances because they claimed the actual figures may not be available for some time to come.
- (iii) The collection of data for the research took place in the middle of June 1988 and any assumptions made are with respect to the data available at that particular time.

CHAPTER FOUR

THE EVOLUTION OF THE TRANSKEIAN SPACE ECONOMY

4.1 Introduction

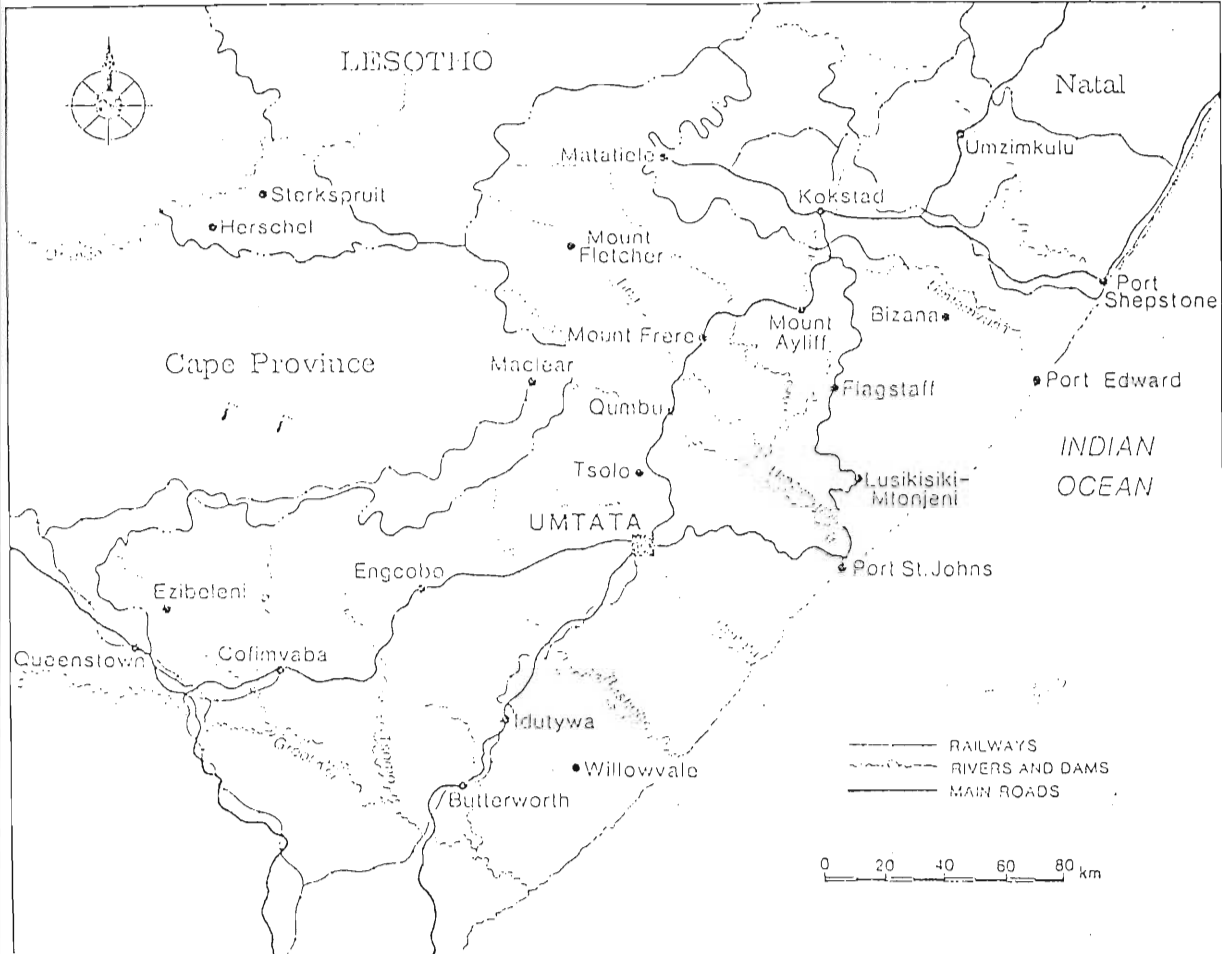
This chapter presents a historical insight into the factors which have affected the development of the space economy (the spatial manifestation of the national economy) of the Republic of Transkei. The basic proposition underlying the presentation is that, given Transkei's present position along the evolutionary development path, a unique combination of factors have combined in a cumulative and causative manner to produce substantial variations in the rates and levels of economic development and growth in different regions within the country. The historical approach therefore seeks to present "... an understanding of the regional settlement and growth patterns of the past as a necessary foundation for an understanding of present differential levels of living and rates of economic expansion" (Perloff, et al., 1960, p. vi). Through the analysis it is hoped to present a spatial development framework to serve as the basis from which present and future development strategies could be evaluated. The chapter is organised within a regional framework, on a comparative basis (between districts and between rural and urban areas) and in a temporal setting. Considerable attention is paid at each stage to the determinants and processes which have shaped the pattern of regional economic development.

4.2 The Republic of Transkei

Transkei (Map 4.1) is bounded by the Indian Ocean in the east, the Drakensburg and Witteberg mountains in the north and north-west, the Cape Province and Natal in the east and the north. The total area of the country at present, according to the Department of Agriculture and Forestry is 43,365 263 sq ha (DBSA, 1987, p. 2-7) and consists of a broken terrain stretching from the coast towards the hinterland. The territory resulted from a series of treaties and territorial annexations of the Cape Government through six proclamations promulgated during the years 1879 to 1894. The annexations took the following course :

1. The land between Kei and Bashee rivers and Griqualand East, between Umtata and Umzimkulu rivers were annexed by Act 38 of 1877.
2. Port St. John's, the estuary of the Umzimvubu river and some land along the river was first purchased from Mpondo chief Nquiliso for £1000 in 1878 handed over to the Cape Government by the Mpondo chief Mqikela for an annuity of £200 and formally annexed by Act 35 of 1884.
4. Thembuland, consisting of Thembu proper, Emigrant Thembuland, Gcalekaland and Bomvanaland was annexed by Act 3 of 1885.
5. The District of Mt Ayliff was purchased from the Mpondo nation for £600 on December 9, 1886 and annexed by Act 37 of 1886.
6. The Rhode Valley, situated between the districts of Mt. Ayliff and Mt. Frere was purchased on December 9, 1886 and annexed by Act 45 of 1886.

MAP 4.1 : REPUBLIC OF TRANSKEI



Source: Africa Insight, Vol. 17

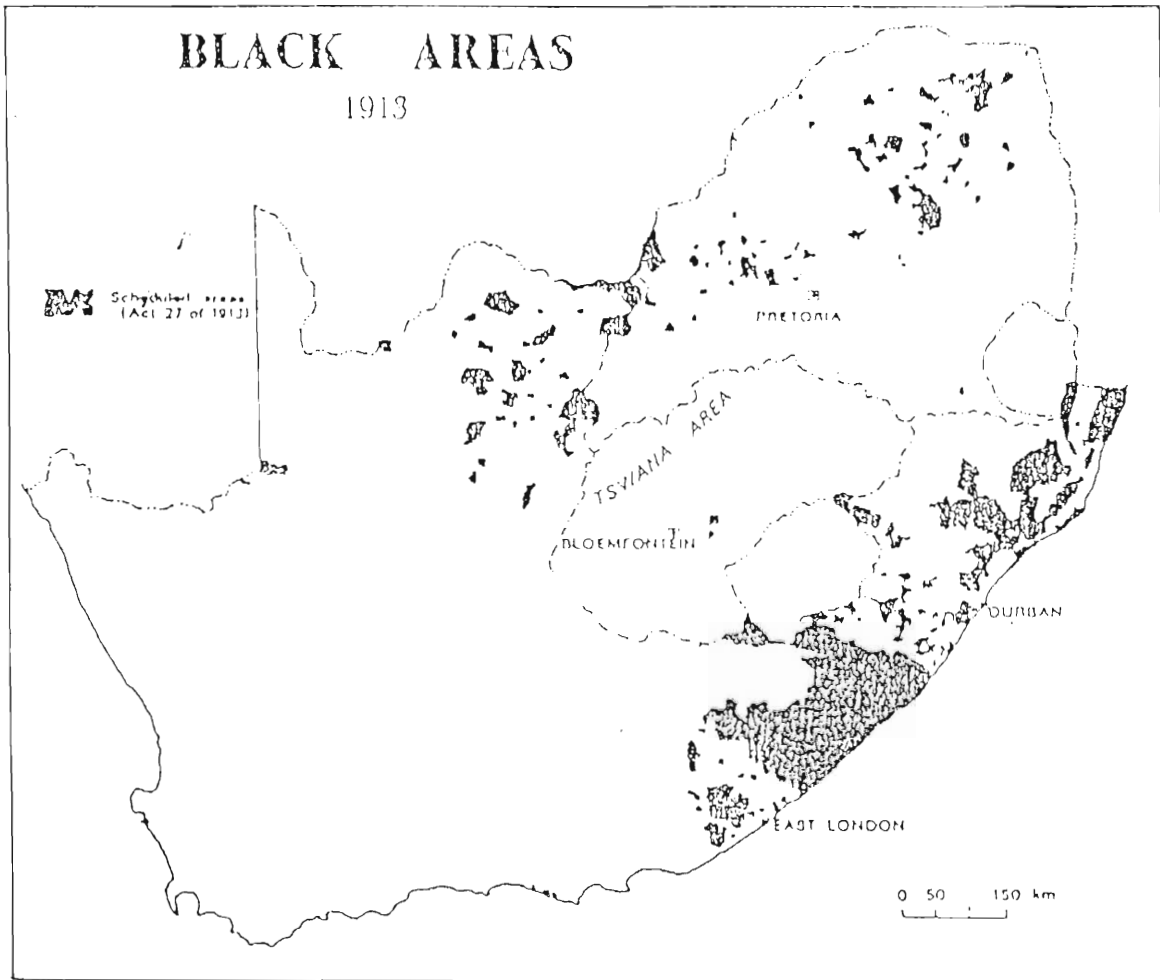
From its very inception the territory was treated as an African reserve. Following the inception of the Union of South Africa in 1910, the Bantu Land Act of 1913 was passed which gave legal backing to the territory's position (in addition to other areas) as "scheduled areas" set aside specifically for black occupation (Map 4.2). The native Land and Trust Act (1936) established the South African Native Trust as the legal owner of these territories.

After the passing of the Promotion of Bantu Self-government Act. No 46 of 1959 eight of the scheduled areas (including Transkei) were recognised as national states. These national states were then referred to as "Black Homelands". The Transkei territory was granted self governing status on the 30th of May 1963. Independence was granted to the territory on 26th October, 1976. In spite of the territory being granted independence it has maintained very close relations with its former colonial power with which it shares many regional policies.

4.3 Evolution of the Space Economy

Much research has originated from regional scientists to explain the processes generating patterns of national space economies as they evolve over time. Several models have resulted from this research and are mostly couched in terms of the historical development of particular spatial structures. These models therefore provide a useful framework within which to examine the spatial patterns of

MAP 4.2 : SCHEDULED AREAS - 1913



SOURCE: Occasional Paper No. 7, Department of
Geography Queen Mary College
University of London

development in Transkei. Most notable among these models are those of Hirschman, (1958); Ullman, (1958); Perloff and Wingo, (1961); Rostow (1960); Friedmann (1966); Taaffe, Gould and Morrill (1971). Research by Fair, (1965); Board, Davies and Fair (1970); Schmidt, (1973); Browett and Fair, (1974) and Browett, (1975) indicates that tested against the available evidence, these models have validity in the explanation of the South African space economy.

As indicated earlier on in chapter one, the validity of these models within the context of many Third World space economies have however been challenged (Myrdal, 1957; Piori 1972; Slater, 1975; Mabogunje, 1977). The basic criticism has been on the notion implicit in these models that an ultimate convergence in development between core regions and peripheral areas within a national space economy ultimately results from an initial imbalance in development. It is held that while there may be evidence in the developed countries to support this contention no such evidence has been found in the Third World to support it. Rather research by many regional scientists (Myrdal, 1957) tends to indicate that, once inequalities are set in motion within a Third World space economy, disequilibrating forces tend to be maintained by the core areas. Thus, rather than being self-corrective, development is characterised by processes of circular and cumulative causation which maintain the essential structures of inequality over time unless substantial structural adjustments are initiated within the space economy. The writers identified three time periods: the pre-colonial, colonial, and post-colonial periods.

Within each period there is "... a corresponding structure of the space economy which standing in some optimum relation to a transformation path leads to succeeding periods" (Friedmann, 1963, p. 53). According to their findings inequalities have increased over the three time periods. These periods would be used in analysing the evolution of the Transkeian space economy which typifies the Third World situation. The pre-colonial period ends in the early part of the 19th century and is characterised by the minimal role of outside influence in the evolving space economy. The period of colonial rule which ended at the time of independence in 1976 is characterised by the supreme influence of outside forces in the shaping of the space economy. The post independence era which is from 1976 to now has been characterised by various policies aimed at restructuring the space economy and promoting development. It is being proposed here that the evolutionary pattern of the Transkeian space economy, has largely depended on developments within these three time periods.

4.3.1 The Pre-Colonial Period ; Era of Regional Differentiation

The analysis of the evolution of the Transkei space economy commences with the migration into the territory by mostly the Xhosa people, a sub group of the Cape Nguni in the early part of the sixteenth century (Wilson, 1959, p. 167-80). At this time hunting was the major economic activity but the gradual increase in settlements diminished game meat and necessitated the introduction of sedentary forms of agriculture. Initially sorghum was planted but maize was later introduced as another staple food. Animal husbandry was also widely

practised. Thus in the course of time the inhabitants became mostly cattle-herders and hoe farmers and they lived on well-watered lands in dispersed kraal settlements each of which could supply most of the economic needs of its inhabitants (Elphick and Gilione (eds), 1979, p. 295). Even though sporadic trading with neighbouring chiefdoms, and passing ships was carried out production was largely geared to internal consumption (Wilson, 1971). The basis of subsistence at this time was herding, hunting and cultivation. The relative importance of these activities varied with changes in natural conditions, location and population density. The increase in the exchange of ivory, horns, hides and cattle for blankets, beads, hoes, picks and guns between the local people and itinerant white traders took place with increasing regularity after 1830 (Hunter, 1964, p 2).

During the greater part of this period and the early part of the 20th century "the typical settlements ... were ... not villages but individual homesteads, situated a little distance apart and occupied by the owner, his family and dependents" (Shaw and Van Warmelo, cited in Lewis and Mrara, 1986, p. 376). The homestead pattern of settlements are in sharp contrast to the settlement patterns of the Sotho and Venda (Hawkins and Associates, 1980). Each homestead consisted of a series of huts two belonging to each wife (one used for living and the other used as a store). The size of each homestead therefore depended on the number of wives the owner of the homestead had and sometimes tribal customs. Shaw and van Warmelo (1972) note that "the average homestead consisted, among the Xhosa and Thembu of

six to twelve huts and in Pondoland of about twenty" (Lewis and Mrara, 1986, p. 376). The number of huts declined from the beginning of the present century as polygamy declined in importance. Formerly, some owners "liked to be as isolated from other homesteads as possible, to avoid having to share the grazing of their herds" (Shaw, van Warmelo, 1972 cited in Lewis and Mrara, 1986, p. 376).

The homesteads occur in clearly defined and named clusters usually settled by a dominant lineage or lineage segment. Such clusters of homesteads were referred to as "location sections". These location sections are the closest approximation to a village in Transkei. At this period in Transkei's history, capital was scarce and extensive land use was the norm. The supply of treated water, electricity and any of the modern amenities was not available in any of the location sections. The space economy depended largely on subsistence agriculture particularly animal husbandry and crop farming in the favourable areas. As at the beginning of the 20th century therefore, spatial imbalances in development among the settlements in Transkei were largely non-existent. The spatial pattern could merely be described as regional specialization and differentiation (animal husbandry or a combination of animal husbandry and crop farming).

4.3.2 The Colonial Period : Emergence of Spatial Inequalities in Development.

Towards the end of the 19th century Transkei was subjugated to an extra-territorial authority. Consequently, the task of the

administration of the territory and its inhabitants tended to assume more importance. Colonial governments perceived the need for administration to a greater extent (Christopher, 1984, p. 68). Annexation of more territory was usually followed by the appointment of agents for the territories so annexed to maintain peace and order in such areas. As the Transkei territory expanded through further annexations it became necessary to divide the country into smaller units (magistracies) to ensure easier administration.

As a black reserve, however, each magistracy in Transkei was administered by " ... Xhosa and Thembu tribal chiefs, under the strict supervision of white magistrates" (Muller, (ed), 1986, p. 196). In 1894 the Glen Grey Act (Act No 25 of 1844) was enacted which provided for a council system and amalgamated many of the magistracies into districts. The first of these districts were those of Tsomo, Butterworth, Nqamakwe and Idutywa. The day to day administration of each district was placed in the hands of the magistrate. In 1903 the districts (three at that time) were united to form the Transkeian Territories General Council (TTGC). A chief magistrate was appointed as the chairman of the TTGC, with the other members of the council as the district magistrates (all being white) and three members of every district (these being black). The TTGC had some powers in local administration but the final decisions were made in Cape Town and later Pretoria. Transkei was incorporated into the Union of South Africa in 1910. The system of administration was subsequently extended from district to district until by 1926 it was functioning

over the whole of Transkei. As at the time of independence in 1976 there were 26 districts in Transkei. The magistrate in each district exercised judicial functions in addition to his administrative functions. In each district, a district capital was selected as the centre of administration for the district. Administrative offices, Police Stations, residences, and court buildings were provided at these centres for the convenience of the administration.

There were at this time several European settlements in Transkei. As part of Governor Grey's policy of turning blacks into "... useful servants, consumers of our goods, contributors to our revenue ..." (speech to Parliament, 17th March, 1855, quoted by du Toit, 1951, v. 1, p. 88), he encouraged many whites to settle in the Transkei so that western culture and influence could be spread among the people. In furtherance of this policy, Umtata for instance, was established by white private individuals when chief Ngangalizwe gave them the land on the banks of the Umtata river to establish a buffer between his kingdom and the Pondo tribesmen. There were other settlements which existed as military headquarters to prevent "... savagedom and interminable intertribal warfare" (CPP, G4, 1983, Appendix C, p. 85,). Military garrisons were also needed to maintain peace and "... friendly terms with us and those who are under us ..." (CPP, G 21- 1975, p. 131). Some other settlements were created as missionary centres (Bayete, 1955, p. 7). When the need for district administrative centres emerged these centres became the obvious

choices. Some of the administrative centres were however, new creations of the administration.

Having emerged as administrative centres and offering better security, trading functions were started as an accompaniment to the church and administration. The traders were attracted to places where people had to come to pay taxes or gather for communion (Christopher, 1984). The centres expanded with the increase in administrative services and the active encouragement given to European settlement by Governor Grey. It is these centres which have now emerged as towns and the urban centres of the country. In Transkei, therefore, it is government either directly or through its agencies which have influenced the siting of towns. During this period, fiscal, magisterial and electoral divisions were organised by and around the urban centres, in which were to be found in addition educational, legal, and ecclesiastical establishments. The creation of these centres set in motion several factors which were to create spatial inequalities in development between the centres and the surrounding rural regions.

The first of the many factors relates to the policy of racial separation embarked upon especially after the inception of the Union of South Africa in 1910. Blacks were recognised in the Union constitution as separate communities subject to a system of differential rule. Several laws were instituted to give effect to this policy. The Land Act of 1913 (Act No 27 of 1913), for instance, was intended among others to put an end to the squatting of blacks on

white farms by regulating the purchase, ownership and occupation of land outside the urban areas. The Black (Urban areas) Amendment Act, 1930 (Act No 25 of 1930) also introduced residential segregation in urban areas and influx control to regulate the rapid growth of the urban black population.

The segregationist trends finally resulted in the passing in 1945 of the Black (Urban Areas) Consolidation Act, (Act 25 of 1945). This Act fixed and defined the powers and duties of urban local authorities and their officials with respect to the black population within the areas under their jurisdiction. It bound them to set aside townships and hostels for accommodation of black persons and prohibited the acquisition by the black, of any interest in land inside a city or town except under specified conditions. The Act also limited the jurisdiction of the councils to only the specified areas. The effect of these laws were that even though Transkei was recognised as a black area, the 26 towns in the territory by the time of self government in 1963 remained effectively white. Blacks were accommodated at distances from the towns. For the black areas the standard housing units in Transkei has been of two kinds: the four room unit (N51/6) and the five room unit (N51/9). Most of these housing units were constructed by the South African Bantu Trust (SABT) and were put up mainly in Umtata and Butterworth. As at the end of March 1975, 3 468 houses had been built in the black areas of mainly Umtata and Butterworth at a cost of R1661,5m by SABT (Benbo, 1976). The other housing units built in the urban centres however varied greatly in

style, were more elegant and were designed mostly for the occupation of the white population group. Thus, "... in Southern Africa, (where) a formal racial policy exists, the contrast between the two areas (black and white) may be very sharp" (Mabogunje, 1980, p. 153).

The second most important factor in the introduction of spatial inequalities in development within the space economy which derives from the first was the establishment of formal institutions (formerly Village Boards but later referred to as Municipal Councils) to administer the towns. These boards introduced bye laws which regulated building structures, establishment of facilities such as parks, town halls, and various other facilities in the areas under their jurisdiction. These councils were established in terms of the Village Management Act of 1881 which was later superceded by the Municipal Act of 1882. In terms of the legislation an area could only have a council when it was proclaimed a town.

The Municipal councils derived revenue from fees, rates and various levies that they charged and they were also permitted to borrow money from financial institutions to provide basic infrastructure. Since the inhabitants of these centres were all in gainful employment as administrative staff or traders they could afford to pay the various council rates. The councils, therefore, had money to develop the areas under their jurisdiction. In consequence, the urban centres received accelerated development vis-a-vis the rural areas.

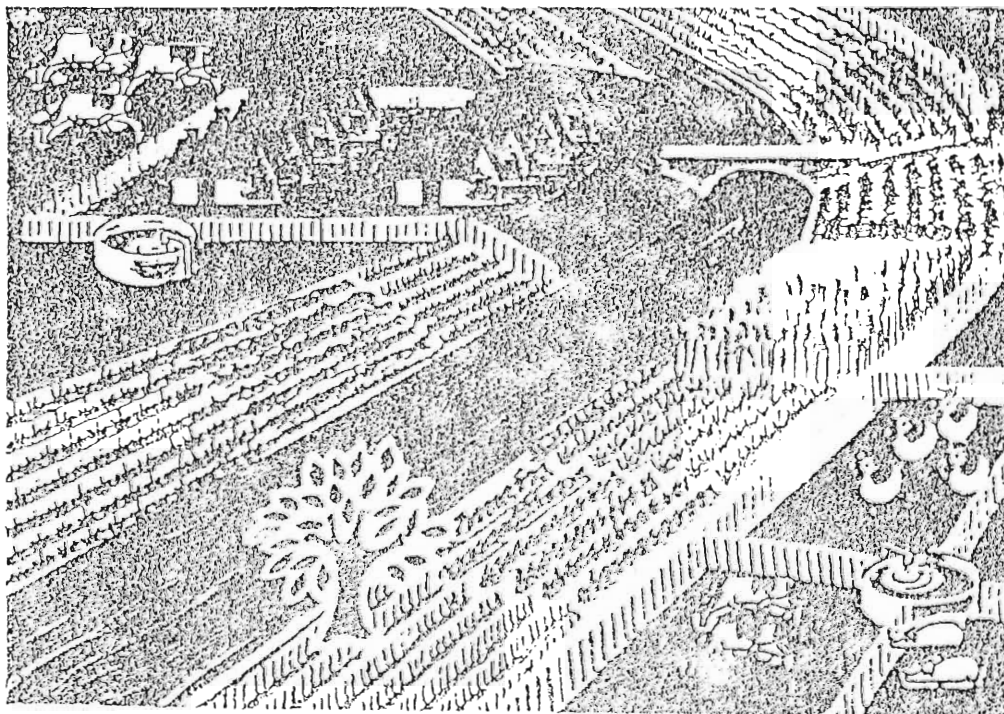
One other important factor that was to cause the emergence of spatial inequalities in development in Transkei was the introduction of planning regulations. Planning in general in Transkei has taken two forms. The first involves agricultural planning and implementation with a view to bringing about optimal soil utilisation (sometimes referred to as Betterment Schemes). This form of planning is solely restricted to the rural areas. The major part of this planning rests on the resettlement of rural people in planned villages and the division of the available land to the community (Benbo, 1976). It also involves the control of grazing animals to prevent soil loss through exposure to the agents of erosion. It is estimated that as at present nearly 62% of the land area of Transkei has benefited from this form of planning (Figure 4.1). However, this form of planning did not involve the establishment of specific formal institutions for the purpose nor were they backed by stringent rules and penalties. It was carried out by the Department of Agriculture.

The second form of planning involves the physical planning of urban areas. All urban areas have benefited from this form of planning. Physical planning of the urban areas involves the creation of plots (0,1 - 0,2 ha) with a network of streets between them. It also includes building regulations which in all cases required that the houses built on these plots be set back from the streets to provide space for gardens (Haswell, 1979). The regulations also laid down

FIGURE 4.1 : THE PLANNING OF RURAL SETTLEMENTS



A - Before planning



B - After planning

Source : Benbo, 1976

specific rules that should be complied with before one could put up a house and included some general specifications to which the house should conform. These regulations also heralded the imposition of fines for their contravention. These have proved useful as a deterrent to infringing planning regulations and a useful source of revenue for the urban councils. In general urban planning has been more detailed, more specific and more strigent in its requirements.

Finally, the urban centres received support from the central government through the building of roads, railways and the provision of grants to construct housing estates, dams, bridges, and other development projects. The money was provided mostly through the South African Bantu Trust (SABT) which was appointed in terms of the Bantu Trust and Land Act of 1936 (Act 18). This source of funding was of particular importance as local funds were not enough to embark on such large-scale projects as the building of townships, road networks and dams to supply drinking water. For lack of the same level of support the rural areas were denied many of the infrastructural projects. In describing the rural areas of the Herschel district for instance, MacMillan (1930, p. 147) notes that the rural areas "had obviously received no tangible or visible benefit from public expenditure on its needs and lacked attention to the simplest material wants like bridges, roads and public buildings. It was therefore easy to distinguish these areas from the white area".

In sum it is held that the establishment of a colonial economy unleashed certain factors which imposed on the landscape a new system of central places. These factors resulted in development proceeding in only the urban centres while the rural regions remained largely stagnant. Considerable inequalities in development, therefore, emerged between the rural and urban areas. The evolution of a hierarchical spatial structure in Transkei may however be accounted for by the greater role which the urban centres were required to play in the fulfilment of the administrative function.

At the urban centres, manufactured commodities were sold and there were limited spatial linkages with the surrounding countryside in terms of industrial development which could have been used as one of the key factors in rural development.

Transkei, thus obtained independence with considerable inequalities in its space economy (especially but not exclusively between urban and rural areas) that has been externally induced. Before independence, however, these towns were small. The extent of the inequalities were therefore limited. Table 4.1 below gives the population of these towns from 1891 to 1970. From the table the small size of these towns before independence can be deduced. Indeed as late as 1975 (before independence in 1976) the total urban population for the whole country was less than 70 000 or less than 8% of the population (Benbo, 1976, p. 130). Besides Umtata and Butterworth, no other town

TABLE 4.1 : TOTAL URBAN POPULATION BY DISTRICT 1904-1970

DISTRICT	1904	1911	1921	1936	1946	1951	1960	1970
Bizana	-	-	377	469	423	502	725	1 210
Cacadu	653	462	532	819	740	967	950	1 234
Centane	101	-	-	291	245	277	293	310
Cofimvaba	-	215	-	452	505	497	717	1 213
Engcobo	2 070	302	451	640	700	1 033	1 155	1 055
Gatyana	-	-	-	456	456	443	557	564
Gcuma	564	899	1 050	1 205	1 542	2 131	2 350	2 769
Herzochiel	-	-	-	-	-	-	-	311
Idutywa	450	445	763	800	737	2 096	1 305	2 500
KwaBhaca	-	399	507	916	902	1 430	1 320	2 495
Libode	-	-	-	315	317	390	441	615
Lusikisiki	-	-	-	433	545	743	845	1 174
Matalale	865	953	2 434	3 595	3 524	4 095	4 303	5 105
Magesibeni	212	247	422	417	619	675	656	1 376
Hc Fletcher	150	290	294	556	600	636	641	1 022
Hqanduli	-	230	-	350	307	411	304	373
Hqeloni	161	-	-	290	361	453	397	603
Hqamakwe	90	255	503	570	690	309	207	392
Qundu	217	254	265	412	593	740	699	716
Siphazeni	-	-	-	473	574	653	625	755
Tabankulu	246	-	-	444	553	626	614	742
Tsolu	241	332	433	716	824	837	944	1 779
Tsomo	-	-	-	273	251	425	364	412
Umtata	2 342	2 274	3 498	5 547	7 340	9 105	12 196	25 216
Umtimkulu	737	279	-	798	776	954	990	3 494
Umtimvubu	407	770	479	734	921	1 024	1 169	1 817
Xalanga	1 441	1 320	1 356	1 492	1 597	1 066	2 240	4 992
Xhosa	-	-	-	-	341	355	396	450
TOTAL	10 975	10 084	13 364	23 634	27 194	33 947	37 605	66 282

Source : TMS Census Surveys, Transkei

had more than 5 000 people. Table 4.2 below list the urban population by race from 1904 to 1970).

Table 4.2 : URBAN POPULATION OF TRANSKEI BY RACE 1904 - 1970

		1904	1911	1921	1936	1946	1951	1960	1970
WHITE	M	2287	2484	2950	4626	4633	5384	5165	4160
	F	1738	2153	2976	4636	4668	5335	5235	4705
	T	4025	4637	5926	9262	9301	10719	10400	9315
AFRICAN	M	3257	2612	3413	6624	8006	10245	11299	25109
	F	2373	1743	2682	4798	6115	7562	10560	26494
	T	5630	4355	6095	11422	14121	17807	21859	51603
OTHER	M	583	498	590	1390	1804	3142	2624	2574
	F	737	594	753	1560	1968	2279	2722	2790
	T	1320	1092	1343	2950	3772	5421	5346	5364
TOTAL	M	6127	5594	6953	12640	14443	18771	19088	32293
	F	4848	4490	6411	10994	12751	15176	18517	33989
	T	10975	10084	13364	23634	27194	33947	37605	66282

Source: IMDS Census Surveys, Transkei.

4.3.3 Post Independence Period : Era of Marked Spatial Inequalities

Since independence in 1976, several policies have been taken by the government, ostensibly aimed at restructuring the space economy. These policies involved the lifting of legal restrictions on the settlement of black people in the towns, the expansion of social facilities and increasing employment opportunities through the establishment of secondary and tertiary activities.

The process leading to the granting of legal rights to people of colour to settle in the urban areas began before Transkei assumed independence. The promulgation of the South African Proclamation No. 38 of 1963 was the first indication that the towns would change

from white to black control and responsibility. The effect of the proclamation was noted in especially the town of Mount Frere where restrictions were lifted to the titles and servitudes on a few plots. As the country prepared for independence various proclamations were issued declaring the twenty six towns in existence at the time reserved for occupation by black persons who were citizens of Transkei.

After the attainment of independence the establishment of social facilities and the creation of employment have been given far more attention by the various governments of Transkei. Unfortunately, these activities have been concentrated in the urban areas which emerged during the period of colonial rule. An examination of the government's pattern of expenditure before and after independence will tend to support this assertion.

Table 4.3 presents a functional classification of expenditure by government institutions in Transkei for the period 1973/74, 1974/75 and 1975/76. Table 4.4 on the other hand presents a summary of budgeted expenditure of the various government departments according to development programme for the three year period : 1982/83, 1983/84 and 1984/85. Finally Table 4.5 presents an economic classification of government expenditure for the three year period : 1982/83, 1983/84 and 1984/85.

Table 4.3: Functional Classification of Expenditure by Government Institutions - 1973/74 - 1975/76 (R000s).

Development Programme	Government		Institution	
	Dept of Bantu Administration & Development	Government S.A. of Transkei	Xhosa Development Corporation	Bantu Mining Corporation
1973/74				
Land				
Planning & Conservation	-	971	9	-
Population Settlement	-	217	4580	-
Employment & Income Creation	-	12385	-	7529
Development of Human Potential	-	14219	40	-
Provision of Social Services	-	16996	3	-
Government Planning and Administration	-	4343	-	-
Infrastructure Creation	-	6849	229	1406
Miscellaneous	2985	-	-	-
1974/75				
Land				
Planning & Conservation	-	1704	46	-
Population Settlement	-	245	5811	230
Employment & Income Creation	-	11733	-	14106
Development of Human Potential	-	23241	-	-
Provision of Social Services	-	22316	15	-
Government Planning and Administration	-	8114	333	-
Infrastructure Creation	-	8295	643	3113

Miscellaneous	2641	-	-	-	-

1975/76					
Land					
Planning & Conservation	-	1498	-	-	-
Population Settlement	-	174	10731	300	-
Employment & Income Creation	-	13724	-	22095	235
Development of Human Potential	-	23882	-	-	-
Provision of Social Services	-	27802	-	-	-
Government Planning and Administration	-	11510	20	-	-
Infrastructure Creation	-	9211	1121	3593	-
Miscellaneous	3361	-	-	-	-

Source: Benbo, 1976.

While the first table reveals that the major growth in government expenditure has been in the areas of infrastructural creation, employment and income creation and the provision of social services, the second table reveals that most of the expenditure has been incurred on government planning and administration. Table 4.4 in fact reveals that as at the end of 1985 nearly 40% of government expenditure has been devoted to administration. The third table however indicates that besides remuneration most expenditure has been in the area of construction on especially new buildings (including residential buildings) and on transfers to local governments, universities and training colleges. All the government offices and residential units have however been constructed in only the urban areas. Local government grants also go to the development of the

Table 4.4 ; Transkei: Budgeted expenditure according to development programme by government department; 1982/83 and 1984/85

Programme/Department	1982/83		1984/85	
	R'000	%	R'000	%
Land Planning and Conservation	8 470	1,4	13 100	1,5
Agriculture and Forestry	8 912	1,1	11 337	1,3
Local Government and Land Tenure	1 391	0,3	1 638	0,2
Works and Energy	187	*	213	*
Employment Creation and Income Generation	30 083	5,1	44 478	5,0
Agriculture and Forestry	30 856	5,1	44 489	5,0
Commerce, Industry and Tourism	4	*	8	*
Works and Energy	24	*	1	*
Development of Human Potential	133 005	21,7	221 900	24,8
Agriculture and Forestry	3	*	-	-
Defence	3 325	0,5	7 890	0,9
Education	125 417	20,5	197 927	22,1
Health	3	*	-	-
Commerce, Industry and Tourism	5	*	10	*
Public Service Commission	82	*	311	*
Works and Energy	3 544	0,6	15 748	1,6
Sport, Welfare and Cultural Affairs 2)	606	0,1	-	-
Provision of Social Services	124 099	20,3	196 131	21,0
Agriculture and Forestry	1	*	-	-
Education	1 315	0,2	-	-
Health	66 795	10,9	108 993	12,2
Interior and Social Services 3)	52 196	0,5	-	-
Commerce and Industry	-	-	14	*
Works and Energy	2 183	0,4	3 846	0,4
Sport, Welfare and Cultural Affairs 2)	1 608	0,3	83 278	9,3
Government Planning and Administration	254 029	41,6	350 130	39,0
Prime Minister	7 747	1,3	7 564	0,8
Auditor-General	793	0,1	1 509	0,2
Defence	6 001	1,1	11 273	1,3
Education	115	*	-	-
Finance	94 580	15,5	51 002	5,7
Foreign Affairs and Information	2 219	0,4	5 291	0,6
Health	2	*	-	-
Interior and Social Services 3)	21 936	3,6	8 640	0,9
Justice	3 471	0,6	12 426	1,4
Local Government and Land Tenure	2 490	0,4	4 318	0,5
Commerce, Industry and Tourism	63 317	10,4	103 055	11,5
Police	17 753	2,9	29 150	3,3
Posts and Telecommunications	9 278	1,5	17 844	2,0
Prisons	7 420	1,2	14 212	1,6
Public Service Commission	772	0,1	1 350	0,2
Transport	13 253	2,2	18 193	2,0
Works and Energy	1 818	0,3	28 562	3,2
Sport, Welfare and Cultural Affairs 2)	256	*	41 687	4,6
Creation of Infrastructure	60 797	9,9	82 332	7,0
Agriculture and Forestry	6 095	1,0	5 179	0,6
Health	3	0,0	-	-
Works and Energy	54 699	8,9	57 153	6,4

Source: DBSA, 1987

TABLE 4.5 : Transkei: Economic classification of the expenditure of the Central Government
1982/83 - 1984/85

Classification of items	1982/83	1983/84	1984/85
	R'000	R'000	R'000
Current expenditure	329 349	373 840	560 316
Remuneration of employees	224 266	254 917	413 365
Salaries and wages	206 520	236 839	372 504
Employers contribution to insurance and pension funds	17 526	18 078	40 861
Military construction and equipment	1 000	5 697	2 285
Other goods and services	103 494	113 026	144 666
Postal, telegraph and telephone	299	1 454	1 645
Printing, stationery, advertisements and publications	2 229	3 273	2 769
Subsistence and transport	12 956	16 863	18 506
Other	87 413	91 436	121 746
Capital expenditure	52 608	64 339	84 763
New building and construction	42 504	55 236	71 199
Residential buildings	1 582	2 753	22 535
Non-residential buildings	9 026	17 063	26 932
Other constructions	31 896	35 420	21 732
New machinery and equipment	7 350	7 644	10 332
Other goods of a capital nature	2 754	1 459	3 232
Payments of interest	21 488	22 336	33 911
Transfer payments	69 733	98 193	103 357
Direct subsidy payments	6 244	4 428	2 131
Transfers to households	52 625	80 076	84 383
Transfers to universities and colleges	10 723	13 419	16 197
Transfers to local government	141	270	656
Direct loans, advances and share capital	61 643	77 295	100 092
Repayment of loans and advances	69 236	32 680	9 823
Total	603 577	668 493	892 262

SOURCE: D.B.S.A, 1987

urban areas. The three tables therefore reveal that percentage increases have consistently made government, administration and the provision of infrastructure in the form of office and residential accommodation, electricity, gas and postal services the major areas of government expenditure. Since these functions have been concentrated in the urban areas it can be deduced that the percentage of expenditure incurred in the inherited urban areas have been far more than on the rural areas. In conclusion it is accepted that the spatial concentration of expenditure in the urban areas has meant that rural economic activities are provided with very little stimulus within which to grow.

The increased expenditure on administration has also led to an increase in the employment of people by the central government and in consequence an increase in the urban population. Table 4.6 summarises the employment figures of various government departments from 1981 to 1985. It shows that consistently employment in urban based administrative functions such as Justice, Finance, and Foreign Affairs and Information has increased every year while rural based administrative activities such as agriculture and forestry has shown a decline in the recruitment of people.

The resultant effects of the concentration of expenditure in the urban areas has been a decline of rural activities to the Gross Domestic Product of Transkei. The GDP represents the value of all final goods and services produced within the borders of a country during a certain

TABLE 4.6 : EMPLOYMENT BY GOVERNMENT DEPARTMENTS - 1981-85

Department	Employment			
	1981/82	1982/83	1983/84	1984/85
Prime Minister	45	45	51	57
Agriculture and Forestry	6 252	6 351	11 607	11 247
Auditor-General	77	70	75	85
Defence	1 195	1 400	1 824	1 634
Education : Total	18 420	19 044	19 023	21 000
- Teaching staff	17 175	17 775	18 330	19 576
- Other	1 245	1 269	1 463	1 484
Finance	212	254	205	291
Foreign Affairs and Information	107	179	176	200
Health	10 472	11 759	13 104	13 717
Interior	829	806	154	254
Justice	332	455	1 007	1 027
Local Government and Land Tenure	264	276	313	299
Commerce, Industry and Tourism	118	145	144	206
Police	2 117	2 136	2 214	2 251
Posts and Telecommunications	1 244	1 209	1 310	1 065
Prisons	1 030	1 250	1 290	1 344
Public Services Commission	71	76	74	87
Transport	335	464	406	509
Works and Energy	7 252	6 807	7 593	7 050
Welfare and Pensions	100	110	125	142
Total	50 994	53 030	61 423	63 367

Source: DBSA, 1987

period, usually a year (Benbo, 1976, p. 65). In terms of income, it represents the remuneration received by the various factors for their participation in the economy. The GDP may be affected by population increases, a rise in prices as reflected in the consumer price index and an expansion in the economy occasioned by increased expenditure by especially the government (DBSA, 1987, p. 6-49). In the Transkei increased expenditure by the government has been the major factor inducing further growth in the GDP (Benbo, 1976, p. 65).

Table 4.7 summarises the contribution of the various sectors to the Gross Domestic Product (GDP) from 1959/60 to 1970 while Table 4.8 presents the figures for the period from 1981 - 1985.

The Tables indicates that progressively the contribution of rural economic activities such as agriculture, hunting and fishing to the Gross Domestic Product had fallen from 50,6% to less than 20%. The bulk of this fall has benefited manufacturing, electricity, gas and water construction, and to public administration. Table 4.9 gives further clarity to the situation by summarising the annual growth of sectoral contributions towards the GDP from 1970 to 1985. From these tables it can be concluded that urban economic activities have, since independence, become the major focus of government's attention. By concentrating economic activities in the urban areas there has been a perpetuation of the inherited colonial spatial structure over time.

TABLE 4.7 TRANSKEI'S GROSS DOMESTIC PRODUCT ACCORDING TO ECONOMIC ACTIVITY - 1960-1970

ECONOMIC ACTIVITY	1959/60		1960/61		1965/66		1969/70	
	R'000	%	R'000	%	R'000	%	R'000	%
Agriculture, Hunting, Forestry and Fishing	18 729	50.6	22 634	52.6	22 993	43.4	31 648	37.5
Mining and Quarrying	-	-	-	-	-	-	13	0.0
Manufacturing, Electricity, Gas, Water, and Construction	2 558	6.9	3 314	7.7	3 300	6.2	11 504	13.6
Wholesale and Retail Trade, Catering and Accommodation	5 048	13.6	5 736	13.3	9 190	17.3	12 486	14.8
Transport, Storage and Communication	963	2.6	1 032	2.4	1 948	3.7	4 457	5.3
Financial, Insurance, Real Estate and Business Services	1 457	3.9	1 556	3.6	2 032	3.8	4 581	5.4
Public Administration	3 006	8.1	3 322	7.7	6 349	12.0	8 709	10.3
Educational Services	3 447	9.3	3 500	8.1	4 297	8.1	6 404	7.5
Health Services	1 104	3.0	1 143	2.7	1 736	3.3	2 410	2.9
Other Marketable Services	726	2.0	792	1.9	1 178	2.2	2 316	2.7
Total	37 040	100	43 029	100	53 014		84 528	

Source: Benbo, 1976.

Other factors such as the demand for and granting of land for the consolidation of the country has added more urban areas to the country. The twenty six towns were increased to 28 by 1985 through the transfers of towns like Ezibeleni while at the same time the number of districts have been increased to twenty nine. Educational institutions were also built (eg University of Transkei), new housing estates were constructed and licenses were issued for the

TABLE 4.8 : SECTORIAL CONTRIBUTIONS TO THE GROSS DOMESTIC PRODUCT
1981 - 1985

Economic sector	1981		1982		1983		1984		1985		
	R'000	%	R'000	%	R'000	%	R'000	%	R'000	%	
Agriculture, hunting, forestry and fishing:	147 076	21,4	168 277	19,9	156 172	13,5	234 294	10,3	265 000	12,2	
Market sector	14 482	3,1	41 908	6,7	18 410	2,7	28 716	3,3	32 000	3,1	
Non-market sector	133 394	61,9	126 369	56,5	107 742	44,7	205 568	56,0	233 000	53,3	
Mining and quarrying:	123	-	262	-	945	0,1	945	0,1	1 050	0,1	
Market sector	123	-	262	-	945	0,1	945	0,1	1 050	0,1	
Non-market sector	-	-	-	-	-	-	-	-	-	-	
Manufacturing:	73 041	10,6	110 112	13,0	16 761	9,2	101 546	7,9	101 700	7,0	
Market sector	63 081	13,3	99 983	16,1	78 245	11,3	92 232	10,1	90 000	8,8	
Non-market sector	9 959	4,6	10 129	4,5	7 516	3,1	9 313	2,5	11 700	2,7	
Electricity, gas and water:	53 756	7,8	64 630	7,6	33 440	10,0	115 416	9,0	146 200	10,0	
Market sector	2 145	0,5	2 660	0,4	4 183	0,6	4 767	0,5	5 200	0,5	
Non-market sector	51 611	23,9	61 970	27,7	69 355	37,0	116 649	30,2	140 000	32,0	
Construction:	21 292	3,1	32 744	3,9	63 715	6,6	71 495	5,6	93 900	6,2	
Market sector	10 360	2,2	20 040	3,2	45 707	6,6	51 769	5,7	66 000	6,5	
Non-market sector	10 932	5,1	12 704	5,7	18 008	7,5	19 666	5,4	24 900	5,7	
Trade, catering and accommodation:	141 147	20,5	147 279	17,4	164 258	17,6	206 630	16,1	240 000	16,5	
Market sector	141 147	29,7	147 279	23,7	164 258	23,8	206 630	22,6	240 000	23,5	
Non-market sector	-	-	-	-	-	-	-	-	-	-	
Transport, storage and communication:	19 751	2,9	21 602	2,6	27 254	2,9	41 148	3,2	43 000	2,9	
Market sector	19 751	4,2	21 602	3,5	27 254	3,8	41 148	4,5	43 000	4,2	
Non-market sector	-	-	-	-	-	-	-	-	-	-	
Financing, insurance, real estate and business services:	34 170	5,0	42 137	5,0	53 908	5,8	69 120	5,4	80 600	5,5	
Market sector	24 513	5,2	29 756	4,8	35 350	5,1	47 375	5,2	53 000	5,2	
Non-market sector	9 657	4,5	12 381	5,5	18 558	7,7	21 745	5,9	27 600	6,3	
Community, social and personal services:	198 840	28,0	250 840	30,6	315 985	33,9	442 540	34,5	490 000	33,7	
Market sector	198 840	41,5	250 840	41,6	315 985	45,8	442 540	48,3	490 000	48,1	
Non-market sector	-	-	-	-	-	-	-	-	-	-	
Total	R'000	690 000	100	845 529	100	931 486	100	1 263 071	100	1 456 250	100
	%	100		100		100		100		100	
Market sector	R'000	474 450	100	622 426	100	650 365	100	916 122	100	1 021 050	100
	%	68,8		73,6		74,1		71,4		70,0	
Non-market sector	R'000	215 550	100	223 553	100	241 121	100	366 949	100	437 200	100
	%	31,2		26,4		25,9		28,6		30,0	

SOURCE: D.B.S.A, 1987

TABLE 4.9 : ANNUAL GROWTH OF SECTORAL CONTRIBUTIONS TO THE G
- 1970 - 1985

Economic sector	Percentage average annual growth rate increase/[decrease]		
	1970-1975	1975-1980	1980-1985
Agriculture, hunting, forestry and fishing:	27,0	6,4	16,3
Market sector	37,0	0,1	23,6
Non-market sector	25,9	7,2	15,5
Mining and quarrying:			
Market sector	11,0	10,3	37,7
Manufacturing:	13,8	21,9	15,6
Market sector	21,5	41,4	17,7
Non-market sector	10,2	[3,4]	4,4
Electricity, gas and water:			
Market sector	37,9	18,2	25,6 26,5
Construction:	17,6	18,3	38,0
Market sector	24,7	16,0	40,9
Non-market sector	6,2	23,6	31,9
Trade, catering and accommodation:			
Market sector	6,0	46,1	12,3
Transport, storage and communication:			
Market sector	9,6	16,2	20,3
Financing, insurance, real estate and business services :	13,9	19,2	26,4
Market sector	18,5	20,7	23,2
Non-market sector	6,2	15,1	34,3
Community, social and personal services:			
Market sector	19,3	23,7	25,9
Total:	19,2	22,0	20,7
Market sector	17,3	27,9	21,2
Non-market sector	21,7	13,1	19,6

SOURCE: D.B.S.A, 1987

establishment of commercial enterprises mainly in the urban centres. In the case of the latter for example Table 4.10 compares the number of licences granted for commercial activities per population in 1980 (that is four years after independence) in rural and in urban areas.

Table 4.10: The Relationship Between Rural and Urban Trade Licences - 1980

Total Licences	Rural Trade Licences	% Rural	Urban Trade Licences	% Urban	Ratio of Trade Licence To Population	
					Urban	Rural
5904	4674	67.7	2230	32.3	1:58	1:388

Sources: Department of Commerce, Industry and Tourism

The table indicates that while more licences may have been granted in the rural areas the ratio of trade licence to population is highly disproportionate being in favour of the urban areas. It implies that economic activities tend to be concentrated in the urban areas.

While no new towns have been built the existing ones and particularly Umtata and Butterworth have expanded rapidly since independence due to such activities by the government. The rural areas however have largely stagnated as little attention has been given to the development of these areas.

Characteristically, rural to urban migration has been on the ascendancy aided by the removal of legal restrictions to urban settlement and the expansion of urban economic activities. Table 4.11 summarises the urban population for 1970 and 1980 and the percentage increases that have occurred in the intercessal periods. From the

Table 4.11: URBAN POPULATION IN TRANSKEI 1970 - 1980

DISTRICT	1970	1980	AVERAGE ANNUAL RATE OF INCREASE (%) 1970 - 1980
BIZANA	1373	1398	0,2
CACADU	908	19076	30,4
CENTANE	246	460	6,3
COFIMVABA	826	1681	7,1
ENGCOBO	1539	2080	3,0
GATYANA	426	934	7,9
GCUWA	1761	27343	27,4
HERSCHEL	187	689	13,0
IDUTYWA	1995	2858	3,6
KWABHACA	2034	2763	3,1
LIBODE	333	773	8,4
LUSIKISIKI	886	1314	3,9
MATATIELE	-	490	-
MAXESIBENI	1135	1646	3,7
MT FLETCHER	894	1281	3,6
MQANDULI	300	667	8,0
NGQELENI	576	727	2,3
NQAMAKWE	314	589	6,3
QUMBU	454	1441	11,5
SIPHAQENI	518	1093	7,5
TABANKULU	574	1098	6,5
TSOLO	1456	2338	4,7
TSOMO	314	530	5,2
UMTATA	20564	42188	7,2
UMZIMKULU	2714	4827	5,8
UMZIMVUBU	1119	1856	5,1
XALANGA	4539	6660	3,8
XHORA	412	597	3,7

Source: IMDS Census Surveys, Transkei

table it can be concluded that large increases have occurred in the urban population between the two time periods. Thomas (1982) estimates that overall the urban population in Transkei increased by 144.6% between 1970 and 1980 (p. 19).

As at present, in Transkei, almost all manufacturing plants, infrastructural facilities such as treated water supply, electricity, and better network of roads and railways are found only in the urban centres. This concentration has tended in time to attract other economic activities to the urban centres. For instance, the concentration of economic development in the few urban centres in Transkei has brought about the expansion in employment opportunities and consequently, a viable market for the sale of produce in these centres. Hawkins (1982), in fact, notes that of the paid jobs in Transkei as at the end of 1982, 40% were in Umtata and Butterworth, followed by Lusikisiki with 7%, and Umzimkulu with 5%. Within the private sector - including domestic employment - Butterworth had 28% while Umtata had 22% of the paid jobs in Transkei as at the end of 1982 (Hawkins, 1982). Having attracted the major part of the paid employment, these centres also attract service industries, shops, and other economic activities simply because of the large disposable income that is available due to the presence of a large number of workers.

What this mean is that since independence rural Transkei "in line with the rural areas of other independent and non independent (black) rural

areas - is stagnating or even deteriorating in its quality of life as compared to urban Transkei ... " (Thomas, 1982, p. 1). Thus, instead of attaining a balanced spatial development, Transkei's space economy since independence has been characterised by increasing divergence in economic development among the various regions.

The pattern outlined above implies that the models of Myrdal, Piori, Slater and Mabogunje, present useful frameworks within which to view the evolution of the space economy of Transkei. However, it is also implicit in these models that the pattern of continued divergence in development of the spatial units is dependent on the continued operation of free market forces. The process can therefore be re-adjusted if a change is desired.

An attempt is made in the following analysis to expose the present pattern of over-concentration of economic development in certain regions of Transkei in terms of selected indices.

4.4 Percentage Concentration of Selected Indices in Different Regions in Transkei

The percentage concentration of selected indices for the twenty nine districts of Transkei are presented in Tables 4.12 and 4.13 below.

Table 4.12 : Percentage Distribution of Eight Selected Indices in the Various Districts of Transkei

DISTRICTS	Modern Industries	Post Offices	Building Societies &	
			Banks	Hotels
Bizana	0	4.35	2.08	3.57
Cacadu	14.71	1.45	2.08	3.57
Centane	0	1.45	0	8.93
Cofimvaba	0	5.80	4.17	5.36
Engcobo	0	4.35	4.17	3.57
Gatyana	0	1.45	0	3.57
Gcuwa	50.98	4.35	8.33	5.36
Herschel	0	7.25	4.17	1.79
Idutywa	0	4.35	2.08	3.57
Kwabhaca	0	5.80	6.25	3.57
Libode	0	2.90	6.25	1.79
Lusikisiki	1.96	2.90	4.17	1.79
Matatiele	0	1.45	0	1.79
Maxesibeni	0	1.45	0	1.79
Mt. Fletcher	0	5.80	2.08	1.79
Mqanduli	0	1.45	6.25	1.79
Ngqeleni	0	1.45	6.25	3.57
Nqamakwe	0	2.90	2.08	1.79
Qumbu	0	4.35	6.25	1.79
Siphageni	0	4.35	4.17	1.79
Tabankulu	0.98	1.45	2.08	1.79
Tsolo	0	2.90	6.25	1.79
Tsomo	0	2.90	0	1.79
Umtata	28.43	13.04	10.43	14.29
Umzimkulu	1.96	2.90	0	1.79
Umzimvubu	0	4.35	2.08	5.36
Xalanga	0.98	1.45	2.08	3.57
Xhora	0	1.45	6.25	7.14
TOTAL	100	100	100	100

Table 4.12 (Continued)

<u>DISTRICTS</u>	<u>Police Station</u>	<u>Courts</u>	<u>Hospitals</u>	<u>Educational Institutions</u>
Bizana	4.08	4.88	6.06	4.36
Cacadu	4.08	4.88	6.06	5.42
Centane	2.04	2.44	3.03	3.22
Cofimvaba	6.12	2.44	3.03	3.50
Engcobo	4.08	2.44	6.06	4.55
Gatyana	4.08	2.44	0	3.96
Gcuwa	6.12	4.88	3.03	2.72
Herschel	6.12	2.44	6.06	3.25
Idutywa	2.04	2.44	0	3.16
Kwabhaca	2.04	4.88	6.06	4.73
Libode	2.04	2.44	3.03	3.78
Lusikisiki	2.04	4.88	6.06	4.80
Matatiele	4.08	4.88	0	3.68
Maxesibeni	6.12	2.44	3.03	2.54
Mt. Fletcher	4.08	2.44	3.03	3.68
Mqanduli	2.04	2.44	3.03	3.09
Ngqeleni	2.04	2.44	3.03	3.81
Nqamakwe	2.04	2.44	3.03	3.65
Qumbu	2.04	4.88	3.03	3.78
Siphqeni	4.08	2.44	3.03	2.91
Tabankulu	4.08	2.44	3.03	3.09
Tsolo	2.04	2.44	3.03	3.93
Tsomo	2.04	2.44	0	2.79
Umtata	6.12	14.63	6.06	4.80
Umzimkulu	8.20	4.88	9.10	4.64
Umzimvubu	2.04	2.44	3.03	1.92
Xalanga	2.04	2.44	3.03	1.76
Xhora	2.04	2.44	3.03	2.51

TOTAL	100	100	100	100

Source: Field Survey, 1988

When the indices are taken as a group the percentage concentration resulting therefrom appear as Table 4.13 below.

Table 4.13: Percentage Concentration of Eight Indices in the Various Districts of Transkei.

<u>DISTRICT</u>	<u>PERCENTAGE CONCENTRATION</u>
Umtata	6.96
Gcuwa	6.04
Cacadu	5.07
Lusikisiki	4.46
Kwabhaca	4.46
Umzimkhulu	4.44
Engcobo	4.27
Bizana	4.10
Tsolo	3.56
Cofimvaba	3.53
Qumbu	3.53
Nggeleni	3.51
Libode	3.49
Gatyana	3.46
Mt Fletcher	3.41
Herschel	3.34
Nqamakwe	3.27
Matatiele	3.24
Centane	3.05
Idutywa	2.93
Tabankulu	2.88
Mqanduli	2.85
Siphageni	2.83
Xhora	2.56
Tsomo	2.46
Maxesibeni	2.36
Umzimvubu	2.10
Xalanga	1.85

Total	100

Source: Field Survey, 1988

On the basis of the percentage share, the above table ranks Transkei's districts in terms of their level of economic development. The ranking is also produced as map 4.3.

4.4.1 Interpretation of the Results

The results presented above indicate extreme disparities in the levels of concentration of the economic development among the various districts of Transkei. It reveals that while the distribution of some

variables like modern industries are highly localised, being found in only seven of the twenty nine districts, the bulk of it (nearly 85%) is located in only three districts (Butterworth, Umtata and Cacadu). However, a few indices like educational institutions are found in every district but even then some districts have more than others. Taken as a group the percentage share of the indices reveal that Umtata district has the greatest concentration of the selected indices.

An examination of the sizes of the various districts however reveal the fact that the districts with the greatest concentration of the indices are not necessarily the districts with the largest surface area. Butterworth district better illustrates this situation. The district has the second greatest concentration of the economic development indices. The district also has more than 50% of the industrial plants in Transkei. Due to the particular advantages that industrial development brings to a region (as noted in chapter three) this is particularly important for the further growth of that region. In terms of size however Butterworth district is the smallest besides Tsomo district in the country. Indeed the combined percentage share shows that 5.7% of the land area of Transkei (comprising two districts: Umtata and Butterworth) have more than 10% of all the available indices. This therefore helps to confirm the view that marked regional inequalities are characteristic of the economic development effort in Transkei. From these analyses one can conclude that Transkei's districts have not benefitted equally from the gains

of the country's economic development effort.

4.5 Rural - Urban Inequalities

To test the proposition that inequalities in economic development exist between rural and urban areas, similar methods are employed. For all districts the percentage share of the indices for the urban areas and those for the rural areas are worked out and is presented in Table 4.14 below. To portray a better picture of the situation educational institutions (which are basically rural) is not included as its inclusion would have distorted the picture. Instead electricity and treated water supply is included. For each, one point is awarded where it is available and no point where it is not.

4.5.1 Interpretation of the Results

The above results indicate that the concentration of economic development indices occur mostly in the urban areas. This can be ascertained from the fact that variables such as banks and building societies, treated water supply, electricity, courts, and modern industries are almost exclusively found in the urban areas. The only exception to this assertion being educational institutions, the majority of which is found in the rural areas. The table reveal that in the majority of districts the urban area has more than half of the number of indices. From the table the conclusion can be drawn that most of the indices identified in the earlier analysis of district patterns are located in the urban areas. From the percentage share analyses it is noted for instance that of all the indices that are located in Umtata and Butterworth districts (the two districts with

the greatest concentrations of the indices) 76% and 94% respectively are located in the urban areas. The table thus illustrates the differences between urban and rural levels of economic development. From the table it is reasonable to conclude that the disparity between rural and urban areas is more in some districts than in others. Gcuwa, Cacadu, Bizana, Libode, Mqanduli, Matatiele, Xalanga and Nqamakwe districts stand out as the districts with the largest disparity in economic development between rural and urban areas.

Table 4.14 : Measures of the Concentration of Economic Development in Rural and Urban areas of Transkei.

DISTRICTS	PERCENTAGE CONCENTRATION	
	RURAL	URBAN
Bizana	35.71	64.29
Cacadu	17.86	82.14
Cofimvaba	43.75	56.25
Xhora	50.00	50.00
Engcobo	38.46	61.52
Siphageni	33.33	66.67
Gcuwa	5.71	94.29
Herschel	38.89	61.11
Idutywa	30.00	70.00
Centani	54.55	45.46
Libode	18.18	81.82
Lusikisiki	35.71	64.29
Matatiele	12.5	87.5
Mqanduli	22.22	77.78
Maxesibeni	37.5	62.5
Mt. Flether	45.46	54.55
Kwabhaca	31.25	68.75
Nggeleni	27.27	72.73
Nqamakwe	22.22	77.78
Umzimvubu	41.67	58.33
Qumbu	41.67	58.33
Tabankulu	30.00	70.00
Tsolo	30.00	70.00
Tsomo	33.33	66.67
Umtata	23.53	76.47
Umzimkulu	43.75	56.25
Gatyana	37.5	62.5
Xalanga	10.00	90.00

Field Survey, 1988.

In these districts the urban areas have often 80% or more of all the available indices. On the other hand, the districts of Cofimvaba, Xhora, Centani, and Mt Fletcher, have the lowest disparity in the level of concentration of the selected indices. From this analysis, it seems reasonable to conclude that some rural areas are better developed economically than others just as some urban areas are better developed than others.

In spite of the wide disparities in economic development between rural and urban areas it is noted that all urban areas are smaller in terms of size than the rural areas. The population figures as provided in the 1985 census also indicate that none of the urban areas has more people than the rural areas. In most cases, the rural areas contain over 75% of the population. This pattern of development is typical of most underdeveloped countries and has been pointed out in several studies (Johnston and Whitelaw, 1974; Makav and Somerset, 1978; Mabogunje, 1980; Knowles and Anker, 1981).

4.6 Comparison of the Inequalities Between the two Regions

At this stage it is found necessary to compare the inequalities between the two selected regions : viz the various districts and that between the rural and urban areas. This will help to test the first hypothesis (chapter two) that the inequalities between rural and urban areas are the most evident form of regional inequalities in economic development in Transkei. The comparison is accomplished by examining the difference in the percentage share of the indices.

Generally, the larger the difference in the percentage share the greater the disparity in the levels of activity between the regions being compared.

An examination of Tables 4.13 and 4.14 reveals that the differences in the percentage share of the indices is wider between urban and rural areas than between the various districts. Indeed it is in only one case (industries) is one district having more than 50% of the available indices. On the other hand this is typical in the differences between rural and urban areas. From this therefore the conclusion can be drawn that there is considerably more spatial inequalities in development between towns and rural areas of Transkei. The hypotheses that spatial inequalities have accompanied the development effort of Transkei is therefore proved through these techniques. It is also noted that the inequalities are far more evident between rural and urban areas than it is between the various districts.

This finding has been noted as the major difference in the patterns of development between developed countries and the developing ones (Mabogunje, 1980). In contrasting the pattern of development in the developed countries with those of the developing countries for example, El-Sharkhs found that while there is a negative correlation between primacy values and level of development among developing countries, there is a significant positive correlation in the case of the developing countries (Salah El-Sharkhs, 1972, p. 11-36). The

cause for this particular developmental pattern in Transkei is attributed to government spending priorities particularly after independence. The small sizes of the urban areas in relation to the rural areas implies that this pattern of development does not produce equity in the spatial distribution of the gains from the economic development effort.

The combination of the three regional analysis presented above indicate that most economic development indices in Transkei are concentrated in the urban areas. The scale of concentration is however not the same. It is therefore possible from the analysis to rank the spatial structure in terms of the concentration of economic development indices located in them. These will then be recognised as the major centres or surfaces of economic activity in Transkei.

4.7 The Major Surfaces of the Space economy

A surface may be described as "... spatial patterns as displayed in population distribution, land use, economic activity, urban spheres of influence" (Fair, et al., 1969, p. 6). Surfaces arise from the fact that economic activities are arranged in density patterns connected by functional linkages which together form a complex but recognisable spatial pattern (Friedmann, 1966, p. 40). The means of recognition is to identify common problems they pose for economic development (Friedmann, 1966, p. 41-44).

In Transkei the spatial surfaces that pose different problems for economic development can be identified as :

4.7.1 Core Regions

As identified from the analysis above these are basically the urban centres. However, there are wide differences between them. The urban centres of Umtata and Butterworth with nearly 20% of all the indices represent the inner core. The two areas are characterised by high economic growth rates : Umtata because of the increase in government administration and Butterworth because of the large number of industries. As a result of the concentration and the subsequent growth in population the supply of urban facilities like housing, roads, electricity and so on are unable to keep pace with the general increase in population. The areas are therefore characterised by large squatter settlements which though unplanned are part of the functional area of the core regions. Daily commuting between the two centres is more than between the centres and other areas of the country.

Outside the inner core are a small number of urban centres recognised as the outer cores. These areas are Ezibeleni, Lusikisiki, Idutywa, Engcobo, Bizana and Mount Frere. They exist as inner peripheral zones to the inner cores and are in daily contact with the core areas. They are relatively small settlements but are characterised by rapid population growth. Due to their being devoid of any particular

function, economic growth in them is relatively small. However a substantial number of economic activities may be found in them. Apart from Lusikisiki all these towns are situated on major tarred roads.

Beyond the inner periphery are the rest of the urban centres. These are termed the intermediate peripheries. They are small, and the scale and variety of economic activities are low. Often these areas have neither electricity nor medical facilities. They however, maintain regular contact with the core areas but the scale of such contacts is very small.

4.7.2 The Outer Periphery

This embraces the rest of the country and consists of mainly rural enclaves. These rural areas are characterised by largely dispersed settlements and a stagnant economy. Very little economic activity takes place in them except for small rural shops and subsistence agriculture. Migration from such areas is very high.

4.8 Implications Of the Inequalities

The spatial inequalities in economic development as exemplified in the above analysis have two major implications for (1) the individual and (2) for regional development. To the individual his needs and his ability to satisfy them is governed by the position of his region or town on the scale of economically developed regions. When living in a highly developed area, "... one's wants and livelihood will reflect the opportunities available in a community commanding economic wealth,

power, influence, able to buy technical knowledge and utilize the fruits of innovation for the few or the many and serviced by its infrastructure of trade, finance, marketing, public investments, housing and so on" (Coates et al., 1977, p. 81). The urban centre offers a relatively high wage economy, a great variety of jobs, a high level of job security as well as social infrastructure geared to meet the basic needs of health, education and social security benefits. These help one to achieve a high standard of living.

In Transkei a wide disparity has already emerged in incomes between the rural agricultural sector and the modern urban sector. This disparity has been helped by Government enactments providing for minimum wage and salary adjustments for government workers most of whom are resident in the urban centres. Table 4.15 below indicates the large disparity in income between the rural residents and their urban counterparts.

The table confirms the views of Thomas (1982) that "...for the bulk of the rural Transkeians the income gap vis-a-vis the urban elite has widened" (Thomas, 1982; p. 83). The income inequalities mean that many rural dwellers are unable to afford a high standard of living as compared to the urban residents as level of income is positively correlated to one's standard of living (Stavig, 1969).

Table 4.15

Income Distribution - Urban, Rural, Total 1982

Rands P.A.Per Household	Urban		Rural		Total	
	%	Cum %	%	Cum %	%	Cum %
1 -200	2,69	2,69	6,75	6,75	5,68	5,68
201 -400	1,95	4,64	10,11	16,86	7,95	13,63
401 -600	1,47	6,11	10,15	27,01	7,85	21,48
601 -800	3,67	9,78	14,53	41,54	11,64	33,12
801-1000	2,69	12,47	8,57	50,11	7,01	40,13
1001-1500	5,50	17,97	13,16	63,27	11,13	51,26
1502-2000	2,93	20,90	6,67	69,94	5,68	56,94
2001-3000	12,47	33,37	6,93	76,87	8,40	65,34
3001-4000	19,09	52,46	6,45	83,32	9,79	75,13
4001-5000	12,10	64,56	5,69	89,01	7,40	82,53
5001-7500	14,79	79,35	5,30	94,31	7,82	90,35
7501-10000	8,68	88,03	2,69	89,00	4,28	94,63
10001-15000	6,11	94,14	2,12	99,12	3,18	97,81
15001-20 000	2,44	96,58	0,44	99,56	0,97	98,78
+ 20001	3,42	100,00	0,44	100,00	1,22	100,00
Gini Index	0,456		0,537		0, 580	

Source: IMDS Income and Expenditure Survey, 1982.

It is also reasonable to conclude that in the future regional development in Transkei will be characterised by increased levels of inequalities. The linkages between processes and patterns according to Myrdal (1957) imply that existing trends can only continue to reinforce the emerging situation. In the course of time therefore, regions like Umtata and Butterworth, due to their initial advantaged position, have continued to grow at much faster rates than the other regions.

The developments described above explain why regional inequalities in development continue with time at various regional scales (Chapman, 1979, p. 15). To Abler, Adams and Gould, therefore, "spatial

structure and spatial processes are circularly causal ... structure is a determinant of process as much as process is a determinant of structure (1971, p. 60).

Conclusion

The analysis presented in this chapter enables the conclusion to be drawn that as at present, the patterns of economic activity in Transkei are organised in a number of highly intensive and spatially restricted core areas. These are set within a vast area encompassing the greater part of the land area of Transkei in which extremely low levels of activity are noted. These patterns reflect differences which emerged during colonial administration and which have been accelerated by government actions since independence. The process has led to the strengthening of the national core-periphery structure which emerged in the colonial era. The processes associated with circular and cumulative causation imply that these regional inequalities will be perpetuated in the years to come. In the expectation that "... the problems of economic disparity and imbalance between the different parts of Africa can be both formulated and attacked" (Green and Fair, 1962, p. 56) the spatial linkages and impacts generated by Butterworth, one of the core regions in Transkei, mainly due its dominance of the industrial structure of the space economy, constitutes the theme for the chapters that follow. Towards this end the next chapter traces the processes leading to its emergence as an urban industrial centre and its current socio-economic position.

CHAPTER FIVE

REGIONAL PLANNING STRATEGIES AND THE EMERGENCE OF BUTTERWORTH

5.1 Introduction

In the previous chapter, substantial variations in the levels of economic development were noted to have accompanied the development effort of Transkei. The principal cause of this pattern was attributed to government actions and the linkages that these tend to generate to spatial patterns. It is however of importance to demonstrate this in regional analysis by relating the spatial patterns in a region to particular processes. In this chapter a brief historical survey of the growth of Butterworth (the most industrialised of the core areas in Transkei) including its geographical and human resources before the policy of industrial decentralisation and the selection of growth points was instituted in Southern Africa is provided. The impact of the policy of industrial decentralisation and the subsequent emergence of Butterworth as a growth point is traced through Myrdal's (1957) circular and cumulative causation principle. Through the analysis it is hoped to test the hypothesis that the pattern of regional development planning in Transkei has led to the emergence of growth centres like Butterworth. This chapter will also help to illustrate the propulsive nature of manufacturing activities in helping to stimulate developments in a region. Attention is finally drawn to the current state of the socio-economic status of the town.

5.2 Geographical Location of Butterworth

Butterworth lies one hundred and twenty kilometres from Umtata on the national road (N2) from Durban to East London and is only thirty kilometres from the border between South Africa and Transkei. The town is also one hundred and ten kilometres to the harbour town of East London. It nestles in the valleys of the Gcuwa and Kei Rivers. There is a rail link from Butterworth to King William's Town and onward connections to Johannesburg, East London, Queenstown and other South African towns and cities. The railway line arrived in Butterworth in 1917. The municipal area of Butterworth currently covers an area of 1989 hectares. The town is linear in shape and sits astride both the national road (N2) and the railway line. Butterworth is today the second biggest town in Transkei after the country's capital of Umtata. The Transkei Government however envisages that Butterworth should by the year 2003 have a population of 250 000 which will by then make it the largest town in Transkei (White Paper on Development Priorities and Public Sector Spending 1983-1988, p. 18).

5.3 Historical Development of Butterworth

Butterworth was founded as the first mission station in Transkei by the Methodists in 1827. The core of the town at that time consisted of only the Methodist church and accommodation units for the missionary workers. The station was named Butterworth after the Hon. J. Butterworth, M.P. and the then treasurer of the Wesleyan Mission Society. The early days of the station were very precarious as

the station was razed three times by warriors. In 1890 the Lamplough Training Institution for girls was established at the station. This institution was named after the Rev. R. Lamplough, twice president of the S.A. Missionary Conference. From this humble start, the settlement grew with the establishment of commercial activities such as shops, and other ancillary services to serve both the missionary workers and the rural communities. Impetus to growth was provided when Butterworth was selected as the military headquarters of the British troops during the Kaffir wars of the 1870s and 1880s. The Drill Hall, now the town Hall was built in 1897 and the first municipal council meeting was held there on 30th May 1904.

5.4 Physical Features

Two major landforms dominate the scenery in the town: hills and valleys. The hills consist of ridges running in a north-west south-east direction. Among the hills Redhill, Tobotshana and Mzantsi are the most prominent. Much of these hills are underlain by rock formations belonging to the Karoo system (Wyk, 1968, p. 68). The system consists of sedimentary shale and sandstone layers on tillite substrata. The tillite is unstratified and is described as "massive bluish-grey sandstones carrying unsorted angular fragments and rounded boulders of glacial origin" (quoted from Du Toit, 1939, p. 1). The series of hills gives the surrounding land a rolling type of topography.

The influence of man on the topography of Butterworth has been considerable. This has been in the form of levelling of hills for construction projects, clearing of vegetation for fields and building sites and the sinking of concrete structures. These in turn have led to several ecological problems. These problems relate to the laying bare of the land for the agents of erosion to work on. Erosion by water and wind is therefore very strong as exemplified by the many deeply incised valleys found within the vicinity of the town.

Several rivers flow through the valleys but many of them join the Gcuwa river. The most important rivers dominating the drainage of Butterworth are the Tobotshana, Mchubakazi, Zazulwana and Tanga. The valleys of these rivers are susceptible to flooding which has occurred on a number of occasions. The last major flooding occurred in the low lying valleys in 1985 causing considerable amount of damage.

Due to its latitudinal position Butterworth enjoys a warm temperate climate. Average temperatures are around 20°C but vary greatly between summer and winter. Summers are hot while winters are cold and dry. An average rainfall of about 300mm per annum which occurs mainly in summer is received every year in Butterworth.

The natural vegetation around Butterworth consists of grassland of the veld type and bush scrub with scattered short trees found especially around the river valleys. In the summer the grass is green, lush

and quite suitable for animal grazing. In the winter, however, it becomes "sour, wiry and virtually ungrazable" (Mckenzie, 1982, p. 1). There are two forest plantations, one at Ibika and the other at the Mission location. These, apart from supplying wood, are intended to help in the conservation of soil water and the control of erosion.

Agriculture has been the traditional activity of the people. Both animal rearing and crop farming is practiced. Maize farming takes 16% of the agricultural land available (Transkei Profile, 1985). The farms are however small and are managed mostly on subsistence basis. Livestock farming is hampered by overstocking which increases the pressure on the land (Muller, 1984a gave a land pressure score of 4, the highest in Transkei, to the Butterworth District) leading to soil erosion and low survival rates for livestock (cattle deaths were estimated by Muller, (1984a) at 47,7%). Most of the animals reared are primarily for the status they convey to the owner and only secondarily as a source of food and income for the owner. Livestock is also important for many traditional activities such as the payment of the bride price at marriage or for sacrifices to ancestors on certain occasions. Wool however is cut twice a year for sale. Milk is also obtained from the animals for home consumption.

The population of the town and its environs as in most of Transkei is made up of mostly Xhosa-speaking people. The Xhosa-speakers are a sub-group of the Cape Nguni composed of the Xhosa, Mpondo, Tembu,

Mpondomise, Bomvana and Mfengu. The town has a modern library, and facilities for bowls, cricket, fishing, golf, hockey, rugby, and tennis. There is electricity supply in the town, modern sewerage works which has been expanded with the growth of the town's population and many commercial ventures. Postal and telephone facilities, treated water supply and a reasonably good network of streets also exist in the town.

Butterworth, however, has not much potential as a tourist resort and most people only pass through there to the sea or to the holiday resorts of Natal. There are also no minerals available within the vicinity of the town. It is clear that but for human created conditions very little economic stimulus for development was presented by the physical environment of Butterworth. The development of the town can be divided into two phases : phase one before 1970 and phase two after 1970. During phase one, the growth of the town was gradual and depended on the few advantages which the town enjoyed, such as being on a national road and having rail connections. Population growth was gradual due also in part to the racial restrictions to urban settlement that other urban areas in Transkei suffered from at that time. Table 5.1 summarises the population of Butterworth from 1896 to 1970.

Table 5.1: POPULATION GROWTH IN BUTTERWORTH - 1891-1970.

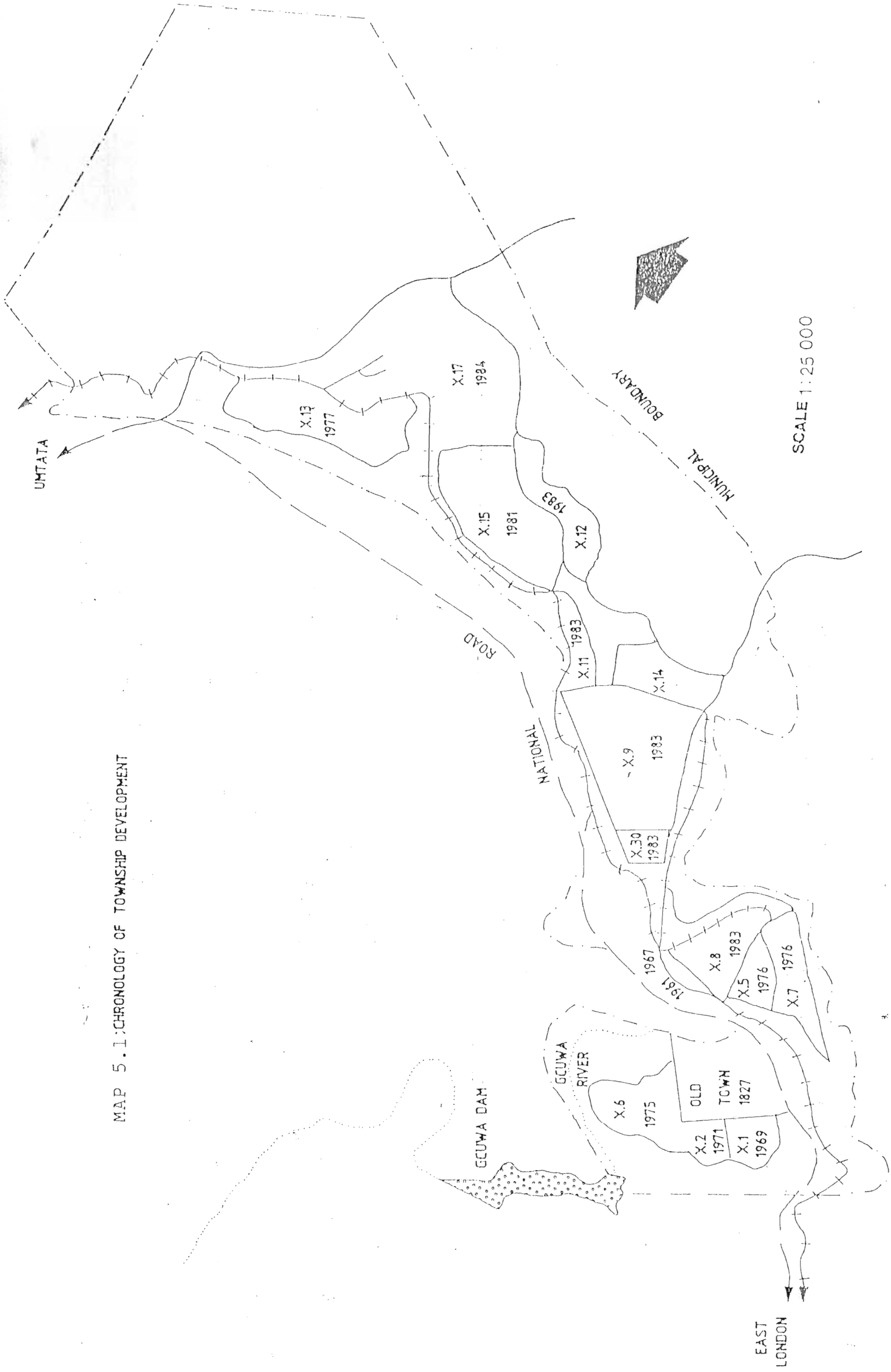
YEAR	POPULATION	ANNUAL GROWTH RATE %
1891	281	
1904	564	5.82
1911	899	5.82
1921	1050	1.55
1936	1285	1.35
1946	1542	1.82
1951	2131	5.39
1960	2358	1.12
1970	2769	1.61

IMDS Census Reports, Transkei.

From the table it can be concluded that Butterworth until recently was not a major urban centre in Transkei. As at the end of 1970 it was the fifth largest urban centre in Transkei with a population of 2769 (comprising 1030 males and 731 females). Of the total population 1761 were people of colour. As at that time too the town comprised only the town centre, Extensions 1,3,4,and 5 (map 5.1). Extensions 3 and 4 were developed for the coloured community during the pre-independence era of racially separated residential areas. The other areas were all designed for the high to medium income white population group. During this period the town had only one post office, police station, school, no industries, and only a few shops.

Between 1970 and the present day however the town of Butterworth has changed a great deal. This change has principally arisen as a result of the policy of industrial decentralisation and the selection of growth points pursued as the major regional development strategy embarked upon by the government of the Republic of South Africa and of Transkei. For a proper understanding of the factors responsible for

MAP 5.1: CHRONOLOGY OF TOWNSHIP DEVELOPMENT



Source: Municipal Files, Butterworth.

the second phase of the town's growth, there is a need to provide a brief survey of the regional development strategies pursued by Transkei. A proper understanding of the policy however can only emerge from an understanding of the evolution of the space economy in the Southern African region.

5.5 Spatial Economic Structure in Southern Africa

Historically, economic activities in Southern Africa (including Transkei) have been centred on four areas: the Western Cape/Cape Peninsula; Port Elizabeth/Uitenhage; Durban/Pinetown; and the Pretoria/Witwatersrand/Vereeniging(PWV) area. This concentration owes its origin to certain historico-political factors that accompanied the economic development of Southern Africa.

As the first European settlement in South Africa, Cape Town was the first to develop economic activities especially trade and the export of some farm produce. Through the establishment of port facilities and of a political and military presence Cape Town had by 1800 established itself as the economic core of the Southern African region.

With an increase in the European presence in Southern Africa there was a need for more land for farming and many of the new settlers moved further away from Cape Town. In particular sheep farmers found more suitable conditions north of Algoa Bay. The establishment of a military presence in Algoa Bay in 1790 offered many white farmers the

protection they needed to settle around the bay. In time, a need arose for a closer port than Cape Town to export wool to Europe and to import farmers requirements. This stimulated the development of Port Elizabeth as the second major centre of economic activity in the country.

The introduction of Sugar cane in Natal and the need to export the produce resulted in the development of trade and port facilities at Durban as an import and export centre for the Natal region (Wickens, 1983; p. 70). Durban with the passage of time developed other economic activities besides its sugar exporting business becoming the nation's third centre of economic activity. These developments however did not change the position of Cape Town as the regions leading economic centre.

These three coastal centres continued to attract further economic development due in part to the great distances between the settlements, the poor internal communications at that time, and the slow development of infrastructure, especially roads. However, the discovery of diamonds at Kimberley in 1867 and of gold mining on the Witwatersrand in 1886 brought new changes to these developments.

Gold mining on the Witwatersrand in particular, with its large labour intensive methods, generated large settlements creating markets for food, goods and services. By 1900, for instance, Johannesburg had the largest urban population in the whole region. The mines

generated forward and backward linkages that brought in many industries to the area. Regional economic activities became dominated by the demand for goods and services for the PWV region. Import and export trade also assumed greater ascendancy and the ports, especially Durban because of its nearness, benefited greatly from this trade (McCrystal, 1969, p. 53). The choice of Pretoria as the nation's capital after the Union in 1910, the location of steel plants at Pretoria and Vanderbijlpark, and Sasol at Sasolburg reinforced the economic position of the PWV.

In the course of time the four economic centres developed agglomeration economies in large markets, abundance of raw materials, technology and infrastructure which were favourable to industrial development. When industrial development commenced in Southern Africa, it was only natural therefore that these four economic centres should attract the most industries. The PWV region and its mining activities attracted a greater number of the industries than the other centres. The table below lists the total number of industries and their concentration in the four main centres for the period from 1916 to 1976.

Table 5.2: Industrial Growth and Concentration (Manufacturing Industries)

YEAR	TOTAL NO. INDUSTRIES	Location %					TOTAL MAIN INDUSTRIES	REST OF SOUTH AFRICA
		WEST CAPE	PORT ELIZABETH	PINETOWN DURBAN	PWV			
1916/17	5305	16,1	3,4	6,9	18,9	45,3	54,7	
1927/28	7360	16,4	3,1	6,6	25,1	51,2	48,8	
1933/34	8530	15,7	2,7	7,4	29,1	54,9	45,1	
1941/42	9989	15,2	3,0	8,8	29,0	56,0	44,0	
1945/46	11351	13,3	2,9	8,2	31,2	55,6	44,4	
1949/50	14809	13,3	4,0	8,0	33,0	58,3	41,7	
1956/57	12168	12,9	4,2	9,7	42,4	69,2	30,8	
1961/62	11803	15,0	4,0	10,0	41,3	70,3	29,7	
1963/64	11944	15,6	3,8	10,2	39,3	68,9	31,1	
1965/66	12727	16,0	3,6	10,7	43,7	74,0	26,0	
1967/68	13142	16,0	3,7	11,0	43,9	74,6	25,4	
1970	13121	16,1	3,7	11,4	44,0	75,2	24,8	
1972	12671	15,7	3,6	11,3	44,9	75,5	24,5	
1976	15461	14,8	5,4	11,4	45,1	76,7	23,3	

Source: Bureau of Census and Statistics, Statistics for fifty years. 1910-60(1961) for the years to 1956/57; and thereafter extracted from industrial statistics from relevant years' industrial censuses. (Quoted from Pretorius *et al.*, 1986).

The large concentration of industry in the PWV area however brought in its wake several problems which made it imperative that industry be extended to the other areas. In the first instance, the concentration of industry in a few areas brought about large increases in population to those areas principally as a result of migration. It is estimated for instance that, the white population in the PWV area alone increased by 296% from 1910-1959 while the Black population increased by 682% (Kotzenberg, 1973, p. 140). Large population increases also necessitated the spending of vast sums of money to provide suitable housing and other services, and to clean-up the appalling slum conditions created as a result of the large population increases.

Vast sums of money were also needed for transport facilities for these areas, and a severe strain was being put periodically on the available water resources.

Secondly, and perhaps more importantly, heavy social costs resulting from the dislocation of communal and family ties as a result of migration were becoming unbearable. In the words of the Viljoen Commission "the effect of massing of large numbers of people who are inadequately housed and fed, whose social and family life are disintegrated, who are forced to travel long distances to and from their work, and who consequently fall an easy prey to immorality and political subversion, represents the social cost of industrialisation in this country" (U.G. 36/1958 paragraph 451).

It is in the light of the developments outlined above that the then Prime Minister, the late Dr. Verwoerd, in June 1960 expressed misgivings on whether the concentration of industry was to be continued in the present industrial centres to merely provide employment. At this time too improvements in transport and communications, infrastructure and the building of large irrigation schemes had tended to spread population and economic activities to hitherto inaccessible areas and there was a need to move industry to such places to secure markets and to reduce the pressure on the few areas. For these reasons the policy of industrial decentralisation was embarked upon. In the course of time however the policy has undergone revisions to emerge today as a major aspect of the regional

development strategy in Southern Africa.

According to Wilczewski et al (1978) industrial decentralisation or migration involve, besides the movement of productive capacity from one place to another, (1) the construction of new plants in new places, (2) extension and modernisation of existing plants and (3) the adaptation of unused buildings or of closed industrial plants. The history of industrial decentralisation in Southern Africa has concentrated mostly on the former and is adapted from the growth pole theory.

5.6 The Policy of Industrial Decentralisation

For the simple reason that "in South Africa the increasing unemployment and the urge on the part of the population to move to the cities occur for the most part in the Bantu areas" (Dr. Verwoerd, 1960) the policy of industrial decentralisation was in large part aimed at the Bantu areas. The policy was aimed "at finding gainful employment for the Bantu population with the least disruption of their home and communal life on the principle of taking the employment opportunities to the areas where labour was readily available ..." (Kutzenberg, 1973, p. 142).

To ensure a successful implementation of the policy and effect balanced spatial development a commission of inquiry was instituted (Tomlinson Commission) to investigate the issue and make suitable recommendations. The "Report of the Commission for the Socio-Economic

Development of Bantu Areas in the Union of South Africa" (Tomlinson Report) dealt with strategies to achieve this and homeland development in general. In 1956 the recommendations of the commission to government to institute a border area industrialisation policy was accepted in a government white paper.

5.6.1 Border Area Industrialisation

The implementation of the border industrialisation policy was begun after the announcement of the programme of "industrial location and border development" by the late Prime Minister of South Africa, Dr. Verwoerd in 1960. The policy suggested the promotion of industries in areas bordering the native reserves so that native area inhabitants could live in a homeland and commute to a border area industry (Tomlinson, 1983, p. 546). Border areas were defined as an industrial centre located within 52kms of a homeland (Kutzenberg, 1973).

Due to the advantages of agglomeration which the four metropolises enjoined, a committee was appointed to investigate the economic factors for the establishment of industries in the border areas. This was a joint committee (Moolman Committee) of the National Resources Development Council, the Department of Bantu Administration & Development and the Department of Trade and Industries. The committee recommended that certain factors be created to stimulate the viability of border industry. Accordingly, in June 1960 incentives were announced for industries wishing to locate in the border areas.

These factors took the form of tax incentives. A Board for the Decentralisation of Industry was created to implement these proposals.

Due mostly to the lack of infrastructure and the marketing requirements of many industries, the border area industrialisation policy achieved limited success. Few industries took advantage of the tax incentives offered and these only moved to areas where their requirements were not unduly disrupted. Indeed the first factory to move to a border area, a clothing factory, moved to Hammersdale due mostly to its proximity to the large Durban market (Reveson, 1982, In Hanekom (ed), 1982, p. 56). The limited success that was achieved with the border industrialisation programme and the increasing social and political problems being experienced at the four metropolises, necessitated the introduction of coercive measures to control industrial expansion at the metropolises. This was in the form of the Physical Planning and Utilisation of Resources Act (Act No 88 of 1967). The Act placed limits on the expansion of certain industrial activities in the industrialised areas of the country.

In 1965 the government realised that there was also a need to extend the policy to other areas where black labour surpluses existed if success was to be attained in utilising industrial location to take opportunities of areas of labour surpluses. Accordingly, it was announced in September 1968 that incentives were to be offered to white industrialists wishing to invest in the black homelands.

The policy was also revised when it was realised that the lack of suitable infrastructure at the border areas was hampering the smooth operation of the scheme. The large areas that needed to be provided with the necessary infrastructure and the limited funds available made it imperative that the infrastructure could only be provided at selected centres. This development introduced the concept of selecting growth points so that they could be provided with the necessary infrastructure. Government also realised that local authorities had little funds available for such an exercise. Governmental assistance became necessary. Rosslyn industrial area was the first to obtain governmental funds for this purpose (Kutzenberg, 1973). The Bantu Homelands Development Corporation was created to oversee the provision of infrastructure for the homelands to ensure that the industrial decentralisation policy succeeded (Dewar, et al., 1982, p. 42). The government initially started by granting R200 000 for the provision of infrastructure at Rosslyn. This sum by the end of 1973 had increased to over R13m for both border and homeland centres (Kotzenberg, 1973, p. 147). The selected areas in the homelands were referred to initially as "decentralised areas" (Kotzenberg, 1973, p. 143). In Transkei, Umtata and Butterworth were selected as decentralised areas.

5.6.2 The Growth Point Strategy

In 1971 the government appointed a Growth Points Committee as an arm of the Board for the Decentralisation of Industries to select growth points where industrial developments were to be promoted. A number of

towns (including many in the homelands) were selected as growth points. New incentives were offered and differentiated in terms of how attractive or otherwise an area is (Dewar, et al., 1982, p. 51).

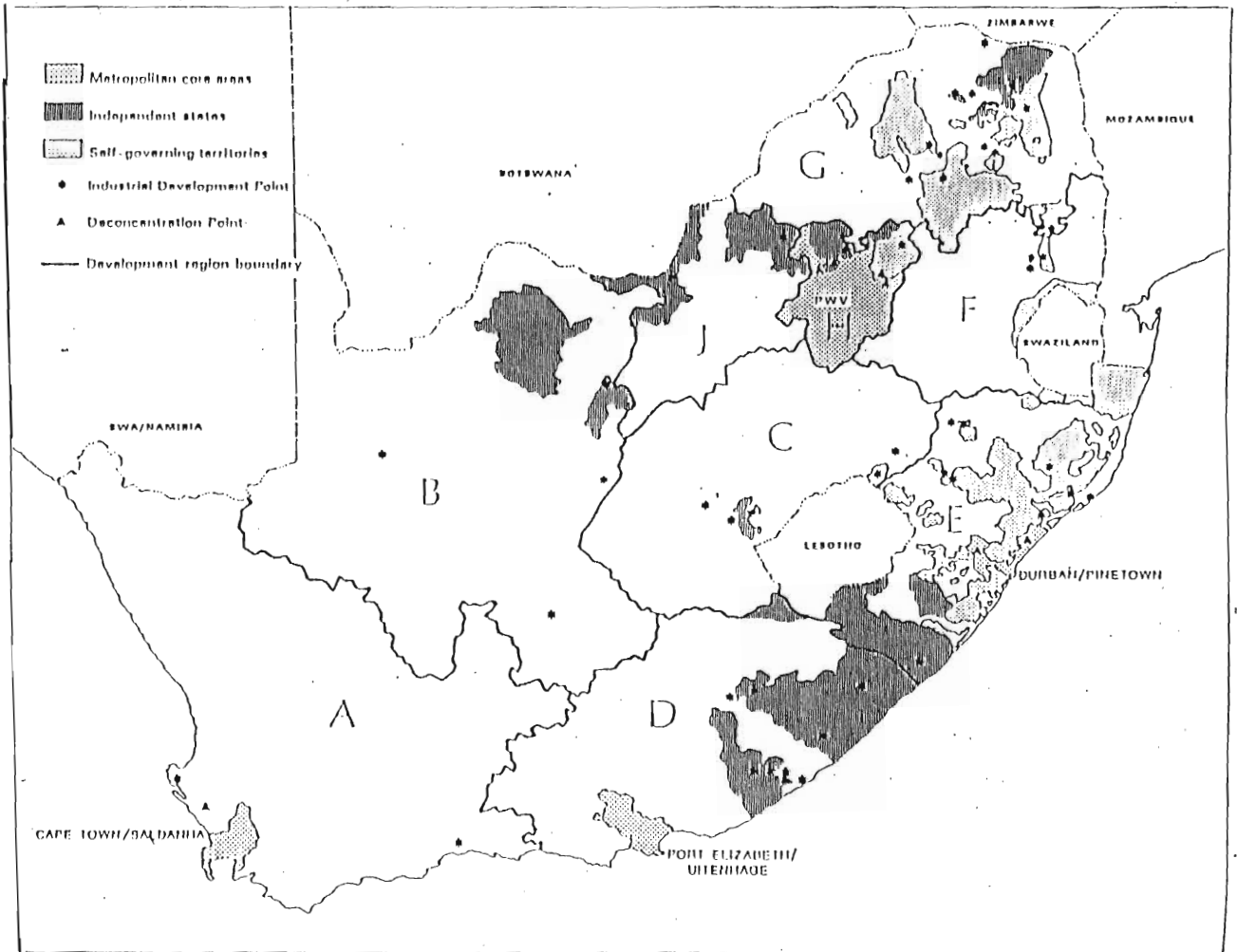
In view of the Native Land and Trust Act (1936) an agency system was instituted which permitted whites to open industries in buildings owned by the Bantu Investments Corporation at growth centres located in the homelands. The the agency system offered to industrialists factory units, housing, and other financial inducements to locate their operations in the homelands. They are then recognised as "agents" of development hence the term. Industries established under the agency system were however to be sold at a later date to black entrepreneurs. The provision of government assistance in the establishment of industries was founded on the realisation that manufacturing industries could provide a better utilisation of labour and raw materials to achieve better economic development for the benefit of the population.

In 1975 the National Physical Development Plan (NPDP) was announced which laid emphasis on the creation of development regions. It defined 38 regions and a hierarchy of settlements within each region. The hierarchy consisted of planned metropolitan areas (ie areas with sufficient growth potential to grow into metropolitan centres), growth poles (ie areas with sufficient growth potential to grow into independent cities in future), principal towns (ie those that would house regional services) and finally growth points. In Transkei the

two decentralisation areas, Umtata and Butterworth were now designated as growth points. With the attainment of independence of the first homeland, Transkei, the Bantu Investment Corporation was renamed the Corporation for Economic Development (C.E.D.) to co-ordinate developments in the homelands.

In spite of granting independence to Transkei in 1976 the South African government had noted by the end of 1979 that "there was a common economic system in South Africa" and that homelands economic system were no longer to be thought of as independent (Tomlinson, 1983: p. 549). This realisation resulted in the reformulation of the policy of industrial decentralisation at the Good Hope Conference in 1981. The white paper released in 1982 gave "information about the promotion of industrial decentralisation as an element of a co-ordinated regional development strategy for Southern Africa" (p.3). The plan envisaged the demarcation of Southern Africa into a number of development regions (functional regions). There was also a recognition and demarcation of regions requiring more development aid than others. New industrial decentralisation packages (concessions) were announced. The concessions granted to each centre depended on the position of the region along a scale of development priority regions (Map 5.2 & Table 5.3). Region D was accorded the highest development priority and accordingly it has some of the most attractive concessions available. Butterworth happened to be located in region D.

MAP 5. 2 : DEVELOPMENT REGIONS - SOUTHERN AFRICA



Source: Manual on the Implementation of the Regional Industrial Development Incentives Introduced on 1/4/82.

Table 5.3 : Development regions ranked in terms of development priority

Region	Description
D	Eastern Cape, Ciskei and the southern part of Transkei
E	Natal, KwaZulu and the northern part of Transkei
G	Northern Transvaal, Lebowa, Gazankulu and Venda
F	Eastern Transvaal and KaNgwane
B	Northern Cape and a part of Bophuthatswana
J	Western Transvaal and a part of Bophuthatswana
C	Orange Free State, Qwaqwa and a part of Bophuthatswana
A	Western Cape
H	PWV, KwaNdebele and a part of Bophuthatswana

Source: Manual on the Implementation of the Regional Industrial Development Incentives Introduced on 1/4/82.

Table 5.4 : LEVELS OF INCENTIVES AT INDUSTRIAL DEVELOPMENT POINTS-
REGION D

CONCESSION	PERCENTAGE	TIME PERIOD
Transport Rebate (% of a market related interest rate)	60%	Seven Years
Employment Incentive (% of total wage bill, cash grant)	80%	Seven Years
Maximum per worker (per month)	R110	
Training Grant (% Unspecified)		Seven Years
Interest and/or Rental Concession	60%	Ten Years
Housing Subsidy	60%	
Relocation Allowance (% Unspecified)		
Price Preference on Tenders	10%	
Electricity Concession (% Unspecified)		

Source: Manual on the Implementation of the Regional Industrial Development Incentives Introduced on 1/4/82.

Altogether eight functional regions were established on the basis of three criteria: rate of unemployment, per capita incomes, and development potential. For each of these regions a number of industrial development centres were identified. These industrial development centres were selected by the Growth Points Committee based on: availability of infrastructure which created favourable conditions for private industry, site suitability for the creation of agglomeration advantages to counter balance existing metropolises, areas of depression where there is an urgent need to stimulate development and some on an ad hoc basis.

Eleven points close to metropolitan areas were identified as decentralisation points and 28 areas within the 'homelands' were identified as industrial development points. A further number of centres (20) outside the homelands were also selected as industrial development points. The Transkei was split into two: the southern

part in Region D together with Ciskei and the Republic of South Africa towns of East London-King Williams Town-Queenstown and the northern part in Region E together with Natal and KwaZulu. In Region E Lusikisiki was identified as an industrial growth point in Transkei while in Region D, Butterworth, Umtata and Ezibeleni, were selected as industrial development centres.

For many reasons Umtata and especially Butterworth have been successful so far in attracting many industries. For one thing these centres are linked by road and rail to the harbour town of East London and the metropolitan centres of Queenstown and King William's Town where industrial resources and markets already existed. For another because these centres have been recognised as growth points for a long time a lot of effort towards providing infrastructure had already been concentrated on them.

The need for a proper framework within which to obtain financial assistance for the establishment of infrastructural provisions led to the disbandment of the Corporation for Economic Development and the establishment of the Development Bank of Southern Africa which began its operations in 1983. This institution was utilised as the multilateral agency providing funding for infrastructural projects. As at March 1986, R55,3million had been invested in Transkei providing infrastructure, building factories, housing key personnel and providing loans for working capital ('Leading the way to Development' TDC paper on Industrialisation, p.1).

The success of industrial decentralisation to Transkei has been dependent on four major strategies. These are : (a) the development of infrastructure favourable to industry (b) assisting indigenous businessmen to establish their own industries, (b) establishing own industries through the TDC, and (c) the offering financial of encouragement to foreign industrialists to establish operations in Transkei through the agency system (TDC, 1979, p.1). The proportion of Transkeian and TDC owned industries to the total industrial output has been very small (Benbo, 1979) and it is clear that the bulk of industries established in the Transkei benefit from the agency system. Among others the major objectives of the policy may be identified as: (a) to stimulate development in the various regions according to their available resources and through that reduce the inequalities in development between spatial units in Southern Africa (b) to promote self-sustaining industrial growth at selected points (c) to create jobs in the development regions and (d) to encourage urban development outside the existing metropolises (Manual on the Implementation of the Regional Industrial Development Incentives, 1985). An examination of the first three objectives constitutes the theme for the sixth and seventh chapters while the last objective is considered in this chapter.

The effects of the regional development policy has been such that from only 35 manufacturing plants located in Transkei as at independence in 1976, there were as at the end of 1987 in Butterworth

52 manufacturing plants, Umtata had 18 and Ezibeleni had 12. Industrial sector growth has averaged 10% claimed to be the highest in Africa (TDC, Brochure "Why should you move to Transkei" p.1).

Butterworth has attracted a greater percentage of the industries partly because it has been provided with better infrastructural facilities also because of its nearness to the port of East London. Due to the fact that industries of any kind are approved without regard to their links with the space economy there are in Butterworth today industries ranging from food manufacturing to steel works and clothing. Of the total of 89 industrial applications approved as at the end of 1982, Butterworth attracted 55.1% while Umtata attracted 25,8%. Capital investment in industry in Butterworth as at the end of March 1985 is estimated at over R89 696 000 representing 73% of all industrial investments in Transkei (DBSA Report on Transkei, 1987, p. 8-23). Employment created by the industries in Butterworth total over 6000 from a total investment of over R85m (Report, 1989, p. 55). Butterworth so far is the fifth most successful growth point in Southern Africa in terms of employment creation (Report, 1989, p. 57). Industrial developments however have a tendency of attracting other developments to a region (de Souza and Foust, 1979). The large concentration of industries in Butterworth has therefore enabled the town in the course of time to emerge as a major urban centre. Attention is devoted in the following section to tracing the associations of processes that has resulted in the present spatial structure. This will help to confirm the notion that the industries

in Butterworth constitute a key propulsive unit through which developmental impulses can filter to other areas.

5.7 Emergence of Butterworth

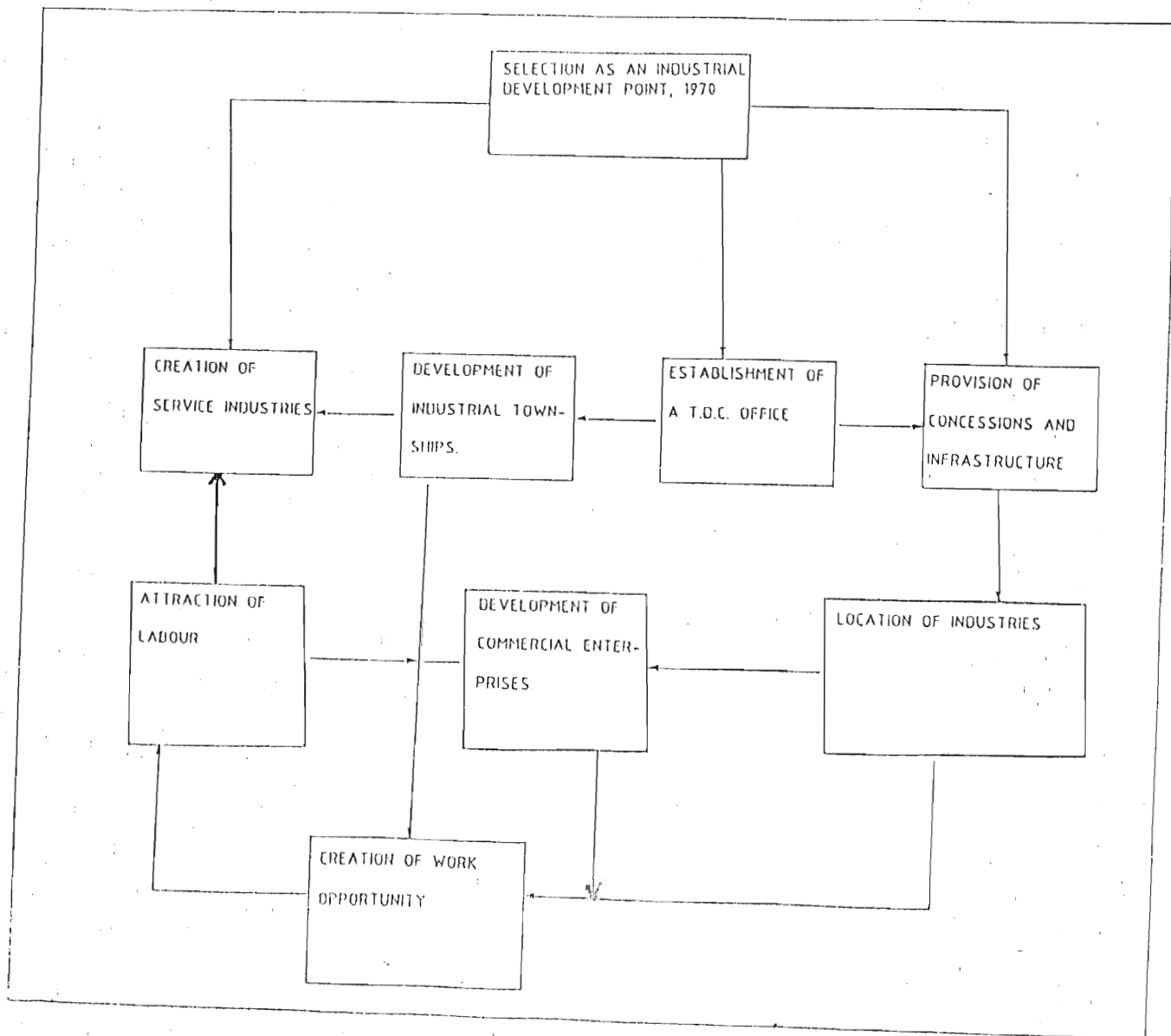
The emergence of Butterworth began in 1971 and thus introduces the second and the rapid phase of the town's development. The review of the major strategy of regional development, the policy of industrial decentralisation, has established that Butterworth assumed an industrial character after 1970. Before then there were no industrial establishments in the town. The various processes that have accompanied the development of industries in Butterworth can be outlined through the use of a causal model.

5.7.1 Causal Modelling of the Processes Leading to the Emergence of Butterworth as an Urban Industrial Growth Point.

The processes of spatial evolution through industrial developments have been shown to be causal and self reinforcing (Myrdal, 1957; Mabogunje, 1980). To explain the present spatial form of Butterworth therefore a recursive model is employed (Harvey, 1969, p. 419) (Figure 5.1). The recursive model chain should however, also reveal the positive feedback processes which reinforce the system.

The figure explains that each process is tied up in a recursive chain with the links in the causal chains indicating how each of the independent factors have operated over the years to give rise to the contemporary situation.

FIGURE 5.1 RECURSIVE MODEL OF THE FACTORS UNDERLYING THE EMERGENCE OF BUTTERWORTH AS AN URBAN INDUSTRIAL CENTRE.



The chain indicates that after the selection of Butterworth as an industrial development point in 1971 the government of both Transkei and the Republic of South Africa co-ordinated efforts to provide proper infrastructural facilities. This began in 1972 and entailed the extension of water and electricity facilities, provision of industrial sites and the building of townships. Table 5.5 below, which is an abstract from the Xhosa Development Corporation expenditure indicates how much was sunk into these projects.

Table 5.5: Xhosa Development Expenditure (later the Transkei Development Corporation)- 1973

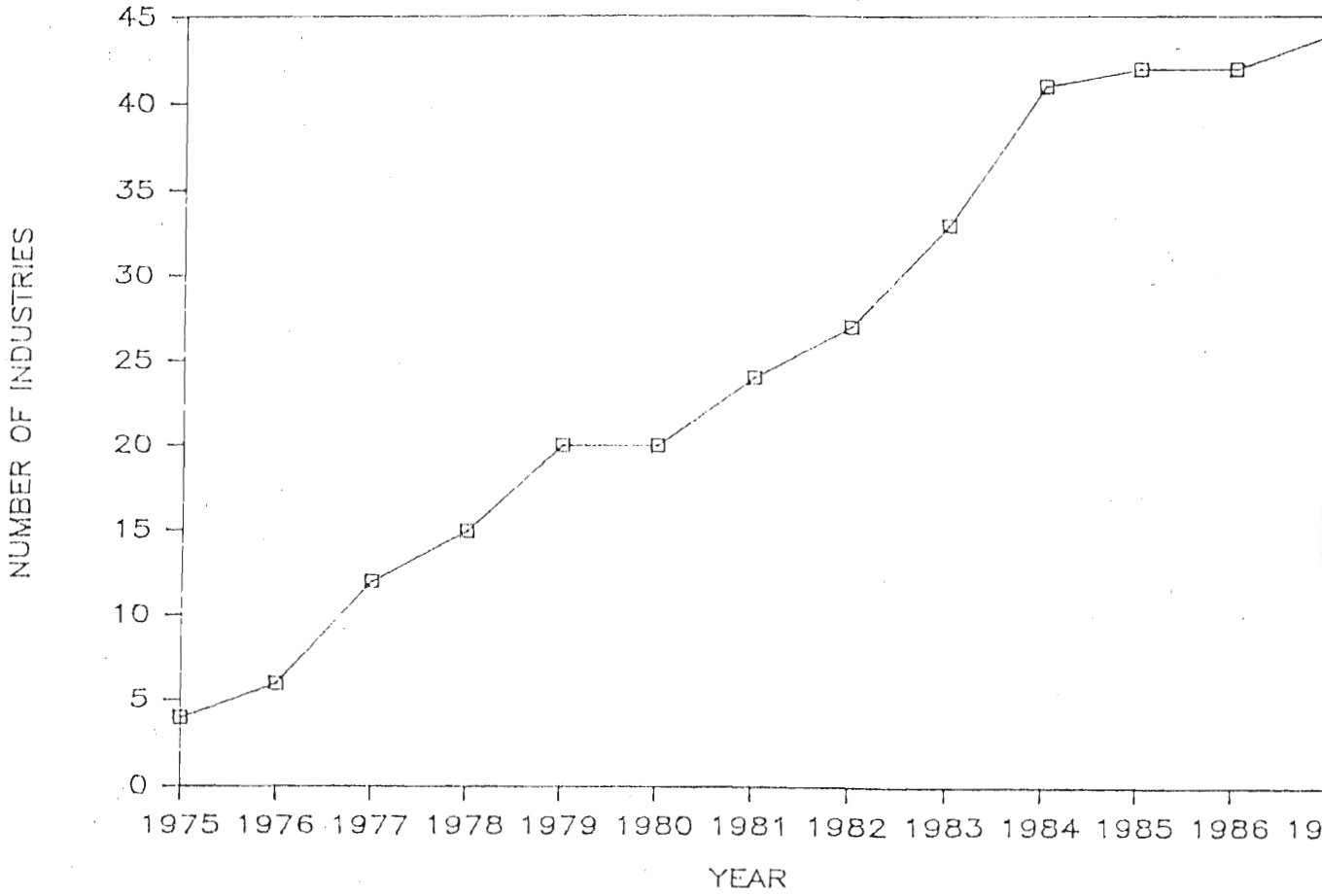
Development of Industrial Township	R621 461
Water Schemes	R213 023
Electricity Supply	R97 956
Housing for Key White Personnel	R3 133 653
Erection of Factories for Leasing to Entrepreneurs	R2 239 746

Source: Horrell, 1973.

From the table it can be deduced that 49.7% of the total expenditure was used to provide housing for "key white personnel". This led to the attraction of the first four industries to Butterworth in the same year. The continued expansion of infrastructural facilities attracted more industries. Figure 5.2 shows the rapid growth in manufacturing activities from 1975.

The establishment of the first industries also necessitated the establishment of a TDC office in Butterworth to provide support to the industries. The process of creation of infrastructure, the establishments of more industries and the creation of a TDC office expanded work opportunities in Butterworth and in turn attracted many people. In the course of time the need for increased housing for the

Figure 5.2: INDUSTRIAL GROWTH IN BUTTERWORT
1975 - 1987



Source: Field Survey, 1988.

industrial employees required the building of new industrial townships (thereby providing more work), and the increased local population invited the establishment of service industries. Map 5.1 also reveal the growth in new townships. Both figure 5.2 and map 5.1 indicate that the most rapid development of these activities started after 1970. The first two industrial townships (Ibika and Mzobomvu) built in 1973 contained three thousand houses in all. These townships were built close to the two industrial sites for the accommodation of industrial workers. In the course of time, however, these created work opportunities and attracted the expansion in the number of service industries. The continued growth in the population also meant increased demands for services such as schools, water, electricity, banks, post offices etc. Table 5.6 summarises the growth in water consumption, post offices, banks, and educational institutions from 1977 to 1987.

Table 5.6: Growth in Water Consumption, Post Offices, Banks, and Schools in Butterworth From 1976 - 1987.

YEAR	I N D I C E S			
	Water Consumption, (in Megalitres)	Post Offices,	Banks,	Educational Insts.
1977	1436.3	1	1	5
1978	1854.1	1	1	6
1979	2124.8	1	2	6
1980	2425.5	1	2	6
1981	2062.0	1	3	6
1982	2462.8	1	3	7
1983	2620.2	2	4	10
1984	2648.5	2	4	11
1985	2784.0	2	4	12
1986	2935.4	2	4	13
1987	3172.1	2	4	14

Source: Field Survey, 1988.

The table reveals that rapid growth in these facilities occurred especially after 1983. When this is compared to figure 5.1, it is found that this period coincides with the period of the rapid establishment of industries. It therefore brings into perspective the relationship between industrial establishment and the expansion in other facilities.

The sum of these activities led to a rapid growth in work opportunities in the town and a consequent migration of people to the town either as workers or job seekers especially between 1970 and 1983 (which were peak periods in the establishment of industries). Table 5.7 below shows the growth of the town's population in 1970, 1980 and 1985 the latest date for which figures are available.

Table 5.7: Population of Butterworth 1970 - 1985.

Year	Population	% Growth Over Previous Figure
1970	2769	
1980	25994	22.90
1985	27343	5.19

Source: IMDS Census Figures, Transkei.

The above table indicate that Butterworth has experienced an astronomical increase in population from the 1970's. The rapid growth of the population has resulted in Butterworth having the highest percentage of urban population per sq km in the whole of Transkei. The percentage of urban to rural population in the Butterworth District stands at 36,22% while that for the second district, Umtata, stands at only 28,53% ('Transkei Profile' IMDS, 1985, p. 8). The peri-urban

residents of Butterworth are estimated to be about 50 000 (Butterworth Master Plan, Preliminary study, 1987).

What emerges from this model is that the involvement of the government through the policy of industrial decentralisation is the most important process that have culminated in the emergence of Butterworth. This relates to the identification and provision of concessions and infrastructural provisions that attracted many industries to Butterworth. The model also implies that if the present trend continues Butterworth will keep developing and thereby increasing the already wide differences in the level of economic development between it and the rural areas of Transkei. The basis of such an inference could be better appreciated by examining the feedback relationships between the processes and their spatial form.

The analysis above utilised the technique of causal modelling to analyse the evolution of the processes underlying the emergence of Butterworth. The technique however failed to reveal the feedback relationships between the processes and their spatial patterns. This section examines these linkages. The section is based on the idea that in urban ecology the social areas and process form unified systems (Haney, 1978). The tendency in such social systems is for positive and multiple loop feedback processes to operate to preserve or widen the existing situation of inequalities (Myrdal, 1957). Here causal systems modelling is employed to analyse the causal links between the various processes and their spatial structures. Figure

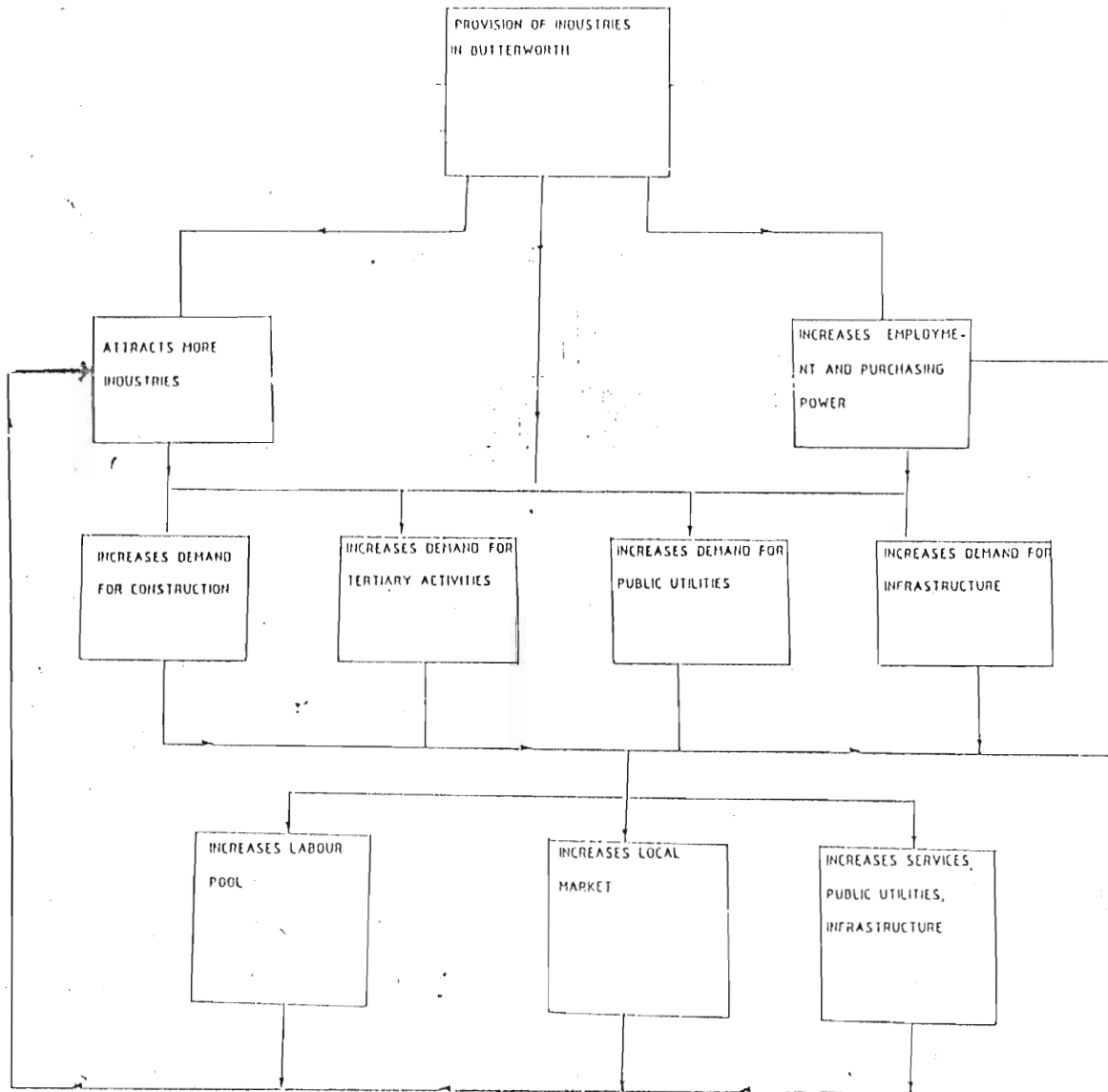
5.3 provides a model scheme of the various links between the various factors.

The scheme indicates that a series of positive reinforcing feedback processes operate in the system to perpetuate the existing patterns. The trend describes the fact that successive increases in all activities emerges with increases in industrial development. An examination of figure 5.2, and map 5.1 would confirm this. It shows that increases in the various activities occurs with the period of rapid increases in industrial activities (1973 - 1984). The developments thus indicate that manufacturing activities in Butterworth constitutes a key propulsive sector within the economy. However, the present review tends to point out that the developments have been confined to only Butterworth. While this may not necessarily be so (chapter six will examine the linkages beyond Butterworth) the scheme indicates a need for intervention in the development process. This is because the process has been shown to be reinforcing and cannot therefore be solely relied upon to correct any inequalities in the system.

5.8 THE PRESENT SOCIO-ECONOMIC STATUS OF BUTTERWORTH

The analysis above implies that industrial developments have enabled Butterworth to emerge as an urban industrial centre. While Butterworth may be still rural as compared to urban centres like Johannesburg, the growth of the town within the Transkeian system of urban places has been phenomenal. The present socio-economic status of the town is outlined below.

Figure 5.3 MULTIPLE FEEDBACK PROCESSES ASSOCIATED WITH THE FACTORS UNDERLYING THE EMERGENCE OF BUTTERWORTH AS AN URBAN INDUSTRIAL CENTRE.



5.8.1 Land Use

Spatially industries take the greatest percentage share of all economic activities in Butterworth. This point can be deduced from Table 5.8 below which summarises land use zones (in hectares) of the various categories of economic activities in Butterworth.

Table 5.8 : Land Use in Butterworth

<u>EXISTING LAND USES BUTTERWORTH</u>	<u>APROX. AREA</u>	<u>%</u>
Residential	297	14.9
Educational	31.6	1.5
Municipal	21.3	1.27
Open Spaces	56	2.8
Government	18.7	0.9
Business/Commercial	14.6	0.73
Institutional (Religious)	4.1	0.1
Roads	193	9.8
Industrial (Developed)	120	6.0
Industrial (Undeveloped)	264	15.63
Vacant	969	48.72
Total	1989	100

Source: Infraplan, 1987.

Thus the total of 384 hectares of land set aside for industrial uses comprises approximately 19.31% of the 1989 hectares of municipal land. There are two industrial areas in Butterworth : Zitulele and Ibeka. At Zitulele there are 84 hectares of land with only three of them undeveloped. The Ibeka industrial area covers 300 hectares of which only 40 or 13% are developed.

Residential usage comprises 15% of the total municipal area in which is located 4 651 developed erven. The municipality owns 3 740 housing units out of this total which is primarily devoted to accomodating low

and medium income families. Most of this housing is situated in Mcubakazi, Msobomvu, Zitulele and Ibeka. High density housing is situated in the townships of Msobomvu and Mcubakazi. The Municipality also owns 13 blocks of flats at Msobomvu and Mcubakazi each comprising 24 dwelling units and 3 blocks of hostels for single males at Msobomvu. In Ibeka there are 17 blocks of flats with four room dwelling units per block. Most of the housing for the upper and medium income earners in Butterworth is owned by the TDC.

The most recent valuation of Butterworth took place in 1984. From this valuation it is observed that peak land values occurs at erf 454, on the corner of Blythe and Umtata Streets where a figure of R54.60/sq m was assigned. This land is developed for government business.

5.8.2 Economy

The space - economy in Butterworth is dominated by manufacturing activities. This is evident from the table below which lists the employment by section of the working population of Butterworth which was obtained from the 1985 census survey.

The table reveals that the manufacturing sector accounts for more than half of the workers in Butterworth. Considering the processes through which the manufacturing sector came to establish itself in Butterworth it may be pointed out that future employment patterns in the town will therefore depend on regional and government policies.

TABLE 5.9 : EMPLOYMENT BY SECTORS - BUTTERWORTH

SECTOR	NUMBER OF PEOPLE	%
Manufacturing	6849	56
Government	1224	10
Semi-Government	612	5
Household	560	4.5
Mining	47	0.4
Agric. & Fishing	51	0.4
Retail & Wholesale	834	6.8
Educational	421	3.4
Hotel & Catering	31	0.2
Transport	199	1.7
Service	879	7.2
Banks & Financial Inst	45	0.4
Professional	13	0.1
Others	469	3.9
Total	12234	100.

Source: IMDS Census Survey, 1985.

The table below indicates the employment patterns by the various sectors of the economy of Butterworth.

TABLE 5.10: OCCUPATIONAL CHARACTERISTICS - BUTTERWORTH

TYPE	No. OF PERSONS	%
Professional/Technical and Related Services	1165	4.5
Administrative/Clerical and Related Workers	1377	5.3
Sales and Service Workers	1857	7.2
Agriculture and Forestry	17	0.1
Labourers and Artisans	7637	29.4
Informal Sector	181	0.7
Unemployed (Including Housewives, Pensioners)	2774	10.6
Scholars	6141	23.6
Not Schooling	4845	18.6
TOTAL	25994	100

Source: Rosmain et al, (1987).

From the table it can be observed that on a percentage basis labourers and artisans form the majority of the employed labour (29,4%) followed by service workers (7.2%) and administrative/professional personnel who comprise 5.3% and 4.5% respectively.

Table 5.11 below compares the employment situation in Butterworth to the national pattern.

Table 5.11 : Comparative Data - Butterworth (Urban) and National Employment Patterns

	NATIONAL		BUTTERWORTH (URBAN) % of population	
	Number	% of pop	Number	% of pop
Labour supply	1 017 000	100.0	15 000	100.0
No. Employed	410 000	40.3	12 234	81.0
No. Unemployed	187 000	18.4	2 774	18.5

Infraplan, 1987, Vol. 1

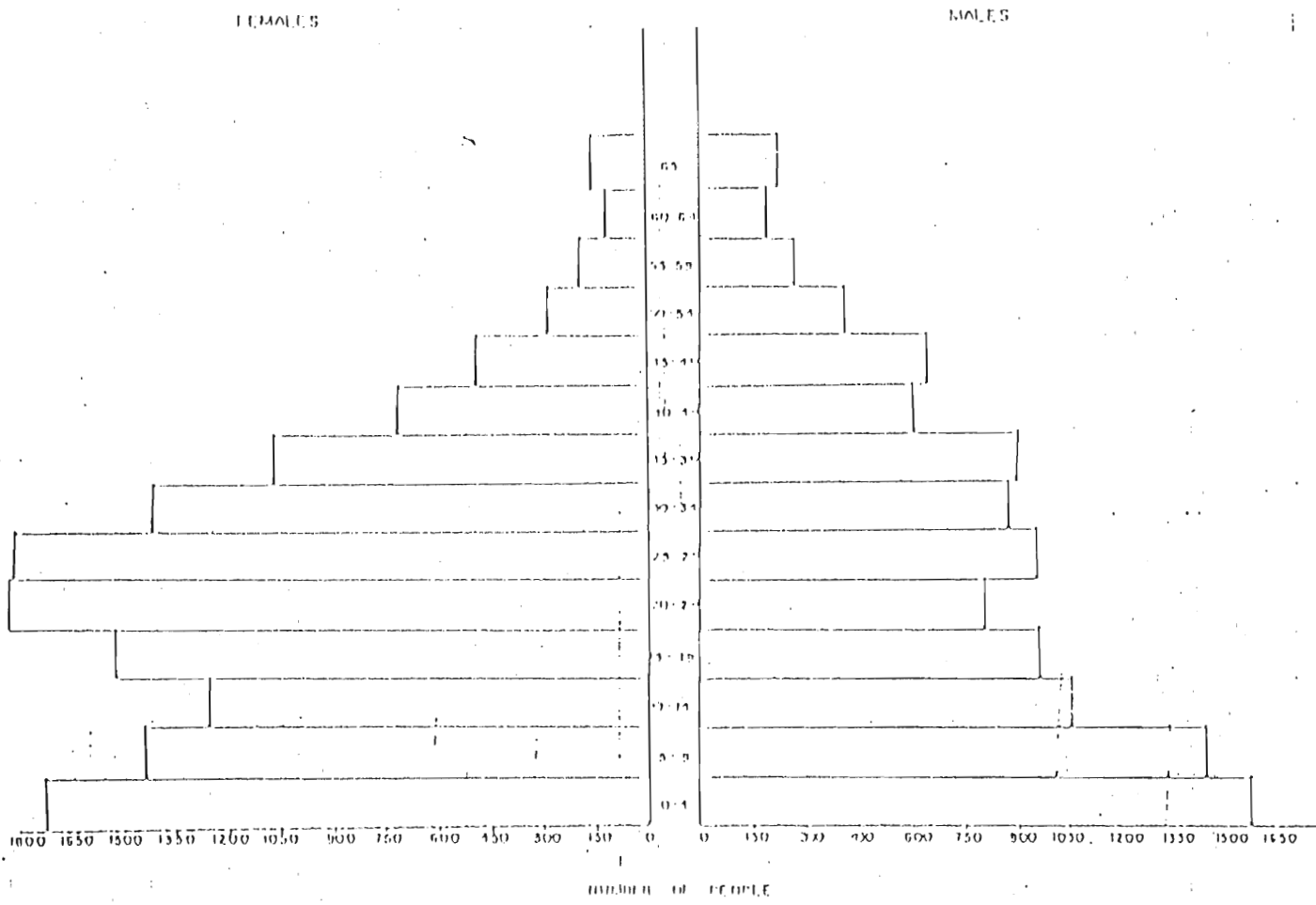
From the table it is observed that local employment levels in the urban area of Butterworth, on a percentage basis, are double the national average. Unemployment is however on the same level as the national figure.

5.8.3 Population Characteristics

5.8.3.1 Age and Sex Structure

Figure 5.4 (after page 148) shows the characteristics of the population of Butterworth. The figure reveals that the young population (0-19years) constitutes 42% of the total population. The economically active population (20 - 60years) constitute 54% whilst the aged population form 4%.

Figure 5.4 AGE AND SEX STRUCTURE - DULLEHWORTH



SOURCE: Infraplan, 1987

form 4%.

The figure also reveals that among the economically active population 60% are females with males comprising 40%. The exhibiting of population characteristics that are predominated by women in the economically active group is a little unusual for an urban area in Transkei. This pattern is more characteristic of the rural areas of Transkei where a 70% male absentee rate has been recorded in some places (Muller, 1985). However, the situation has been created from employer bias. Many employers interviewed about their major problems mention the high staff turnover of males (for no apparent reason) which results in high training costs. For this reason most manufacturing firms prefer the employment of females unless the job requirements are basically male oriented.

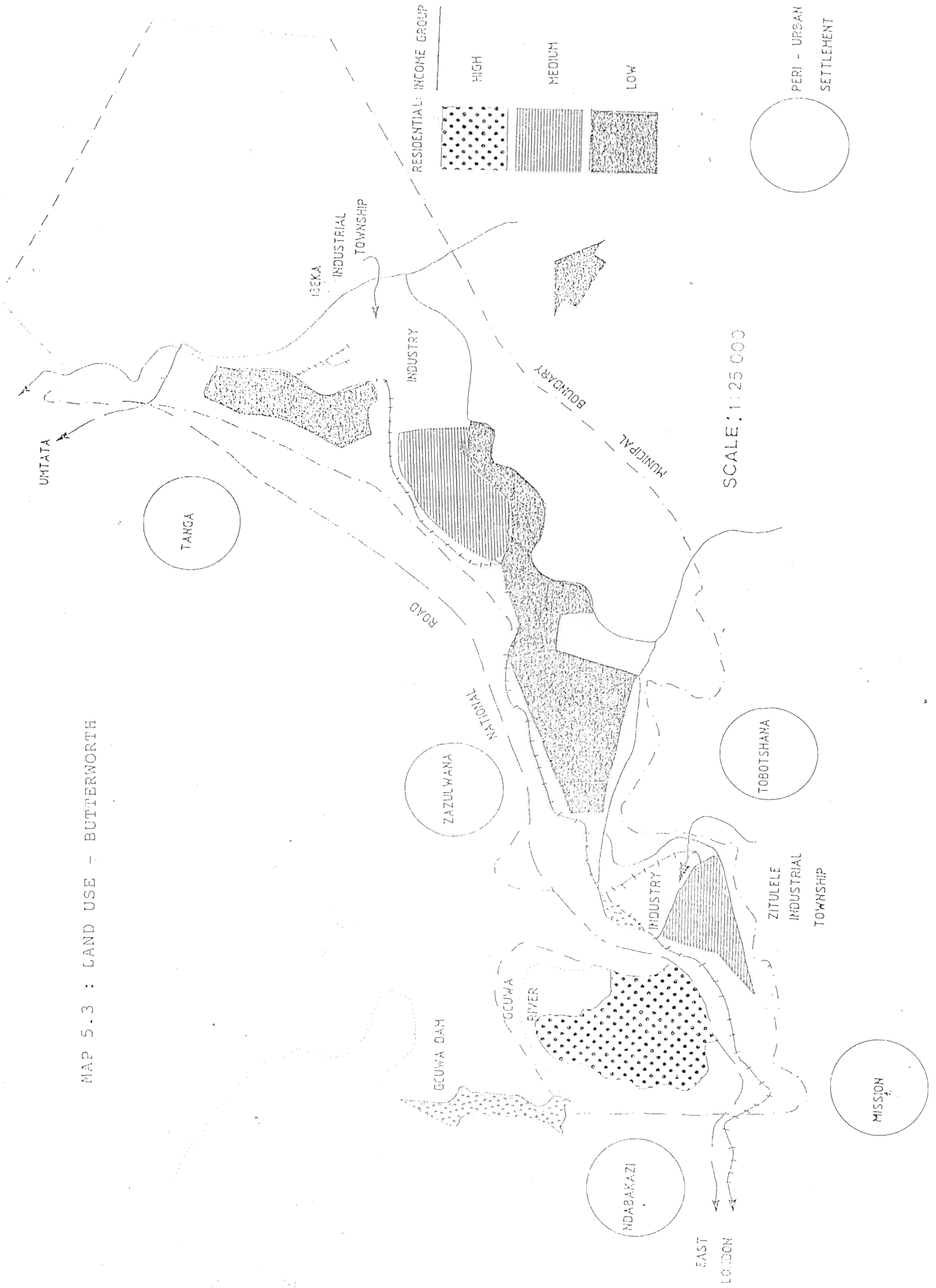
5.8.3.2 Population Distribution by Income

The population distribution by income is shown on map 5.3. From the map there are indications that in general those earning low incomes, defined as being R200 or less per month, predominate in Mcubakazi (Ext 11 and 12), Msobomvu (Ext 9 and 10) and Ibeka township. The middle class (medium income group) reside in Vulli Valley (ext 15) whilst the Upper income group reside in Extensions 6,1,2, and 7.

4.8.4 Education

Table 5.11 below summarises the number and facilities in the schools within the Butterworth Municipal area.

MAP 5.3 : LAND USE - BUTTERWORTH



Source: Infraplan, Vol. 1, 1987.

Table 5.11 below summarises the number and facilities in the schools within the Butterworth Municipal area.

TABLE 5.11: EDUCATIONAL FACILITIES IN BUTTERWORTH - 1987

NAME OF INTS.	LEVEL	ENROLMENT	TEACHERS	CLASSES
Vulli Valley	Sen. Sec.	264	15	12
Msobomvu	Sen. Prim.	609	10	10
Emqhaphini	Sen. Prim.	183	6	6
Langaletu	Jun. Sec.	1013	20	1??
Msobomvu	Jun. Sec.	747	22	16
Mayekiso	Primary	33	2	5
Langaletu	Pre-School	66	2	2
Vulindlela	Sen. Prim.	740	22	16
Emqhaphini	Jun. Prim.	450	10	9
Lower Mcubakazi	Pre-School	45	2	1
W.S. Mbanga	Jun. Sec.	766	17	15
Msobomvu	Sen. Sec.	601	12	15
New Horizon	Jun. Sec.	130	7	5
Total		5 647	147	112

Source: Circuit Office, Butterworth, 1988.

As indicated in the above table there are 13 schools within the Municipal area. The pupil/classroom ratio is estimated at 1:53 (Circuit Office Records, 1988). In addition to these schools there are four higher institutions within the immediate vicinity of the municipality. The University of Transkei also operates a branch and there is a Technikon in Butterworth.

5.8.5 Health

There is one major hospital in Butterworth with 269 beds, 10 doctors and a small Municipal clinic at Msobomvu manned by a part-time doctor and some nurses. The hospital also serves the populations of Ngamakwe, Idutywa, Willovale, and Tsomo.

5.8.6 Community Services

Community services in Butterworth include the 2 town halls (Town centre with a capacity of 500 and Msobomvu with a capacity of 1000) a swimming pool, a municipal library which can seat approximately 30 people and two stadia. One of the stadia is under the control of the Cape Provincial administration while the other is under the control of the Municipality.

5.8.7 Squatter Settlements

One of the inevitable consequences of the polarisation of development at Butterworth is related to overpopulation, congestion and environmental problems. With the high rate of growth of population, congestion, inadequate housing, poor sanitation and the lack of other social services have arisen. Shortage of accommodation remain a serious problem. The large squatter settlements surrounding Butterworth are a vivid reminder of the extent of the problem of accommodation shortages. In spite of these problems polarisation of development processes need not be seen as a problem as has been indicated by Richardson (1974), provided that links are established with the rest of the national space economy.

In view of the importance of industries to the economy of Butterworth, the general lack of inherent local facilities favourable for the location of industries there and the circumstances under which industrial developments have been handled, there is a need to review the theoretical foundations underlying the development of industries

and to compare it to Butterworth. Such a review will help to dispel the misconception that industries must only be established at areas of least transport cost. The review will also enable the future growth of industries in Butterworth to be placed into proper perspective.

5.9 CLASSICAL LOCATION THEORY

The publication of Alfred Webers book Uber den Standort der Industrien in 1909 originated the theory of industrial location. Since the publication of this work, works as by Tord Palander, Edgar Hoover, August Losch, Melvin Greenhut, Walter Isard and William Alonso have attempted to explain industrial location mostly in term of least transport cost analysis.

These explanations are based on the assumption that the selection of a locality for an industrial establishment involves a consideration of cost and income. The relevant factors bearing on cost and income differ for alternative locations. Profitability dictates that one would locate an industrial plant where cost is low while income is high. These are however intimately bound up with the characteristics of the location and the nature of the production process. The notion exists however that for each industry there is a "best location". A consideration of site advantages explain why certain areas are best suited to some industries while others are not.

Several site advantages that favour the location of a certain industry can be isolated. Among them one can mention suitable site, favourable

climate, easy access to sources of power and raw materials, nearness to markets etc. These factors may be reinforced by acquired advantages which emerge as the area develops. Among these one can mention transport facilities, commercial services, skilled labour, market organisation and the development of subsidiary services. It however sometimes happens that two areas may present the same advantages and the problem therefore becomes one of choosing the most suitable location. The concept of comparative advantage is invoked to measure the advantage that one area has in terms of cost over another.

The classical location theory amounts to a systematic consideration of all possible locations, calculating transportation and production costs at each location and choosing the lowest. The choice of that location is influenced by the pulls from markets or material sources. The force that pulls towards a location is known as "ideal weight". Where the ideal weight is large in relation to the others, it pulls the location of the industry towards it.

5.9.1 The Classical Location Theory and Transkei

The classical location theory as outlined above is very suitable for a developed country because in these countries transportation networks form a lattice offering nodes or points of confluence. There is therefore a more even distribution of locations. In Transkei, on the other hand, the modern transportation network reflects the economic history of the country. All the best transportation routes move towards the Republic of South Africa which borders Transkei on three

fronts. The consequence of such a pattern is that the point most accessible to the country as a whole is not its geographic centre but some points along the route to the Republic of South Africa. It follows therefore that transportation of goods from Butterworth to Lusikisiki cannot be justified from the point of view of the classical location theory since Butterworth cannot represent a point of least-transportation-costs in relation to Lusikisiki market. This is not to say that transport inputs as analysed by the classical theory does not play any role in the location of industry in Transkei. Rather it means that external factors serve as a more powerful magnet than the transportation factors in attracting industry to Butterworth.

Furthermore, industries spring up in parts of Transkei, not because transportation costs are at a minimum there but because a major government policy decides the location of industries. As has been pointed out in this chapter the location of many industries in Butterworth is related to this fact. Several researchers have thus noted that industrial location may not be related to a least transport cost location (Smith, 1971; Knowles and Wareing, 1976).

Research by Todes and Watson (1984) and by Addleson, Pretorius and Tomlinson (1985) indicates that, the most important factor accounting for the location of many industries in Butterworth is the availability of concessions. While this may be so, it is undeniable too that Butterworth does offer a few locational advantages favourable

for the location of industry. This assertion can be supported on the grounds that many other centres offer the same level of concessions and thus compete directly with Butterworth in attracting industries. That there should be industries in Butterworth therefore implies that there must be some locational advantages that attract industry. The following represent some locational factors in Butterworth that contribute to the maximum profitability of the industries and hence their location there.

5.9.2 Processing Factors

These comprise all factors which contribute to the processing of raw materials. Ranking first is power supply. Butterworth's primary electricity system is well suited to its needs. The 66/22 kv transformer at Lamplough is enough to cater for its present and future needs.

In addition to power supplies there is the availability of large quantities of water. Butterworth has a large dam on the Gcuwa river from which to draw its raw water requirements and a modern and well run treatment plant.

The availability of an adequate waste disposal system at Butterworth is also an incentive for the establishment of industries. There are a total of six pumping stations delivering waste to the two treatment sites. Besides a comprehensive reticulation and main drainage system exist which enables the disposal of industrial waste to be a

relatively easy assignment.

5.9.3 Labour supply

The industries in Butterworth have exploited and are exploiting the abundant labour resources in Transkei to their advantage. This has arisen from the development of several industries there which has led in time to the migration of people from several areas of Transkei to go and seek work in Butterworth. The annual increase in population in Butterworth between 1970 and 1980 was, for instance, estimated at 16.8% (Butterworth Master Plan Proposals, 1987, Volume 1). This figure is far higher than the national average of 2.5% and is attributed to migration from other areas of Transkei.

There is also the added advantage of having no labour unions and therefore a united front of workers to agitate for improved conditions. Strikes are therefore infrequent. Worker complaints are often put down with threats and sometimes actual arrests. The workers are always conscious of these and therefore talk less in terms of strikes. The Transkei Chamber of Industries is also based in Butterworth and through that medium industrialists attempt to offer uniform conditions to minimise migration of especially skilled labour.

5.9.4 Space

Site requirements play an important role in the locational decisions that influence the location of industries in Butterworth. For ease of operations all industries need relatively flat land with adequate road

and rail connections. Such extensive areas of flat land exist in the two industrial sites of Butterworth. Braun Engineering and Ingotex, for instance, found no difficulty in obtaining 10000sq metres and 3300 sq metres respectively of flat land for their operations. Of the total of 273,5ha of land devoted for industrial occupation in Transkei as a whole, 144,8ha (53%) was set aside in Butterworth alone. Industrial sites in Butterworth were also provided with far more and better infrastructural facilities than the other industrial development points. The 144,8ha of land available for industrial occupation in Butterworth, for example, is divided into 61 stands all with bitumen surfaced road connections with 20 of them having rail facilities in addition. In contrast, the other centres like Ezibeleni had no rail facilities at its industrial sites while Umtata had rail connections at only two of its stands.

5.9.4 Distribution and Marketing Factors

The other category of locational factors relates to the distribution and marketing of the products from the various industries in Butterworth. For many of the industries in Transkei and the Republic of South Africa form their market area. This has been possible because of the availability of excellent road and rail connections from the industries to other parts of the Southern African Region. In addition to this Butterworth industries take special advantage of their proximity to the port of East London when they have to export some of their products.

5.9.5 Welfare Factors

The locational preferences of industrialists is another powerful factor that influences the location of industries. Industrialists who invest in Transkei are to some extent well-educated and mostly whites from the Republic of South Africa. They therefore expect the kind of living conditions associated with the white areas of South Africa. These include good housing facilities, cinemas, schools, entertainment and a sense of being at a place where life is fast moving. Butterworth provides most of these needs and in addition is close enough to the Republic of South Africa for people to go and enjoy what it cannot offer there.

The four major factors considered together may have influenced the location of industries in Butterworth. These factors will also be crucial in the future if more industries are to be established in Butterworth. However, it must be understood that the influence of these factors are relative.

Conclusion

From the evidence presented in this chapter it seems reasonable to conclude that the spatial structures that have emerged in Southern Africa represent the outcome of a historical process of the interactions between various regional systems. These in the course of time have produced regional imbalances in development within the region. The government of both Transkei and of South Africa deems this pattern as unsatisfactory and it is to effect desired changes

that a regional development strategy involving the decentralisation of industry has been proposed and implemented. Industrial development has, however, shown itself to initiate further developments in areas where they are embarked upon. In the course of time therefore industrial development in Butterworth has led to its emergence as an urban industrial centre. If the industries in Butterworth can extend their multiplier effects to the other regions, there is expectation that a balanced spatial development will in the long run emerge in Transkei in particular and Southern Africa in general. The next chapter therefore examines the links between the industries in Butterworth and the various regions in Southern Africa.

CHAPTER SIX

AGGLOMERATION ECONOMIES AND INTER-INDUSTRY LINKAGES

6.1 Introduction

The previous chapter has revealed that the most important elements accounting for the growth of Butterworth as a point of economic concentration are its industrial establishments. The concentration of so many industries at one point (Butterworth) can be a source of agglomeration economies which are crucial to the effective functioning of Butterworth as a growth point. One direct consequence of such economies is a pattern of interrelationships or linkages that are established among the firms in Butterworth. The analysis of these relationships would reveal the internal structure and function of the industries within the growth point. It would also reveal the scale of the relationships and the impact each of the industries could have on regional economic growth. The impact is related to the second stage of the multiplier outlined in chapter three. Agglomeration economies and linkage mechanisms will also bring the economic efficiency of the industries in Butterworth into perspective. This chapter examines the characteristics of the industries in Butterworth, the agglomerative factors, and the linkages among the various industries. Through various methodologies it is intended to test the hypothesis that as distance increases the impact of the industries in Butterworth decreases.

6.2 CHARACTERISTICS OF THE INDUSTRIES IN BUTTERWORTH

An absence of a leading or propulsive industry in Butterworth represents a major deviation from the original concept of growth poles. Given this absence, it is necessary to analyse the nature of industries attracted to Butterworth in order to gauge its potential as a growth pole.

The 49 surveyed industries can be placed in one of six major categories. The first group of industries which are also the most numerous are industries manufacturing textile or leather products. There are 15 of these industries with 6 manufacturing leather products and 9 others manufacturing textile products. Six of the industries are situated at the Ibeka industrial area and the rest at the Zitulele industrial area. The second group of industries of which there are 14, are mainly metal (including electrical) based industries. Three of these industries are based at Ibeka with the rest being at Zitulele. Group three industries manufacture mainly household and furniture items (including funeral accessories). Twelve of these industries were included in this study with 2 of them being based at Ibeka. The fourth category of industries are mostly food and allied industries (this category includes the manufacture of alcoholic beverages). There are 5 industries in this category with only one of them being situated at Ibeka. The last but one group of industries comprise a mixed bag of industries manufacturing mostly secondary goods. There are only two

of such industries. The last group of industries manufacture building and allied products. There is only one such industry included in this study. Table 6.1 presents the industries and their grouping.

Table 6.1: Major Industrial Groups in Butterworth

Industry Group	Number of Firms
Textile and Leather Industries	
Beier Industries	
Eagle Golf Manufactures	
Eltex (Flashman)	
Franco Industrial Glove	
Franco Safety Glove	
Greiner Industries	
Inglotex	
Paramount Fashions	
Pep Textile Industries	
Prince-Trim	
Sable Clothing	
Sarah Wade	
Transkei Knitting	
Tanery Protea	
Tally	15
Metal Industries	
Autolooms	
Braun Engineering	
Butterworth Metal Industries	
Crisburd	
High Flies	
J & V Engineering	
Labora Steel Works	
M and M Motor Spares	
Pino's Construction	
Preciso	
Universal Metals	
Trico Enamelware	
Transkei Wire Industries	
T & Electronics	14

Household and Furniture Industries

Beier Sharidor	
Calcamite Plastics	
Cane Furniture	
Chet Industries	
Garden and Partio Furniture	
Golden Company	
Imperial Bags	
Ingall Parsons	
New Pine Products	
Siko Manufactures	
Tranquility Rugs	
Taurus Chemicals	12

Food and Allied Industries

Butakem	
Leopard Brewery	
Ohlosson's Cape Brewery	
West Dog Biscuits	
Tanda Milling	5

Secondary Goods Manufacturing Industries

M and S Holdings	
Tramatex	2

Building and Allied Industries

Gcuwa Concrete	1
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Source: Field Survey, 1988.

These characteristics imply that the vast majority of these industries only manufacture goods for final consumption (46 or 94% of the 49 industries). The 49 industries represent an investment of over R127m. Besides High Flies which is 100% Transkei Development Corporation owned and Ingall Parsons in which a 45% share holding is controlled by the Transkei Development Corporation nearly all the other industries are exclusively foreign (non - Transkeian) owned.

6.2.1 Financial Efficiency of the Industries

The financial efficiency of the industries is examined in terms of their ability to generate profit, pay taxes, and dividends. These affect the financial stability of the firms and therefore their ability to transmit developmental impulses through employing labour and paying high wages to it for instance.

The financial statements of the 49 industries for the 1987 financial year indicate that a total profit of R62 037 000 was made by all of them. However, this profit was realised by only 42 of the industries. The rest recorded a total loss of R734 000. The profit made by the companies were however dependent on the large concessions (R14 393 000 in 1987) received. Only the two Breweries were able to record substantial profits without concessions. Thirteen of the industries were able to pay any company taxes in 1987. These paid a total tax of R3 974 000. Similarly only 6 of the firms managed to pay any dividends to their shareholders. A total of R2 452 000 was paid by these industries.

The summary provided above implies that the financial position of the the majority of the industries in Butterworth is very weak. It also supports the conclusions arrived at by Addleson et al., (1985) that industries spring up in Butterworth primarily because attractive concessions can be obtained from there (Chapter five). The weak financial position of the industries would affect their ability to

substantially remunerate labour among other constraints.

6.3 ELEMENTS IN THE MANUFACTURING SYSTEM OF THE INDUSTRIES

The major elements within the manufacturing system of the industries include, the capital investment, turnover, raw material inputs, labour employed, output, and the wages and salaries paid to the staff. These elements either by themselves or in association with others or all of them acting in concert are capable of forming links with the space economy and through such means growth impulses can be spread from the industries to the other spatial units in Transkei. While raw material inputs and the output from the industries create an indirect multiplier, the employment of labour and the wages and salaries paid to it create an induced multiplier.

6.4 RELATIONSHIPS AMONG THE ELEMENTS

Particular relationships can be discerned among the elements of the manufacturing system of the industries in Butterworth. An examination of the relationships is deemed important as it would reveal the impact that each of the elements have on the other. The nature of the relationships will also tend to indicate the propulsive power of the industries in Butterworth in the generation of regional growth. This is crucial to the effective functioning of Butterworth as a growth centre. Strong positive relationships between the elements would imply that the elements constitute an important means of propulsion for the development of the region. In this connection simple correlation analysis is utilised to examine the relationships

between the elements of the manufacturing system.

One of the simplest of the correlation analysis is the Pearson's Product Moment Correlation analysis (r). The product moment correlation analysis is basically interested in bi-variate relationships, especially the degree of linear association between a pair of variables. It is expressed as the ratio of the covariance to the square root of the product of their variances as shown by the formula below:

$$R = \frac{\sum xy - (\sum x)(\sum y)}{\sqrt{[\sum x^2 - (\sum x)^2][\sum y^2 - (\sum y)^2]}}$$

where: R_{xy} = the correlation coefficient of the Xth and the Yth variables.

The correlation co-efficient varies from +1.0 indicating a perfect positive correlation, through 0 for no relationship to -1.0 indicating a perfect negative relationship. In between the ranges are various co-efficients indicating various degrees of relationships. Most correlation coefficients are however statistically significant at a level which must not be greater than 0.05 (Glass, and Stanley, 1970).

One useful feature of correlation analysis is that the correlation co-efficients can be shown in a correlation matrix so that the largest coefficients can be identified. The correlation matrix of the selected elements of the manufacturing system will indicate the strength and direction of relationship between the elements. This technique is referred to as cluster analysis (Bailey, 1973). The

technique is employed because of redundancy in the variables and the need to isolate "basic dimensions" to describe the general pattern characteristic of the variables (Stephenson, 1965).

Table 6.2 below presents a matrix of correlation coefficients showing the degree of relationships between the elements of the manufacturing system of Butterworth. It is computed from the values of the elements for the 1987 financial year for all the 49 selected industries.

Table 6.2: Correlation Matrix of the Elements in the Manufacturing System of Butterworth.

	Raw	Products	Labour	Wages	Invest	Turnover
Raw	1.00					
Products	.755	1.00				
Labour	.492	.652	1.00			
Wages	.613	.854	.922	1.00		
Invest	.406	.563	.869	.495	1.00	
Turnover	.824	.887	.584	.772	.76	1.00

Source: University of Transkei Computer Centre, 1988.

The table reveals that all the selected elements in the manufacturing system of Butterworth record positive correlations with each of the other elements. For instance, the value of all the products from the industries is positively correlated to the value of all raw materials utilised in the production process. Very high positive correlations are also recorded between turnover and raw materials purchases, turnover and the value of the products from the industries, wages and labour, and between wages and products. All the correlations are also highly significant in the very least at the 95% confidence level.

The correlations imply for instance that the more raw materials bought by the industries, the more the labour employed in the industries and the more capital investment pumped into the industries. These conclusion means that if these elements are derived from one region that region would record growth in raw material output for instance for every cent of capital investment.

When a substantial proportion of these relationships are fostered within the same spatial unit, the elements are capable of creating multipliers which result in agglomeration economies and the fuelling of growth in the economy. In this light therefore the correlation analysis lends support to the contention that the modern manufacturing unit of Butterworth constitutes a key propulsive unit through which development impulses can filter to the less developed regions of Butterworth and other linked regions (hypothesis three in chapter two, page 50).

However if a greater percentage of the relationships are fostered with another spatial unit, as for example Butterworth industries relying on industries elsewhere to supply a greater part of their inputs and exporting their products to other regions, the multiplier is lost to Butterworth and so are the agglomerative economies.

6.5 AGGLOMERATION ECONOMIES

To A. Weber, "an agglomerative factor ... is an advantage or cheapening of product or marketing which results from the fact that production is carried on to some considerable extent at one place" (Weber, 1956, p. 126). Three possible sources of agglomeration economies exist. These are economies of scale, economies of industrial localisation and economies of urbanisation (Isard, 1956, p. 173-188). The sum effect of these agglomeration economies is to make industries more efficient by lowering their cost of production.

Economies of scale arise from the growth in the size of the firm. Economies of industrial localisation refer to the growth of the industry through the number and function of firms. On the other hand economies of urbanisation arise from the concentration of economic activity in a given area. Three most important functions emerge from the economies of urbanisation. There is in the first place the provision of services like banking, repair workshops etc, and utility services like water. Secondly, there is the provision of a market for the products of the firm. Thirdly, there is the combination of the first two functions which then serve as an attraction for the setting up of shopping facilities, entertainment, health and education facilities and housing. These in turn attract more industries and growth becomes self reinforcing. All these agglomeration economies are possible from the concentration of industries in a given area. Nichols, has noted "... the factor of transport cost minimization

as the key motivation for initial agglomeration with further agglomeration related to the build-up of external economies" (Nichols, 1969, p. 27).

Economies of agglomeration are often reflected in higher returns to the firms enjoying them. This in turn will reflect a positive differential growth rate of the industries in that place in comparison with industries in other places. Due to the importance of the agglomerative factor it is intended to identify the industries that enjoy agglomerative economies in Butterworth.

6.5.1 Market Potential

One method of measuring the economies of agglomeration is to relate the growth in industrial employment to the growth in population of either a particular region or the nation as a whole. The assumption in this technique is that a growth centre should be able to absorb surplus rural population from the land and help consolidate and enlarge land holdings. Rural agriculture will thus be made more efficient. An urban market will also help to stimulate rural agricultural production.

The method employed in this study to measure agglomeration economies is similar to the one used by Matyityahus Marcus in his analysis of agglomeration economies in New Jersey - New York City Region (Marcus, 1965, pp 279 - 284). Industries enjoying agglomeration economies expand in relation to the demand or expansion of the local market.

Methods often used to compute market potentials however usually take account of nearby population centres or some income measure with distance serving as weights (Isard, 1960, pp. 512-566). For the lack of data on any income measure and for computational simplicity, the rate of growth of population of the various districts in Transkei is considered a measure of the market potential for products manufactured by the firms in Butterworth. In this connection it is being assumed that all districts in the country will participate each in proportion to its market potential, in the growth of the industries in Butterworth. Thus for each of the industries in Butterworth growth in employment is compared to the growth rate of population in the various districts in Transkei.

The problem with this methodology is that the expansion of firms need not proceed with the growth in the market. It may either follow or precede it. It is therefore not necessary to expect market-induced growth to be as smooth as the market potential growth. To overcome these constraints the analysis is based on a long period (from 1980 - 1986). The selected time period coincides with the last two censuses conducted in Transkei.

The analysis presented concerns only industries in Butterworth which utilise the local market in Transkei for the sale of all or more than half of their products. Industries selling some part of their products in Transkei appear on Table 6.3 on page 172.

Table 6.3: Industries and Value (in R'000s) of Products Sold in Transkei - 1987.

Industries	Value of Output	Value Sold in Transkei	% Sold in Transkei
Butterworth			
Metal Ind.	2947	2358	80
Crisburd	3600	3000	83
Leopard			
Brewery	2474	1700	69
Tanda Milling	38520	37749	98
Taurus			
Chemicals	304	254	84
Transkei			
Wire Ind.	12985	6055	47
Labora			
Steel Works	520	320	62
Ohlssons			
Breweries	48949	48949	100
Preciso.	1743	697	40
J & V			
Engineering	391	336	86
Autolooms	1353	3	0.22
Beier Industries	7400	800	11
Beier Sharidor	4400	400	9
Calcamite Plastics	94	3	3.2
Franco Industrial			
Glove	5199	520	10
Franco Safety			
Glove	3576	357	10
Gcuwa Concrete	107	107	100
High Flies	61	3	5
Imperial Bags	302	122	40
Ingall Parsons	600	400	67
Paramount Fashions	42	42	100
Prince-Trim	500	450	90
Sarah Wade	391	391	100
Siko Manufacturers	318	255	80
Tanery Protea	9053	740	8
Tranquility Rugs	170	50	29
Transkei Knitting	2760	210	8
Trico Enamelware	2476	248	10
Universal Metals	4951	990	20
West's Dog			
Biscuits	3928	106	3
Total	160114	107615	

Source: Field Survey, 1988.

From this list the industries selling more than half of their produce in Transkei was selected. However, this technique raises one major problem, the population of a region may be large but the taste of the people and therefore demand for a particular product may be very minimal. Similarly, a high growth rate in employment alone could be misleading in a region where substantial part of the wage bill is paid by the government in the form of concessions (as indicated in Chapter Five). Another difficulty with this methodology is the stability of industrial establishments. New industries are established at various time periods while some industries fold up at other times. The analysis will therefore only include the relatively enduring firms (ie those that have been established within the six year period). These constraints limit the usefulness of this technique but data difficulties preclude a more refined assessment of procedure. It is thus only a crude measure of market potential.

Based on the above assumptions the agglomerative factor in Butterworth is computed by calculating the actual growth, that is growth in employment, for the various industries in Butterworth. Thereafter, the population growth rate which could be ascribed to growth in the market potential for the products from the industries in Butterworth is determined on the basis of the twenty nine districts in Transkei. Thirdly, the market growth rate is subtracted from the growth rate to obtain either a negative or positive residual. A firm enjoys agglomeration economies when it shows a positive residual for the

whole nation and fifty percent of the districts for the period under consideration.

6.5.2 Results of the Analysis

The results of the analysis are presented in tables 6.4 and 6.5 below.

TABLE 6.4

POPULATION 1980 AND 1985
AVERAGE INCREASE AND AVERAGE GROWTH RATE BY DISTRICT

DISTRICT	P O P U L A T I O N		1980	1985
	1980	1985	INCREASE %	AV. RATE OF GROWTH
Bizana	139639	140640	.72	0.1
Cacadu	161644	154999	-4.11	-0.7
Centane	75900	81253	7.1	1.2
Cofimvaba	86886	92133	6.04	1
Engcobo	126486	145131	14.74	2.5
Gatyana	93445	97384	4.22	0.7
Gcuwa	75494	75428	-0.087	-0.2
Herschel	108385	113355	4.586	0.8
Idutywa	68241	77253	13.21	2.2
Kwabhaca	95543	105918	10.86	1.8
Libode	84216	91921	9.15	1.5
Lusikisiki	169692	168412	-0.75	-0.1
Matatiele	112947	129870	14.98	2.5
Maxesibeni	52475	60934	16.12	2.7
Mt. Fletcher	92030	102154	11	1.8
Mqanduli	89152	112181	25.83	4.3
Ngqeleni	104540	111287	6.45	1.1
Nqamakwe	73011	83090	13.81	2.3
Qumbu	85408	94369	10.49	1.8
Siphageni	86671	78672	-9.23	-1.5
Tabankulu	88146	88113	-0.37	-0.0
Tsolo	84188	83935	-0.3	-0.1
Tsomo	53632	70374	31.22	5.2
Umtata	147887	215216	45.53	7.6
Umzimkulu	117988	123520	4.69	0.8
Umzimvubu	45296	45822	1.16	0.2
Xalanga	48180	46403	-3.69	-0.6
Xhora	55988	57499	2.70	0.5
All Districts	2623110	2876122	9.65	1.6

Sources: Census Figures, 1980, 1985. Annual Report, Central Statistical Office, 1987/88.

TABLE 6.5

BUTTERWORTH INDUSTRIES
DIFFERENTIAL GROWTH RATE IN RELATION
TO MARKET GROWTH RATE IN % 1980 - 1986

INDUSTRIES	GROWTH RATE	MARKET RESIDUALS					
		Bizana	Cacadu	Centane	Cofimvaba	Engcobo	Gatyana
Butterworth							
Metal Ind.	20.4	20.4	20.5	21.6	21.4	22.9	21.1
Crisburd	5.9	5.8	6.6	4.7	4.9	3.4	5.2
Leopard							
Brewery	8.33	7.3	9.0	7.1	7.3	5.8	7.6
Tanda							
Milling	-1.79	-1.9	-1.1	-3.0	-2.8	-4.3	-1.8
Taurus							
Chemicals	3.55	3.5	4.3	2.4	2.6	1.1	2.9
Transkei							
Wire Ind.	11.8	11.7	12.5	10.6	10.8	9.3	11.1
Labora							
Steel Works	1.11	1.0	1.8	-0.1	0.1	-1.4	0.4
Ohlssons							
Breweries	10.12	10.0	10.8	8.9	9.1	7.6	10.3
Preciso.	32	31.9	32.7	30.3	31.0	29.5	31.3
J & V							
Engineering	14.29	14.2	15.0	13.1	13.3	11.8	13.6

Table 6.5 Continued

INDUSTRIES	GROWTH RATE	MARKET RESIDUALS					
		Gcuwa	Herschel	Idutywa	Kwabhaca	Libode	Lusikisiki
Butterworth							
Metal Ind.	20.4	20.6	19.6	18.2	18.6	18.9	20.5
Crisburd	5.9	6.1	5.1	3.7	4.1	4.4	6.0
Leopard							
Brewery	8.33	8.4	7.5	6.1	6.5	6.8	8.4
Tanda							
Milling	-1.79	1.6	-2.6	1.4	-3.6	-3.6	1.7
Taurus							
Chemicals	3.55	3.8	2.8	1.4	1.8	2.1	3.7
Transkei							
Wire Ind.	11.8	12.0	11.0	9.6	10.3	11.9	9.3
Labora							
Steel Works	1.11	1.3	.3	-1.1	-0.7	-0.4	1.2
Ohlssons							
Breweries	10.12	10.3	9.3	7.9	8.3	8.6	10.2
Preciso.	32	32.2	31.2	29.8	30.2	30.5	32.1
J & V							
Engineering	14.29	14.5	13.5	12.1	12.5	12.8	14.4

Table 6.5 Continued

INDUSTRIES	GROWTH RATE	MARKET RESIDUALS				
		Matatiele	Maxesibeni	Mt. Fletcher	Mqanduli	Nggeleni
Butterworth						
Metal Ind.	20.41	17.9	17.7	18.6	16.1	19.3
Crisburd	5.9	3.4	3.2	4.1	1.6	4.8
Leopard						
Brewery	8.33	5.8	5.6	6.5	4.0	7.2
Tanda						
Milling	-1.79	-4.3	4.5	-3.6	-6.1	-2.9
Taurus						
Chemicals	3.55	1.1	0.9	1.8	-0.8	2.5
Transkei						
Wire Ind.	11.8	9.3	9.1	10.0	7.5	10.7
Labora						
Steel Works	1.11	-1.4	-1.6	-0.7	-3.2	0.1
Ohlssons						
Breweries	10.12	7.6	8.3	5.8	8.3	7.8
Preciso.	32	29.5	29.3	30.2	27.7	30.9
J & V						
Engineering	14.29	11.8	11.6	12.5	10.0	13.2

Table 6.5 Continued

INDUSTRIES	GROWTH RATE	MARKET RESIDUALS					
		Nqamakwe	Qumbu	Siphageni	Tabankulu	Tsolo	Tsomo
Butterworth							
Metal Ind.	20.41	18.1	18.6	21.9	20.4	20.5	15.2
Crisburd	5.9	3.6	4.1	7.4	5.9	6.0	0.7
Leopard							
Brewery	8.33	6.0	4.2	9.8	8.3	8.4	3.1
Tanda							
Milling	-1.79	-4.1	-3.6	-0.3	-1.8	-1.7	-7.0
Taurus							
Chemicals	3.55	1.3	1.8	5.1	3.6	3.7	-1.7
Transkei							
Wire Ind.	11.8	9.5	10	13.3	11.8	11.9	6.6
Labora							
Steel Works	1.11	-1.2	-0.7	2.6	1.1	1.2	-4.1
Ohlssons							
Breweries	10.12	7.8	8.3	11.6	10.1	10.2	4.9
Preciso.	32	29.7	30.2	33.5	32.0	32.1	26.8
J & V							
Engineering	14.29	12.0	12.5	15.8	14.3	14.4	9.1

Table 6.5 Continued

INDUSTRIES	GROWTH RATE	MARKET RESIDUALS					
		Umtata	Umzimkulu	Umzimvubu	Xalanga	Xhora	All Dist.
Butterworth							
Metal Ind.	20.41	12.8	19.6	20.2	21.0	20.0	18.8
Crisburd	5.9	-1.7	5.1	5.7	6.5	5.4	4.3
Leopard							
Brewery	8.33	2.4	7.5	8.1	8.9	7.8	6.7
Tanda							
Milling	-1.79	-9.4	-2.6	-0.6	-1.2	-2.3	-3.4
Taurus							
Chemicals	3.55	-4.1	2.8	3.4	4.2	3.1	2.0
Transkei							
Wire Ind.	11.8	4.2	11.0	11.6	12.4	11.3	10.2
Labora							
Steel Works	1.11	-6.5	0.3	0.9	1.7	0.6	0.5
Ohlssons							
Breweries	10.12	2.52	9.3	10.0	10.7	9.6	8.5
Preciso.	32	24.4	31.2	31.8	32.6	31.5	30.4
J & V							
Engineering	14.29	6.7	13.5	14.1	14.9	13.8	12.7

Source Field Work, 1988.

6.5.1.1 Interpretation of the Results

The above tables reveal that besides Tanda Milling and Labora Steel Works all the other industries enjoy substantial agglomeration economies in terms of market potential. This finding indicates that industries locating in Butterworth should aim at the local market since they stand to gain substantial agglomeration economies by so doing. Field investigations reveal that industries registering positive residuals derive agglomerative economies mostly from their monopoly position and from the expansion of the local market. This is especially true of the two breweries (Ohlssons and Leopard). They have expanded the scale of their operations with the expansion in the local beer market. Butterworth Metal Industries and Preciso also

manufacture products which are in demand in both rural and urban areas of Transkei. This explains why these two industries increased their turnover by over 100% during the period under review.

Those industries registering negative market residuals are experiencing marketing difficulties (Tanda Milling and Labora Steel Works) as a result of competition. This is especially true of Tanda Milling. They were established to take advantage of the internal market for mealie meal. Within the free market principles underlying the Transkei economy however, other industries (especially Ciskei Milling) have found it to their advantage to expand into the same market by offering increased and long term credits to local traders.

While many of the companies are enjoying agglomerative economies the size of the market residual is not the same. Districts like Tsomo Nqamakwe, and Idutywa (which are closer to Butterworth) record lower market residuals than districts like Cacadu and Tabankulu. In some of these cases therefore the conclusion seems to be that areas further away from Butterworth do have a greater impact on the expansion of the industries in Butterworth than districts that are close to it. In view of the limitations of the technique applied however, there is a need to examine further the effect of distance on industrial employment in Butterworth before any conclusions are drawn.

6.5.2 Industrial Interdependence and Linkages.

Another important method of measuring the agglomerative factor created by the industries in Butterworth is to examine the extent of inter-industry linkages among the firms. The two major types of inter-industry linkages namely: forward linkages and backward linkages (as explained in chapter 3) are to be considered in this analysis. Through an analysis of the linkages one can assess an industry's potential in triggering investments in related industries through forward and backward linkages. It is these linkages that create the indirect multiplier. This analysis also has important implications for the effectiveness of Butterworth as a growth centre. Investments in industries which generate local linkages offer the best chance of sustaining economic growth within Butterworth through induced investments in interdependent industries. This in turn could stimulate the efficient functioning of the growth centre through the stimulation of the various linkage mechanisms.

6.5.2.1 Input - Output Analysis

The input-output table offers a means of examining the linkages among the selected industries and the leakages from it. Table 6.6 represents an input-output table of industries buying products from other industries in Butterworth in 1987. Each row on the table (from left to right) shows the output sold by each industry to another. Each column (reading from top to bottom) shows the purchases made by each firm along the top of the table from the firms along the left

hand side. Exports and imports refer to the value of goods sent outside Butterworth or bought from outside the town.

Table 6.6: INPUT - OUTPUT TABLE AMONG THE INDUSTRIES IN BUTTERWORTH - 1987

INDUSTRIES	TM	OB	LB	TP	FIG	EG	EXPORTS
	(Purchases in thousands of rands)						
Tanda Milling (TM)	-	1 100	350	-	-	-	27170
Ohlsson's Brewery (OB)	1 100	-	-	-	-	-	37949
Leopard Breweries (LB)	350	-	-	-	-	-	2124
Tanery Protea (TP)	-	-	-	-	-	2.5	9050.5
Franco Industrial Glove (FIG)	-	-	-	737	-	-	4462
Eagle Golf (EG)	-	-	-	2.5	-	-	661.5
Import	27170	37949	2124	8313	4462	661.5	

Source: Field Survey, 1988.

The few industries on the table as compared to the total number of industries in Butterworth imply that linkages among the industries in Butterworth is very weak. High values of imports and exports also means that most of the industries in Butterworth operate as independent economic entities having nothing to do with each other. Tanda Milling established in 1979 is the major industry that seems to take advantage of possible backward linkages in Butterworth. They supplied maize grits to Ohlssons Cape Brewery to the tune of R1.1million in 1987. In the same year they also supplied maize to the value of R350 000 to the Leopard Brewery. Another company enjoying substantial linkages with the industries in Butterworth is Tannery Protea. They sold wet blue leather to Franco Industrial Glove valued at R737, 455 and tanned leather to Eagle Golf valued at R2 562 in 1987.

From the input-output table the assumption can be made that the level of input is a fixed linear function of the level of output, the required input per unit value of output can therefore be derived for each industry by dividing the value of the purchases by the output of each industrial firm. This will yield ratios (technical co-efficients) showing the input of each industry in relation to the gross output of that industry. This besides identifying the key industries is also capable of revealing the extent of leakages in the system. As a matrix the technical co-efficients can also be used to predict output, employment and income in future (Harvey and Taylor, 1970). Table 6.7 presents a technical co-efficient matrix for Table 6.6.

Table 6.7: Technical Co-efficient Matrix for Table 6.6

INDUSTRIES	TM	OB	LB	TP	FIG	EG	EXPORTS
	(Purchases in thousands of rands)						
Tanda Milling (TM)	0.0	0.29	0.01	0.0	0.0	0.0	0.71
Ohlsson's Brewery (OB)	0.23	0.0	0.0	0.0	0.0	0.0	0.78
Leopard Breweries (LB)	0.14	0.0	0.0	0.0	0.0	0.0	0.86
Tanery Protea (TP)	0.0	0.0	0.0	0.0	0.0	0.003	0.997
Franco Industrial Glove (FIG)	0.0	0.0	0.0	0.14	0.0	0.0	0.86
Eagle Golf (EG)	0.0	0.0	0.0	0.004	0.0	0.0	0.996
Imports	0.71	0.78	0.86	0.92	0.86	.0	0.996

Source: Table 6.6.

The co-efficients on the table indicate that in terms of inter-industry linkages imports and exports (interpreted as out of Butterworth) characterises these industries. However industries like

Ohlsson's Brewery can be considered crucial to Butterworth as a growth pole. This is because any change in its output is capable of affecting at least one other industry (Tanda Milling). In the likely possibility of Ohlsson's Brewery increasing output by another R2million (they are at present expanding the factory) the direct round of first effects will be the purchase of R460 000 ($0.23 \times \text{R2million}$) worth of products from Tanda Milling. Since the correlation matrix (Table 6.2) has indicated a high positive relationship between the elements of the manufacturing system, one can expect a chain reaction of multipliers resulting from the purchase.

The absence of linkage mechanisms among the industries in Butterworth on the other hand signals high costs of production. The latter could have serious implication for the efficient functioning of the growth centre. Several reasons may be adduced to explain the lack of linkages among the industries in Butterworth. As indicated earlier on, most of the industries in Butterworth are foreign owned. In many cases they form a part of a larger company that is vertically integrated. In such cases their raw material requirements are contracted to be supplied by one of the several plants within the group irrespective of whether local sources for the same raw materials is available or not. Thus Beier industries for example, manufactures shoes in Butterworth from raw materials supplied by another plant of the same company based in Pinetown even though similar raw materials could be secured from the local based tanery (Tanery Protea). In some other cases the managers of the industries in Butterworth have no

authority to purchase raw materials. They must just requisition their requirements which are met by the head office of the company which may be based in Johannesburg for instance. Under such circumstances the source of purchase of raw materials is not necessarily the cheapest nor the nearest source. The vast majority of the industries also manufacture goods that are for final consumption only. Under such circumstances products from one industry have no use in another industry.

6.6 THE RELATIONSHIP BETWEEN DISTANCE AND THE ELEMENTS OF THE MANUFACTURING SYSTEM

The importance of the elements in the manufacturing system in the generation of regional economic growth and development has been demonstrated in many studies (Clark, 1980; Hawkins and Associates, 1980; Dewar, et al., 1984). However, the importance of the elements may be felt within the immediate vicinity of the manufacturing industries or it may be felt further away, implying that leakages occur (Nichols, 1969). Table 6.7 has revealed that most of the industries in Butterworth import their raw materials from outside of Butterworth and sell their products also outside of the town. The conclusion therefore seems to emerge that distance plays an important part in the functioning of the industries. It is however necessary that this fact be assessed further if one is to arrive at a satisfactory conclusion and explanation of the situation. Through such a process it is hoped to test the hypothesis that as distance increases the impact of the industries in Butterworth weakens. The

analysis in this section however is concentrated on only two of the elements in the manufacturing system :raw material inputs and the output from the industries.

6.6.1 Relationship Between Distance and the Origin of Raw Materials

Raw material purchases of the 49 industries in Butterworth in 1987 totalled R119 904 000. Of this amount R105 537 000 or over 88% was bought from the regional economy (Republic of South Africa and Transkei). A little more than R14m was imported from outside the regional economy.

To assess the effect of distance on the origin of the raw material imports of the industries in Butterworth the distances to the sources of raw materials and the value (1987) of the raw material purchases from the specified distances was utilised as the basis. The distances are however approximations in the sense that raw materials from say Caledon are added to that from Cape Town and a single distance (that is the distance to the latter) used. Similarly raw materials from Uitenhage are added to that of Port Elizabeth and the distance calculated to the latter. In general raw materials from the PWV are treated as if they are from Johannesburg.

A regression analysis in which the distances to the sources of raw material inputs form the independent variable and the value of such raw materials from the said distances the dependent variable is used to test the sensitivity of the industries to distance. In this

connection the regression equation $Y = a + bx$ is employed in this and all other regression analysis that appear in various sections of this research. In a situation of the value of raw materials decreasing with increasing distance the regression coefficient will be negative (Taylor, 1977, p. 225). Positive coefficients would imply that the fourth hypothesis (Chapter 2, p. 50) cannot be accepted.

Table 6.8: Regression Analysis for Factor One (Sources of Raw Materials)

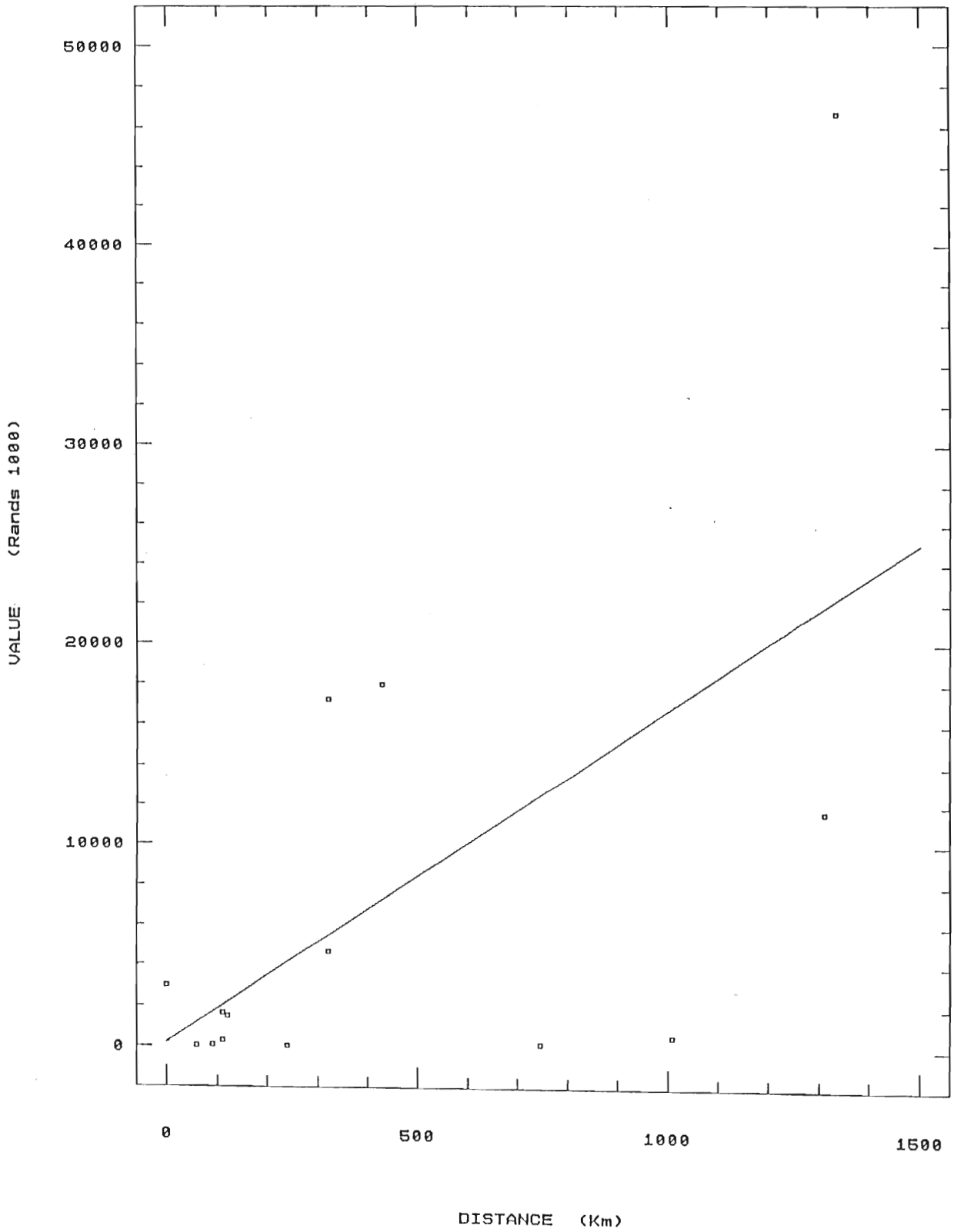
Parameter	Estimate	Standard Error	T Value	Probability Level
Intercept	217.631	4044.71	0.0538064	.95797
Slope	16.5403	6.41182	2.57965	.02411

Source: Computer Centre, Rhodes University.

Figure 6.1 represents the regression line of the regression equation for factor one (sources of raw materials).

In relation to factor one (sources of raw materials) the regression line is positive and indicate that the sensitivity of the industries in Butterworth to distance is inverse. This means that their impact (in terms of raw material purchases) increases with distance from the town. With respect to this factor therefore it is noted that this finding is contrary to hypothesis four in Chapter 2. The analysis of variance appear as Appendix E.

FIGURE 6.1 : REGRESSION OF FACTOR ONE ON DISTANCE



6.5.2 The Relationship Between Distance and the Destination of Finished Products.

A similar procedure is also used to assess the sensitivity of the industries (in terms of the distribution of manufactured products) to distance.

A regression analysis of factor two (destinations of finished products) was also computed to establish the relationship between distance and factor two. As for the previous analysis a positive coefficient implies that the distances to the destinations of finished products increases with distance from Butterworth. In that respect therefore hypothesis four in Chapter Two (p. 50) will be rejected.

In relation to factor two (destinations of finished products) the regression analysis appear as table 6.9.

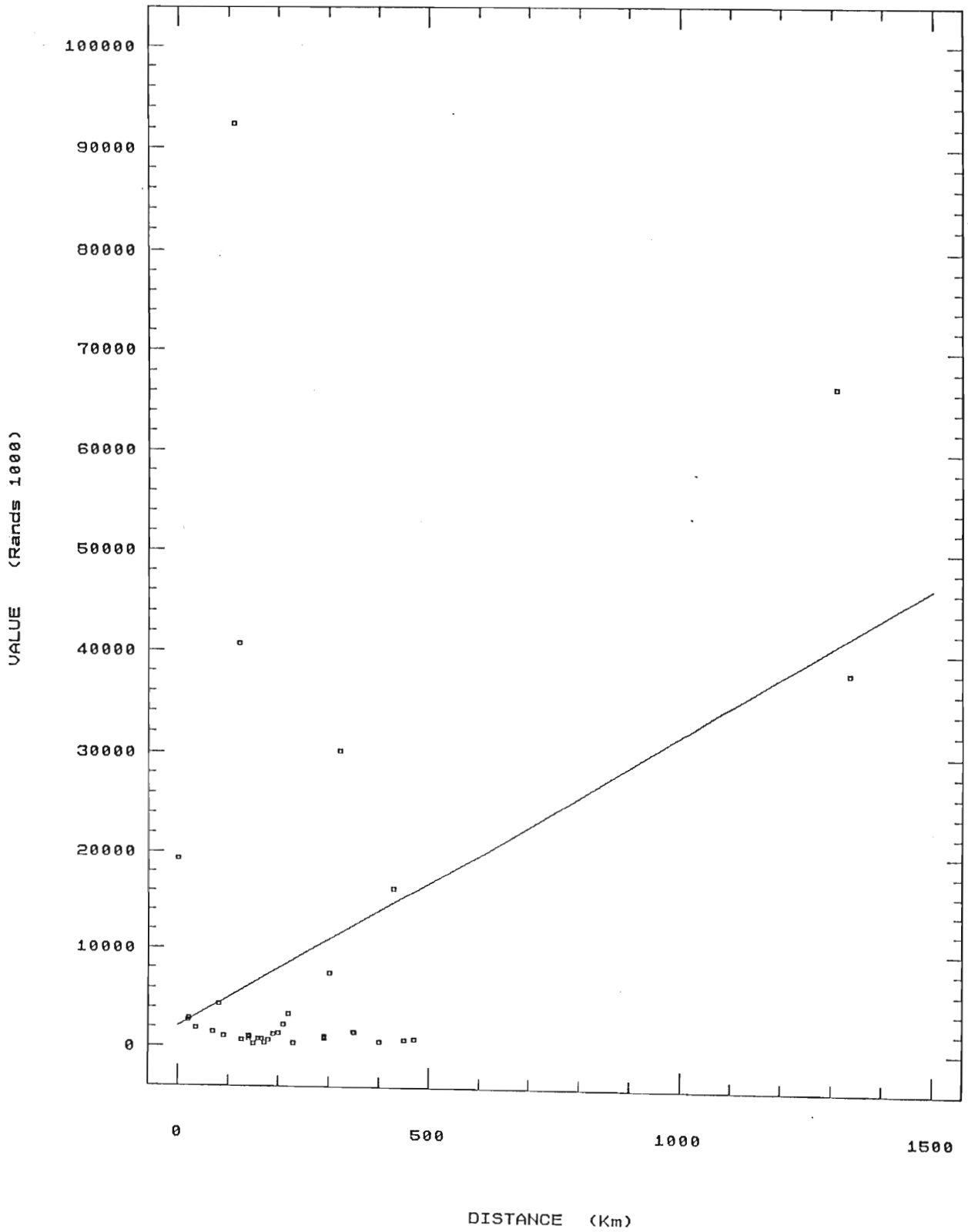
Table 6.9: Regression Analysis for Factor Two (Destinations of Finished Products)

Parameter	Estimate	Standard Error	T Value	Probability Level
Intercept	2114.84	4329.38	0.488486	.62844
Slope	29.6054	11.0638	2.67587	.01151

Source: Computer Centre, Rhodes University.

The regression line appears as figure 6.2 with the variance analysis appearing as Appendix E.

FIGURE 6.2 : REGRESSION OF FACTOR TWO ON DISTANCE



The regression line indicates that industries in Butterworth are distance sensitive. It indicates that as the distance increases so does the value of goods sold. In terms of this finding therefore hypothesis four in Chapter 2 cannot be accepted. However, the explanatory value is small (only 18%). From the analysis of the last two factors, it can be deduced that, in general, industries in Butterworth obtain more of their raw materials and sell more of their finished products with increasing distances from Butterworth.

While the above analysis was based on distances it is impossible to tell from those distances which areas in regional terms benefit from the indirect multiplier which is created as a result of the promotion of industrial activity in Butterworth. This is important if the underlying factors to the observed pattern is to be properly explained. It is therefore found necessary to examine inter-regional linkages in terms of these two elements. Five regional scales corresponding to the Transkei, and the various provinces in the Republic of South Africa, are proposed.

6.7 INTER-REGIONAL LINKAGES THROUGH RAW MATERIAL IMPORTS

Table 6.10 presents a summary of the total of imports of raw materials of the selected industries from Transkei, Natal, Cape, Orange Free State and Transvaal.

Table 6.10 : Inter-Regional Linkages in the Import of Raw Materials

REGION	AMOUNT (in R'000'S)	% OF TOTAL RAW MATERIALS USED
Transkei	4633	4
Natal	21928	18.29
Cape Province	32182	26.84
Orange Free State	225	0.18
Transvaal	46612	38.87
Elsewhere	14324	12
Total	119904	100

Source: Field Survey, 1988

This table indicates that the Transvaal in terms of raw material imports supplies nearly 40% of the requirements of industries in Butterworth. The Cape Province and Natal supplies about 27% and 18% of the requirements respectively while 12% of the raw material requirements are imported from elsewhere (ie outside the regional economy). This implies that in terms of raw material imports the Transvaal region receives a larger percentage share of the indirect multiplier that is created as a result of industrial developments in Butterworth. The Transvaal is however much further than any of the other regions from Butterworth. This explains why the sensitivity of the industries in Butterworth with respect to factor one is inverse. It is of note that the PWV area in the Transvaal is the region that supplies far more of the raw material requirements of the industries in Butterworth. This is not surprising as the Transvaal and particularly the PWV presently constitutes the most industrialised area in Southern Africa. The availability of many large scale firms in that area means that they are better able to supply the requirements of all the industries. A breakdown of these

figures on a sectoral basis is provided below. It is hoped that from an analysis of these figures industries that are better suited for Butterworth's role as a growth point can be identified.

6.7.1 Textile and Leather Industries

Of the total raw material requirements of the 49 selected industries textile and leather industries consumed 38% or a total amount of R45 584 000 in 1987. This is a very significant amount of the total raw material requirements. Table 6.11 presents a summary of the raw material imports of these firms from the various regions in Southern African.

Table 6.11 : Raw Material Imports of Textile and Leather Industries In Butterworth - 1987.

REGION	VALUE (in R 000s)	% of Total
Transkei	2161	4.74
Transvaal	16587	36.39
Natal	8583	18.83
Cape Province	16345	35.86
Orange Free State	15	0.03
Elsewhere	1893	4.15
Total	45584	100

Source: Field Survey, 1988.

The table reveals that basic raw materials for these industries are imported from mainly the Transvaal and the Cape Province. While the majority of imports are from the Transvaal the difference in imports from the Transvaal and the Cape Province is small. The table also reveals that this category of industries does not depend to a great extent on imports from outside the regional economy. The percentage share of imports from outside the region is less than 2% of the total

of 22% of imported raw materials used by all the selected industries.

6.7.2 Food and Allied Industries

Food and allied industries in Butterworth consumed the second largest proportion (33.49%) of the raw material imports of the selected industries. An analysis of the interregional linkages between this group of industries is therefore considered necessary. Table 6.12 below summarises the raw material imports from the various regions of this group of industries.

Table 6.12 : Raw Material Imports of the Food and Allied Industries In Butterworth - 1987.

Region	Value of Imports (in R 000s)	% of Total Imports
Transkei	2181	5
Transvaal	8899	22
Natal	10100	25
Cape Province	12725	32
Orange Free State	198	1
Others	6047	15
Total	40150	100

Field Survey, 1988.

From this table it can be deduced that the Cape Province supplies more of the raw material requirements of industries in this category (32%). The Natal region and the Transvaal supplies 25% and 22% respectively. Imports from outside the Southern African region are a significant 15% of total imports or about 5% of the 22% of total imports. A percentage share of 5% supplied from Transkei is, though small, considered significant in view of the meagre figures recorded for the other industries. In terms of imports therefore this group of industries records a better multiplier nearer to Butterworth than the

other groups.

6.7.3 Electrical, Metal and Allied Industries

The group of industries in this category consumed 19% of the total raw materials used by the 49 industries. In regional terms, Table 6.13 below indicates that most of the raw materials are imported from the Transvaal.

Table 6.13 : Raw Material Imports of Electrical, Metal and Allied Industries in Butterworth - 1987

REGION	VALUE OF IMPORTS (in R 000s)	% OF TOTAL IMPORTS
Transkei	23	0.10
Transvaal	16652	71.56
Natal	200	0.86
Cape	1850	7.95
Orange Free State	12	0.05
Elsewhere	4533	19.48
Total	23270	100

Source: Field Survey, 1988.

The above table indicate that the large volume of imports from the Transvaal is mainly attributable to the metal group of industries. They import nearly 72% of their raw material requirements from the Transvaal. Imports from outside the Southern African region is also a significant 19.48%. This works out at about 4% of the 22% of total raw material imports from elsewhere. The metal industries also import very little of their imports from the Transkei. The location of steel plants and other metal industries in the Transvaal explains why industries in this group depend largely on the region for their supplies.

6.7.5 Household & Furniture Industries, Building and Allied Industries, and Industries Manufacturing Secondary Goods.

The other category of industries are household and furniture industries which use about 8% of total raw materials, a mixed bag of industries manufacturing secondary goods which used 1.11% and building industries which utilised 0.08% of the total raw material requirements. The table below summarises their raw material imports from the various regions.

Table 6.14: Raw material Imports from Various Regions of the Other Industries in Butterworth - 1987.

REGIONS	INDUSTRIAL GROUPS					
	Household, Furniture and allied Industries		Secondary Goods Industries		Building Industries	
	Value	%	Value	%	Value	%
Transkei	144	1.52	30	2.26	94	100
Transvaal	4354	45.94	120	9.02	0	0
Natal	2965	31.29	80	6.01	0	0
Cape	1212	12.79	50	3.76	0	0
Orange						
Free State	0	0	0	0	0	0
Elsewhere	801	8.46	1050	78.95	0	0
Total	9476	100.	1330	100	94	100

Source: Field Survey, 1988

From the table it can be deduced that only the building industry buys all its raw material requirements from the Transkei. Household and Furniture industries however import a greater part of their raw material requirements from the Transvaal, Natal and the Cape Provinces. Building and allied industries therefore represent an important means of fostering links with the local economy. From the

table it can also be deduced that industries manufacturing secondary goods rely exclusively on imports from outside the Southern African Region for their requirements.

6.7.6 Implications of the Pattern of Raw Materials Imports

The above analysis indicates that of the six categories of industries building and allied, food and allied and textile and leather industries are the ones buying significant proportions of their raw material requirements from Transkei. Food and allied industries also buy the major part of their raw material from the Cape Province. These groups of industries in terms of raw materials purchases are considered better in fostering links with the local space economy. These industries however only utilise mostly agricultural raw materials. The conclusion therefore is that industries dependent on agricultural raw materials are better in fostering links with the local space economy (the importance of Ohlsson's Brewery is an example). The vast majority of the other industries however buy their raw materials from the Transvaal and therefore record negative impacts on the local economy. Industries manufacturing secondary goods however, have their impact (in terms of raw material requirements) beyond the Southern African region.

6.8 INTER-REGIONAL LINKAGES : PRODUCTS

A summary of the interregional linkages with respect to the distribution of the manufactured products from the industries appears on Table 6.15 on page 194.

Table 6.15 : Inter-Regional Linkages - Products, 1987

REGIONS	VALUE OF PRODUCTS R 000s	% OF TOTAL PRODUCTS
Transkei	107123	29.3
Transvaal	38044	10.4
Orange Free State	0	0
Natal	39190	10.7
Cape Province	173134	47.3
Elsewhere	8333	2.3
Total	365824	100.00

Source: Field Survey, 1988

The summary provided above indicates that nearly half of all the products from the industries are sold in the Cape province. The percentage share sold in Transkei is also a considerable 29%. The table also reveals that very little of the products from the industries are exported outside the Southern African region. This explains why the explanatory value of factor two (products) is low. The major reason for this relates to the pattern of industrial developments outlined in Chapter 5. The Transvaal with its large concentrations of industries can supply many of its requirements and those of others. The industries in Butterworth must therefore cater for only nearby markets which, because of the large distance, cannot be adequately catered for by the Transvaal. A breakdown of these figures on a sectoral basis is provided below.

6.8.1 Food and Allied Industries

The group of industries in this category produced a total of R101 733 000 or about 34% of the total output of all the industries in 1987. This made the group the largest producer of manufactured products. The distribution of the goods to the various regions appear as Table 6.16 below.

Table 6.16: Inter-Regional Linkages - Products, Food and Allied Industries.

Regions	Value of Product (in R000s)	% of Total Output
Transkei	88504	87
Transvaal	0	0
Cape Province	11537	11.34
Natal	120	0.12
Orange Free State	0	0
Elsewhere	1572	1.56
Total	101733	100

Source: Field Survey, 1988.

The table reveals that the vast majority of the products from this group is sold in Transkei. This is partly because the big producers in this group, Ohlsson's Cape Breweries and Tanda Milling sell almost all their products in Transkei. Only a small amount of the products from this group of industries go outside the regional economy. In terms of output therefore this group of industries have a greater impact on the Transkei economy than the other industries.

6.8.2 Textile and Leather Industries

The total output from this group of industries totalled R 93 982 000 or nearly 31% of total output making it the second largest producer. In terms of interregional distribution Table 6.17 presents a summary of the destinations of the products.

Table 6.17: Inter-Regional linkages of the Products of the Textile and Leather Industries - 1987.

Regions	Value of Output (in R000s)	% of Total Output
Transkei	3109	3.31
Transvaal	0	0
Cape Province	58172	61.90
Natal	29050	30.91
Orange Free State	0	0
Elsewhere	3651	3.89
Total	93982	100

Source: Field Survey, 1988.

From the table, the vast percentage of the products from this group of industries sold in the Cape Province (62%) and in Natal (31%) can be deduced. The table also reveals that only a small amount of the products are sold on the local Transkeian market. The contribution of this group of industries in terms of the sale of produce on the local market is therefore limited. Indeed more of the products are exported outside the regional economy than is sold on the local Transkei market.

6.8.3 Secondary Goods Manufacturing and Metal Industries

The total production of the industries in this category add up to R 74 435 000 making the two groups the third largest producer of goods. In this group however, metal industries are the greatest producers. Table 6.18 below summarises the regional distribution of the output from these industries.

Table 6.18: Interregional Linkages - Products from the Metal and Secondary Goods Manufacturing Industries.

Regions	Industrial		Group	
	Metal Industries Value of Output (R00s)	%	Secondary Goods Industries Value of Output (R000s)	%
Transkei	14019	35.51	400	1.52
Transvaal	0	0	20000	75.76
Cape Province	25462	64.49	6000	22.72
Natal	0	0	0	
Orange Free State	0	0	0	
Elsewhere	0	0	0	
Total	39481	100	26400	100

Source: Field Survey, 1988

The above results indicate that while about 36% of the products of the metal industries are sold in Transkei only about 1% of the products from the industries manufacturing mostly secondary items are sold locally. Nearly 66% of the produce from this group of industries are sold to the Transvaal with 33% being sold in the Cape Province. The impact of this group of industries is therefore felt more in the Transvaal than locally.

6.8.4 Household, Furniture, Building and Allied Industries

The contribution of this last group of industries to total output is very small. They produced only a total of R28 432 000 worth of goods or 8% of total output in 1987. The regional distribution of the goods appear as Table 6.19.

Table 6.19: Inter-Regional Linkages - Products from the Household, Furniture, Building and Allied Industries.

Regions	Industrial		Group	
	Household and Furniture Industries Value of Output (R00s)	%	Building Industries Value of Output (R000s)	%
Transkei	984	3.04	107	100
Transvaal	18044	55.83	0	
Cape Province	13255	41.01	0	
Natal	20	0.06	0	
Orange Free State	0	0	0	
Elsewhere	18	0.06	0	
Total	32321	100	107	100

Source: Field Survey, 1988

Besides the food and allied industries, building and allied industries shows itself as the industry with the greatest impact on the economy as it distributes all its products locally. The household and furniture industries however supply a greater part of their products to the Transvaal (56%) than anywhere else with the Cape Province taking 41%.

6.8.5 Implications of the Pattern of Product Distribution

In terms of the distribution of goods it is observed that the food and allied industries and the building and allied industries have the

greatest impact on the local economy (Transkei). The other industries mainly sell their produce in the Cape Province with the Transvaal and Natal coming in that order. The tables also reveal that the Orange Free State receives nothing from the industries in Butterworth.

6.9 BUTTERWORTH GROWTH CENTRE: RESOURCE BASE

The analysis carried out in this chapter permits certain conclusions to be drawn on the industrial resources capable of making the greatest contribution to the role of Butterworth as a growth centre. It has been shown in the first place that industries selling a major part of their products in Transkei enjoy substantial agglomerative economies. The inter-regional linkages also imply that industries deriving agricultural raw materials from Transkei and manufacturing locally used items represent the major resource base on which the functioning of the growth centre should depend if it should have substantial linkages with the local economy. This is because industries in this category sell more of their produce and derive substantial parts of their raw material requirements locally. Building and allied industries also represent a major base. They are 100% dependent on local markets for their inputs and outputs.

Unfortunately, industries manufacturing secondary goods which should have induced major linkages have virtually no links with the local space economy. These conclusions imply that industrial developments in Butterworth need to be guided. Only industries capable of fostering substantial links with the local space economy (in this case

industries dependent on agricultural raw materials) need to be supported if the effectiveness of Butterworth as a growth centre is to be enhanced.

Conclusion

This chapter has indicated that while strong positive relationships exist between some of the elements of the manufacturing system of the industries in Butterworth, the vast majority of the industries have a weak financial position and also do not enjoy agglomeration economies. On two tests of the effects of distance on the growth centre the study has revealed that in general the impact of the industries are felt further away from Butterworth than nearer to it. The chapter also reveals that certain industries are better in terms of their links with the local space economy than others. The general increase of the impact of Butterworth with increasing distances from Butterworth can however be offset by the large induced multiplier (third stage of the multiplier in Chapter 3) that is created as a result of the large number of industrial employees in Butterworth. The next chapter explores this aspect of the research.

CHAPTER SEVEN

ECONOMIC EFFICIENCY OF BUTTERWORTH INDUSTRIES THROUGH EMPLOYMENT CREATION

7.1 Introduction

The number of people employed by industry in Butterworth and their income represent a potential market for manufactured goods. The total number of such employees and their income represent an assessment of this market. However the expenditure patterns of the employees and especially where they spend their incomes is of importance in assessing the size of the market. This chapter explores the impact created in the regional economy by the employment of people in the industries in Butterworth and of the salaries and wages paid to them. This is done by examining the types of employment offered by the industries and the wages and incomes structure. Expenditure among a select group of employees are also summarised and analysed. Through the analysis the hypothesis that the impact of the industries in Butterworth reduces with distance from there is further tested.

7.2 EMPLOYMENT CREATION IN TRANSKEI

The creation of employment for all has been a key development challenge facing Transkei for some time now (Clark, 1982, p. 2). As indicated in Chapter 5, this was one of the major objectives in the setting up of many industries in Butterworth. In relation to employment, both the First Five Year Development Plan and the The White Paper on the "Development Strategy and Public Sector Spending: 1980 - 2000" identify two major issues of a somewhat

paradoxical nature. There is in the first instance a shortage of labour in semi-skilled and skilled work of virtually all categories. In the second instance however, there is acute unemployment among the vast majority of the unskilled labour force. The later problem has resulted in large labour migrations to the Republic of South Africa. The policy document "Development Priorities and Public Sector Spending: 1980 - 2000" estimated that the labour force in Transkei was growing at an annual rate of about 30 000 per year and that there was a need for employment creation to expand at a similar rate. Because this target has been virtually unattainable, the document notes that nearly 55% of the labour force worked and lived in the Republic of South Africa. To remedy the situation in which a greater percentage of the country's work force was controlled by another country, employment creation in Transkei has featured prominently in the government's thinking for sometime now.

As far back as in 1978 the Legislative Assembly adopted an employment strategy designed to ensure that there is a maximum return to the labour force as a whole. A programme of action was also designed in the "Development Strategy and Public Sector Spending: 1980 - 2000" and in the First Five Year Development Plan 1980/81 - 1985/86 to create employment for all. Several efforts have been initiated in this regard. Among these efforts has been the creation of a Special Employment Action Programme (SEAP). This programme had its emphasis on the creation of unskilled temporary employment. Another attempt was also initiated through the Employment Creation Programme through

which several infrastructural projects in some urban areas in Transkei are identified and supported solely to create employment for people. The jobs created are also temporary and mainly in the building and construction industries. Other efforts to create employment for all include the provision of support to generate employment in the income generating sectors of the economy. Such sectors include manufacturing, agriculture and mining. This is because these sectors generate links with the space economy through several processes. For instance, the output from these sectors stimulates demand in the other sectors of the economy, while incomes earned also create a demand for consumer goods and services, generate funds for investment and provide revenue to finance government services. Unfortunately, there has so far been very little mining activity in Transkei and agriculture is basically still limited to subsistence activity. It is in the recognition of these facts that manufacturing activities have been given much more prominence in centres like Butterworth. In direct proportion to the amount of support provided to industry achievements in employment creation in industry surpass the creation of employment through other means.

Besides the developmental objective of providing employment for all who want to work, employment in manufacturing industries is also capable of creating substantial agglomeration economies that will enhance the effectiveness of the growth centre to stimulate the development of lagging regions through such avenues as remittances which the employed labour force send to their relatives at home and an

effective demand for manufactured goods which is created as a result of the large disposable income that is available there. Through employment in manufacturing industries, employees are also provided with training schemes which may be of benefit to them even after they leave their present employment.

In terms of employment the 49 industries included in the survey employ a total work force of 12250 people made up of 11684 Transkeians and 566 foreigners. While this represents the greatest employer of labour in Butterworth (as indicated in Chapter 5) it represents less than 1% of the total potential work force in Transkei. Moreover only a few of the Transkeians working in the industries are in managerial positions. As at the end of 1987 there were only 78 Transkeians employed in managerial positions in the industries.

7.3 SECTORAL ANALYSIS OF INDUSTRIAL EMPLOYMENT IN BUTTERWORTH

While the above characteristics describe industrial employment in Butterworth the structure of the employment differs widely from industry to industry. An analysis of these differences is important if one is to provide a complete picture of the employment characteristics among the industries in Butterworth. Table 7.1 summarises the distribution of the industrial employees with respect to the six categories of industries.

Table 7.1: Employment According to Industrial Type - 1987

Textile and Leather				
Total	Transkeians	Others	% Transkeians	Transkeians Managers
5871	5626	245	96	25
Household and Furniture				
2257	2159	98	96	15
Metal Industries				
1976	1878	98	95	28
Secondary Goods Industries				
1084	1039	45	96	3
Food and Allied Industries				
1040	961	79	92	6
Building and Allied Industries				
22	21	1	96	1

Source: Field Survey, 1988.

The table above indicate that textile and leather industries employ the most people (that is about 48% of the total employed labour force). In terms of employment therefore this group of industries have a greater impact on the local economy than the others. Building and allied industries employ fewer people than any of the other industrial groups perhaps because only one industry from this group was included in this study. Apart from the food and allied industries, all the other industries employed at least 96% of their total labour force from the local area (Transkei). However, the proportion of Transkeians employed in the managerial positions are very few (being less than 1% of the employed labour force). Metal

industries have more Transkeians in managerial positions than any of the other six categories of industrial groups. Metal industries therefore has a most important impact on the local economy in this regard. The number of locals in managerial positions is important because such positions are positively related to ones income, besides its impact on policy formulation in the factory. It is also noted from the table that textile and leather industries employ more people from outside Transkei than any of the other groups of industries. In this regard therefore leather and textile industries record a higher negative impact on the local economy than the other groups of industries.

7.4 TRAINING SCHEMES PROVIDED

Nearly all the industries surveyed in this research have provided some basic training to their staff to enable them to function. Of the 645 employees who completed questionnaires only 96 or about 15% had not received any basic training at work. These worked either as secretaries, receptionists or telephone operators (vocations where the skill is taught in specialised schools).

Training schemes provided for staff range from on-the-job training to Transkei Development Corporation sponsored training schemes that take about a month or two to complete. Only 22 of the 645 employees had benefitted from the latter training and this is in the area of computer usage. Those who have benefited from the programme indicated that they used the training at their work and that they had received

some financial benefits in the form of higher wages after the training. They have also had to train others. Of the rest who received some training these ranged from one week training to continuous on-the-job training. All indicated that they depend on their training for the work, and had not received any financial benefit from the training. About half or 276 of the employees have also been asked to train others.

The above picture implies that most of the available labour in Butterworth need some form of training to function in an industrial atmosphere. It also implies that while many employees have benefited from some form of training, the training has been minimal. The type of training is also not enough to have an impact on regional economic growth in the sense of providing employees with skills they can work with outside their present area of work. This is true of all industries.

7.5 INCOME FLOWS THROUGH INDUSTRIAL EMPLOYMENT

The amount of money paid as salaries and wages represents a major cash injection into the economy of Butterworth and the Transkei in general. Spin-offs from this cash injection include increased earnings to the government on personal income tax and General Sales Tax on the part of the income that is consumed. The unspent part of the income is also available for investment in the form of savings.

Wages and salaries paid by the selected industries in 1987 totalled R39 201 000. Of this amount R26 550 000 or 68% was paid to the Transkeian employees while the non Transkeians received a total gross salary of R12 651 000 or 32% of the total salary bill. It is accepted that at least some part of the income is spent in Butterworth which will go to increase government revenue. Table 7.3 shows the growth in General Sales Tax in Butterworth between 1984/85 and 1988/89 as compared to that of the 1978/79 financial year. Since industrial employment represents the economic base of the town (Chapter 5) it is reasonable to conclude that the growth in government's revenue in Butterworth has been induced by the large number of industries in Butterworth.

Table 7.2 : Growth in General Sales Tax Paid in Butterworth 1978/79 - 1988/89

Year	General Sales Tax	% Growth over Preceeding Year
1978/79	411479.08	
1984/85	3308437.08	704
1985/86	4436680.90	34
1986/87	5361907.46	21
1987/88	5603417.08	5
1988/89	6576997.28	17

Source: Revenue Office, Butterworth.

Using the 1978/79 figure as the base, the table indicates that growth has been very rapid in the general sales tax paid in Butterworth. The growth has often been in excess of 15% (that is more than the annual rate of inflation).

The incomes structure within the industries however is far from being monolithic. Table 7.3 below summarises the income structure among the selected industries.

Table 7.3 : Annual Income (in R'000s) Within the Industries - 1987

Textile and Leather

Income of Transkeians	Average	Income of Others	Average
11749	2.09	5324	21.73

Food and Allied Industries

5269	5.48	1904	24.10
------	------	------	-------

Household and Furniture Industries

3992	1.85	1749	17.85
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Metal and Allied Industries

3268	1.74	2544	25.96
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Secondary Goods Manufacturing Industries

2254	2.17	1125	25
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Building and Allied Industries

18	0.86	5	5
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Source: Field Survey, 1988

The table indicate that the Transkeians in the Food and Allied industries earned on the average R 5 480 per annum being the category of industries paying the highest wages and salaries to staff. Monthly wages to local staff in this industry therefore average R 457 while the average salary to non local staff average slightly more than R 2000. Within this group Ohlsson's Brewery pays far more and has accordingly had a greater effect on the average figure. Building and

allied industry record the lowest wages paid to staff (R 72 monthly). Metal industries pays far more to foreign staff than any other group of industries as foreign staff earn on the average R2163 monthly. The table also reveal that differences in salaries among the industries are very small. As noted earlier on (Chapter 5) attempts are made to consciously create this through the medium of the Transkei Chamber of Industries which has its head office in Butterworth.

7.6 INCOME AND EXPENDITURE AMONG INDUSTRIAL EMPLOYEES

A survey of 645 industrial employees of all categories reveals again how low industrial sector income in Butterworth is. The table below summarises the total income enjoyed by the 645 selected employees in the industrial firms in Butterworth.

Table 7.4: Income Group, Number of Employees and Total Income - 1987

Income Group	Number of Employees	Total Income
100 - 200	382	72056
200 - 500	201	76130
+ 500	62	98562
Total	645	246748

Source: Field Survey, 1988.

The table above reveals that the 645 selected employees earned R 246 748 of the more than R26m paid as salaries to industrial employees in Butterworth as a whole (just over 6%). The table also indicates that while the average income of those in the lower income group was about R180 the income of those in the higher income bracket was on the

average R1 500. Indeed most of the industrial employees in Butterworth earn on the average R1,05 an hour. This low income implies that the part of the income available for the purchase of industrial goods will be very small. It is also not surprising from these low wages that only 8 of the employees indicated that they had been able to put up some fixed property in their home since they started working in industry in Butterworth.

The vast majority of the workers in the lower and middle income groups spent the bulk of their income in Butterworth. However, all those in the upper income group indicated that they did the bulk of their purchases in the Republic of South Africa where they expected to find everything they need at the right price. The table below provides a summary of the average household expenditure among the 645 selected industrial employees. It excludes remittances which are treated separately.

Table 7.5 Monthly Household Expenditure of Selected Industrial Employees - 1987

Category	Total Amount	% of Total Income
Food	148 982	60.38
Rent	35 846	14.53
Clothes	18 200	7.38
Savings	3 720	1.51
Entertainment	2 500	1.01
Others	41 220	16.71

Field Survey, 1988.

The table above reveals some measure of discrepancy (there is a total expenditure of of R250 468 against a total income of R 246 748) as

compared to the total monthly figures given in table 7.4. The reason appears to be that some of the respondents added benefits (such as rent subsidies) to their expenditure while others had other sources of income which was excluded from the income statement given. (Analysis of questions 12, 13, 14 and 15 of Appendix C reveals this). Of significance however is the fact that the table indicates that R 148 982 of the total income of R 250 468 that accrues to the selected industrial workers as wages and salaries is spent on food. This represent an average of 60% (for most of the surveyed employees this is between 50 and 100%). However, the part of the income spent on food decreases as one moves up the income ladder averaging around 20% for the upper income group. From the table it can be concluded that disposable income available for the purchase of the manufactured products from the industries in Butterworth other than from the industries manufacturing food products is consequently very low or non existent. From the table too it can also be concluded that very little of the income is saved. The low wages and salaries imply that the induced multiplier resulting from the creation of industrial employment in Butterworth, is very low or non existent. However, substantial numbers of the surveyed workers remit part of their earnings to their home. It was therefore decided to use this and the origin of the employees as a means of assessing the effect of distance on the growth centre.

7.6 THE RELATIONSHIP BETWEEN DISTANCE AND THE ORIGIN OF INDUSTRIAL EMPLOYEES

The majority of the employees working in the industries come from outside Butterworth. While the management personnel are almost all from outside Transkei, the rest of the employees are from the country. An impact of the industries in Butterworth is their ability to attract surplus population from other regions. In this connection the philosophical basis of the growth pole theory implies that people from areas closer to Butterworth, due to the smaller distance and therefore travel time, will be absorbed before people from farther away. The distance from Butterworth to the areas where the employees came from therefore represents a means of testing this assertion. In this connection it is noted that only 38 representing 6% of the 645 employees who provided the responses for the study come from outside Transkei.

A regression analysis in which the distances to the home areas of the 645 respondents form the independent variable and the number of employees from the specified distances the dependent variable (this is referred to as factor three) was computed. In the situation of the number of employees decreasing with distance the regression co-efficient will be negative. A positive co-efficient would imply that more employees come from distances further away from Butterworth than nearer it. In that case the fourth hypothesis (Chapter 2, p. 50) would not be accepted.

In relation to factor three (distances to employees home) the regression analysis appear as table 7.6.

Table 7.6: Regression Analysis for Factor Three (Distances to Employees' Home)

Parameter	Estimate	Standard Error	T Value	Probability Level
Intercept	39.6136	9.56937	4.13962	.00062
Slope	16.5403	6.41182	-1.36333	.18959

Source: Computer Centre, Rhodes University.

The regression line resulting from table 7.6 is presented as figure 7.1 while the analysis of variance appear as Appendix E.

From the table and the regression line it is noted that for factor three scores (distances to employee home areas) the regression co-efficient is negative lending support to hypothesis three in Chapter 2. However, the correlation co-efficient is low (-0.305933) and is statistically not significant. The explanatory value of distance on the number of employees in the sample is also a low 9%. Thus while this analysis is in agreement with the proposed hypothesis (hypothesis four in Chapter 2, p. 50) the support it offers to the hypothesis is weak and cannot be relied upon to accept it.

7.7 RELATIONSHIP BETWEEN DISTANCE AND THE DESTINATION OF REMITTANCES

The impact a growth centre can have on an area may be in the form of remittances. This goes to ease the suffering of especially rural dwellers as well as helping in capital formation and the creation of

an induced multiplier in the form of an effective market for goods and services in those areas. Since it is anticipated that more people from nearer the growth centre will be employed at the centre it is also expected that employees remittances will go first to areas that are closer to the growth centre. In the expectation of this a regression analysis was computed of the number of employees remitting to specified distances (factor four). Of the 645 responses only 351 (about 54%) indicated that they did remit some part of their money home mainly to relatives. The regression analysis from Factor Four (number of employees remitting to people resident at a certain distance from Butterworth) appear as Table 7.7.

Table 7.7: Regression Analysis for Factor Four (Number of Employees and Distance to the Residence of the Beneficiaries of Remittances)

Parameter	Estimate	Standard Error	T Value	Probability Level
Intercept	26.7499	7.30344	3.66265	.0031
Slope	-0.0224564	0.0151289	-1.48434	.15843

Source: Computer Centre, Rhodes University.

In relation to factor four the regression line appear as Figure 7.2 and the analysis of variance is shown as Appendix E. The regression line is negative and therefore gives further support to the proposed hypothesis. It implies that the impact of the industries (in terms of number of workers remitting) decrease with increasing distances from Butterworth. However, the support provided in the analysis is weak (13%) and statistically insignificant. Thus there is not sufficient evidence to accept the proposed hypothesis on the basis of

FIGURE 7.1 : REGRESSION OF FACTOR THREE ON DISTANCE

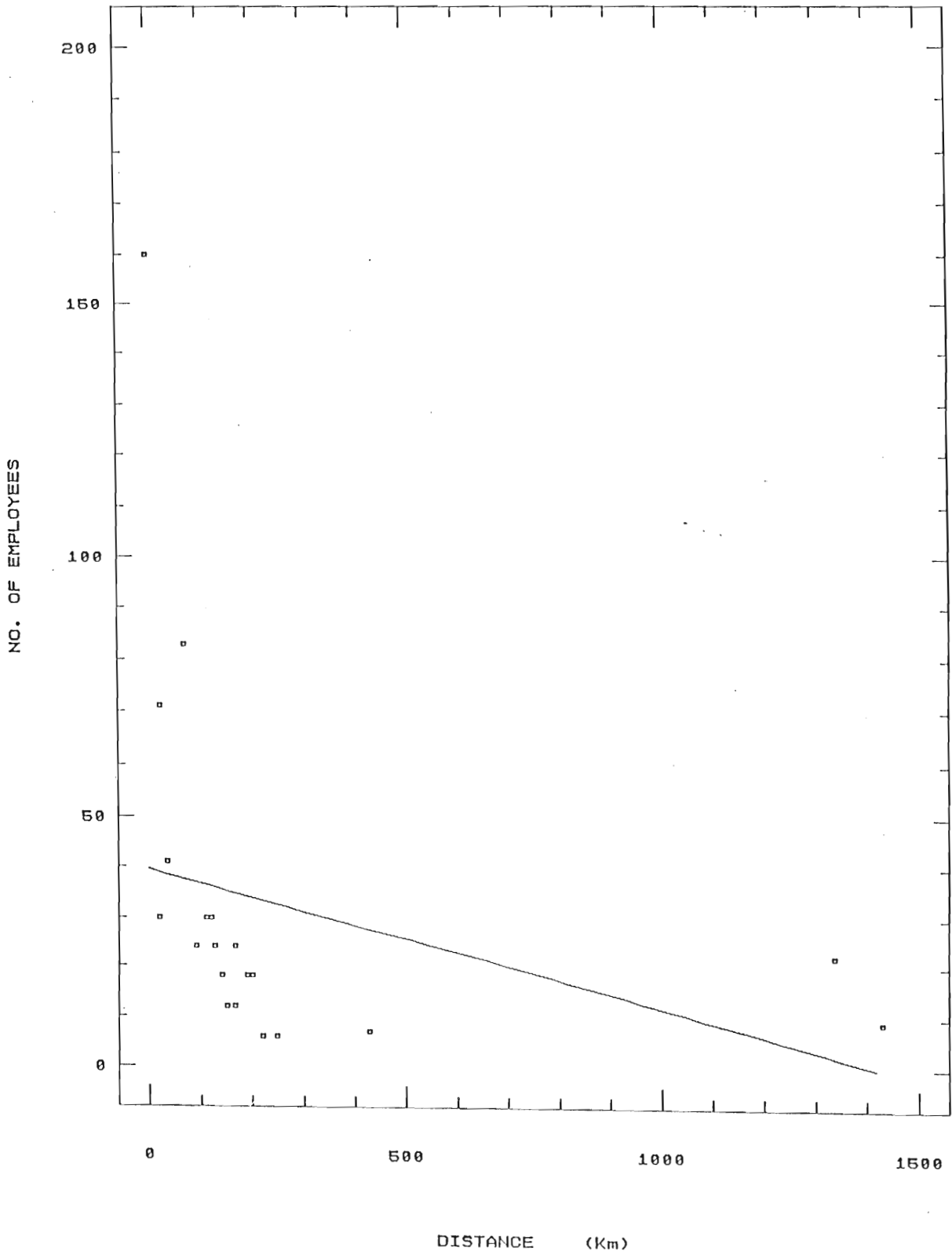
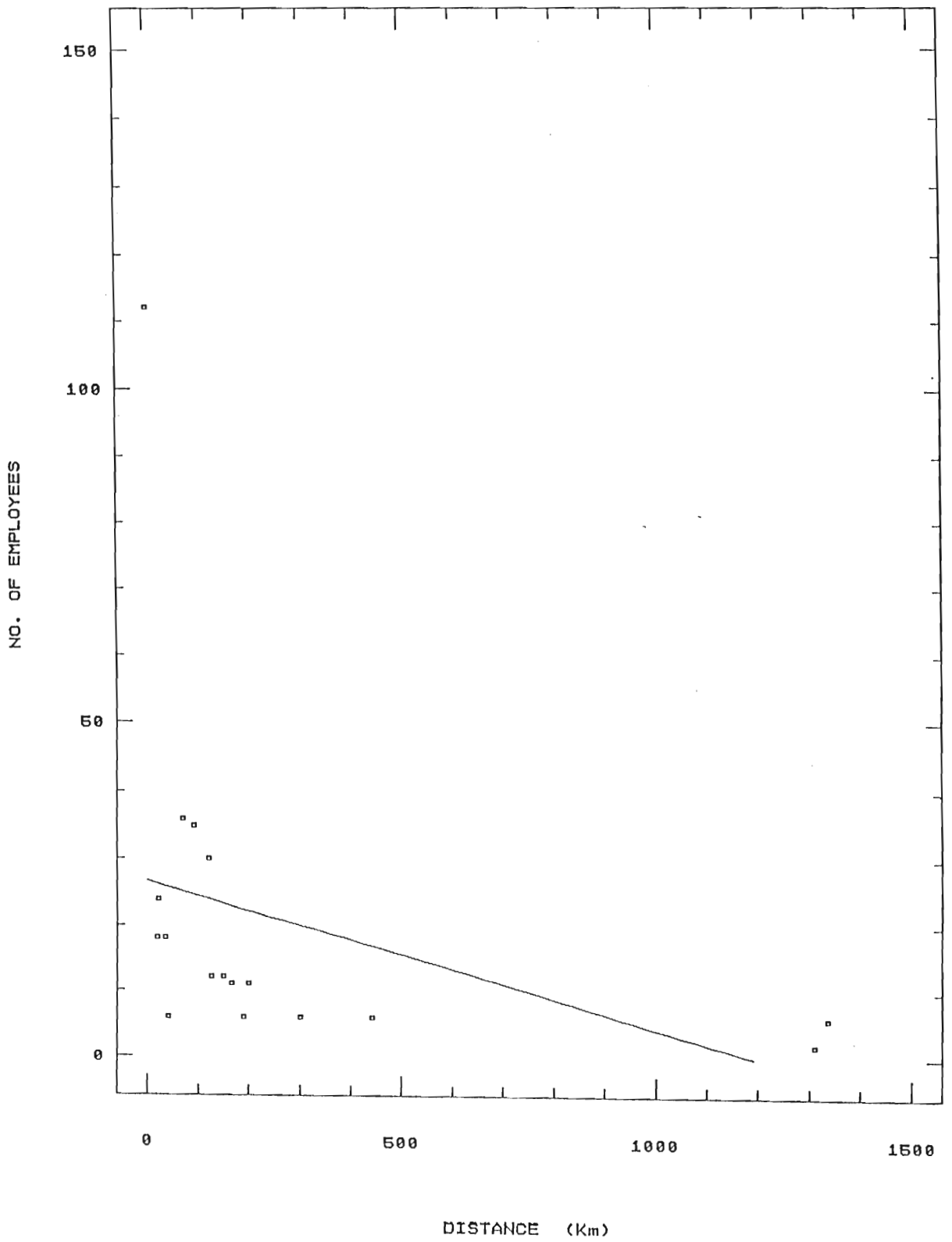


FIGURE 7.2 : REGRESSION OF FACTOR FOUR ON DISTANCE



analysis.

Thus of the four factors, only on two of the tests are the correlations significant. These two as indicated in Chapter 6 are however at variance with the proposed hypothesis. In general therefore it is accepted that the impact of industries in Butterworth increases with distances from there.

7.8 INTER-REGIONAL LINKAGES: LABOUR SUPPLY

As noted above linkages through labour supply and remittances are mainly fostered with the space economy of Transkei. Table 7.8 below summarises the number of employees from the various districts in Transkei.

Table 7.8: Inter-regional Linkages : Employees

District	Number of Employees
Umtata	30
Gcuwa	160
Cacadu	30
Cofimvaba	24
Engcobo	30
Lusikisiki	6
Idutywa	30
Umzimvubu	18
Qumbu	36
Xhora	6
Centane	41
Nqamakwe	71
Mqanduli	24
Tabankulu	12
Siphageni	6
Gatyana	48
Tsomo	35
Outside Transkei	38
Total	351

Field Survey, 1988.

The above table indicate that with this factor, which is more Transkeian based, the major beneficiaries are Butterworth and Ngamakwe. These two districts on the average have more than half of all employees making remittances.

Conclusion

The analysis carried out in this Chapter has indicated that in spite of the generous concessions granted to industry (Chapter 5), industrial developments in Butterworth is hampered by other constraints which have not enabled the centre to function properly as a growth centre. These constraints include the very low income of industrial employees almost all of which is spent on food, and the training schemes which are provided for them only to be able to function within their present employment. The previous chapter also revealed through interregional linkages that Butterworth industries are dependent on the industrialised and developed parts of the Republic of South Africa for their inputs. It is these constraints which, taken as a group, reduce the effectiveness of Butterworth as a growth pole. The removal of these constraints will therefore stimulate the development of Butterworth as a growth pole. Part three of this study as Chapter 8, offers potential solutions to these constraints.

CHAPTER EIGHT

CONCLUSION

8.1 INTRODUCTION

This study has devoted considerable attention to an examination of the spatial variations in economic development in Transkei and the position of Butterworth as a growth pole in helping to achieve a balance in spatial development. The analysis was accomplished through an examination of three factors (a) the spatial patterns associated with the economic development effort of Transkei, (b) the factors and processes associated with the evolution of the spatial pattern of development (c) the links between the processes, the factors and the associated spatial forms.

The research was based on the notion that spatial inequalities in development constitute a problem which could hamper Transkei's efforts to achieve stability and progress. While the government of Transkei recognises this (as indicated in the First Five year Development Plan and the White Paper on Government Priorities and Public Sector Spending), attempts have not been made to study the current pattern and its potential in resolving the problem in depth. Without such a study it is impossible to effect any changes in the system to achieve the desired goal. The research was also based on the fact that, as a Third World country the study of the Transkeian space economy cannot be founded on the same theoretical models applicable to developed countries. The need thus exists to formulate models that will have applicability within the unique circumstances of this

country. This study was also intended to help unearth the particular processes that inhibit the functioning of Butterworth as a growth centre. Having carried out the research with the above considerations in view, the following findings were made.

8.2 Summary of Findings

8.2.1 Relationship Between Spatial Patterns and Processes

It was observed that the creation of spatial inequalities in development owes their existence to certain processes that have been unleashed on the space economy. These processes are purely governmental and emerged during the period of colonial occupation and were reinforced after independence by the government. The analysis of the concentration of selected economic development indices revealed that spatial inequalities in development in Transkei is now very evident especially between urban areas and rural areas. The scale of such inequalities have been shown to have a positive correlation with the level of living of individuals within these regions in some places (Boateng, 1986). The impact of these inequalities on the level of living in the various surfaces of economic activity identified in Transkei, therefore represent a future area of investigation.

8.2.2 The Links Between Processes and Spatial Patterns

Causal modelling was used to describe the links between spatial processes and their associated spatial forms. The causal links were observed to be recursive and with positive self reinforcement. The positive reinforcement is also strengthened through the processes of

spatial planning and the institutional structure of the space economy and this goes to further reinforce the situation. It is these causal links which, if allowed to perpetuate, help to reinforce the existing patterns. The study thus infers that the present pattern of Transkei's developmental structure cannot be relied upon to correct itself unless certain structural adjustments are initiated.

8.2.3 Spatial Links Between Butterworth and the Space Economy

The study reveals that most of the industries in Butterworth do not enjoy agglomeration economies while at the same time linkage mechanisms which could help to achieve a balance in spatial development are very weak. Much of the impact of the industries, with the exception of employment, benefits areas that are far from the Transkei. Even in terms of employment, it was shown that the proportion of salaries and wages spent in the Transkei is very small as many of the workers only earn very little. It was also revealed that while many of the industries have initiated training schemes for their staff, the benefits from the training have been very small (if any).

These conclusions however, need not negate the fact that Butterworth is a growth point. It is a very young industrial area and most of the industries established have only started production recently. They therefore experience teething problems which inhibit their effectiveness. It has been noted that the estimated length of time needed for a growth centre strategy to achieve a net positive spill

over effect is between 15 and 25 years (Nkuhlu, 1989, p. 175). At this initial stage therefore many constraints have been identified to be inhibiting the functioning of Butterworth as an urban industrial growth centre. Such constraints include the absence of a leading or propulsive industry, marketing problems facing some of the industries, the poor economic base of many industries which results in low wages being paid to staff and the absence of large well-stocked commercial outlets in Butterworth. It is hoped however that in the long run, the constraints indicated in this study will be overcome and linkage mechanisms will become a common feature of many of the industries if certain structural programmes can be effected. Bearing the above considerations in mind the following recommendations are made which will enhance the effectiveness of Butterworth as a growth centre.

8.3 Recommendations

8.3.1 Introduction

The government has been recognised as the major creator of the current spatial pattern. This has largely been through the expansion of governmental activities and policies that favour the urban areas and thus planned polarisation of the space economy. It has also been through an over-emphasis on industrial development without equal emphasis on other components that go with industrial promotion. As Nichols has noted, it is "... not sufficient simply to bring new industries to a town" (Nichols, 1969, p. 36). The Government as an institution has an overall responsibility for formulating programmes that will help to promote the general well-being of all the people.

This involves helping to reduce the inherited inequalities in the space economy. There is therefore a need for meaningful planning and implementation with the above considerations in view. A system of development which perpetuates inequalities without efforts to manage it successfully cannot be regarded as satisfactory. Factors identified below therefore constitute the foundations which will help steer Butterworth to its proper role as a growth point.

8.3.2 The Problem of Development Planning

One major conclusion from this study is that development planning has a great impact on regional growth and development. This study has in accordance with the principles underlying growth pole theory identified linkages between spatial units as a major requirement if a balance in spatial development is to be attained from polarised development. The formulation of a regional development policy should therefore be considered a multi-sectoral activity which combines in a meaningful way the various facets of the country's economic structure.

Current thinking on development planning in Transkei, tends to emphasise the urban areas as focal points for the concentration of developmental activities. Such economic activities have included the promotion of industrial development. Thus the economic base of some of the urban areas in Transkei, notably Butterworth, have become determined by industrial development. This has in turn promoted urban concentration and development with limited linkages to the space economy (Nkuhlu et al., 1989). While this cannot be entirely faulted,

it has been shown that in the absence of proper linkages between the rural and urban areas it will be impossible to effect a balance in spatial development through this means.

The constraints noted above can be corrected if development planning in Transkei is placed in its proper multi-sectoral framework. It is therefore being recommended that development planning in Transkei emphasise the idea of interlinkages between spatial units. In emphasising the linkages between the different regions in the country it is hoped that the different sectors of the space economy will be brought into a healthy pattern of inter-relationships. It is also important that development planning in Transkei take account of the existing structural form of spatial relationships in the economy.

8.3.3 Industrial Development and the Regional Problem

The major weakness with the policy of industrial development in Butterworth has been the approval of any industry regardless of its links with the space economy. This has manifested itself in small industries independent of each other and manufacturing mainly goods for final consumption in the Republic of South Africa. Such industries depend on their supply of inputs from the PWV area where large firms capable of creating internal economies of scale exist. If industrial development is to help achieve a balance in spatial development there is a need to correct this imbalance. Deliberate planning should indicate which industries to support. Through such means development policy will counteract market imperfections.

It is also recommended that industrial development be accompanied with and not be a substitute for agricultural development. The role of agriculture in economic development in the developing countries is generally accepted (Hunter, 1974). Agriculture in Transkei is mainly a rural activity and operates at a subsistence level. Constraints to agricultural development are basically physical, social and economic. The physical factors include climatic and topographical ones. The most critical climatic factor is rainfall. Topographical factors, notably relief, are directly related to erosion hazards and hence to the proportion of potentially arable land, and indirectly related to soils through the influence of relief on soil formation. Fortunately, a detailed agro-ecological classification on the basis of present rainfall and topographical factors have been compiled for the Transkei (Hawkins and Associates, 1980).

It is being recommended therefore that a programme of action based on the agro-ecological classification be initiated to select patterns of production to encourage in different parts of the country. This should be introduced without delay and should be tied into the country's industrial development programme.

The socio-economic factors also present particular problems. It is known, for instance, that the income of rural dwellers in Transkei is so low that unless it can be raised, expansion of rural agricultural production will be very difficult (Nkuhlu, et al, 1989). In this

connection it is being recommended that rural producers of agricultural produce be provided with the same level of support that industrialists currently enjoy (Chapter 5).

The main social problem inhibiting agricultural expansion has been identified as the availability of land (NKuhlu, 1985). Land tenure in the Transkei is in the form of traditional, quit-rent, freehold, governmental land, Municipal land, and Institutional land. However, it is noted that almost all the land area of Transkei is in the hands of traditional authorities. Land tenure and its administration is critical to development. Development is difficult in a land tenure system where there is no formal right of occupation.

In the past, land has been difficult to obtain even if adequate compensation is promised. The non-availability of land for agricultural pursuits has been related to some cultural values. Such values have found expression in the idea that land is not for sale, and the unwillingness of traditional authorities to provide land for people other than those from their area. Many traditional authorities have the impression that there is no substitute for land and therefore cannot be offered for sale. There are also countless processes one has to pass through before obtaining land. This problem has been a major factor in the underdevelopment of several regions (Hagerstrand, 1967). What is required therefore is a change in the attitudes of the traditional authorities. Whilst the present pattern of land ownership could be allowed to stay, the traditional authorities could be made to

accept some form of remuneration for parting with the land so that large scale agricultural programmes could be established on them. This will provide employment for the people while supplying raw materials to the industrial sector and through that developing links with the industrial sector. Thus Tanda Milling can be established to process the grains produced in Transkei for supply to Ohlsson's Cape Brewery and Leopard Breweries. Tannery Protea will also depend on local hides and skins to supply Eagle Golf and Eltex Flashman with wet blue leather.

8.3.4 The Problem of Internalising Market Externalities

As pointed out in chapter seven, with the exception of the lowly paid employees, whose salary barely pays for food, the vast majority of the highly paid staff with more disposable income to buy manufactured commodities shop in the Republic of South Africa. While recognising that the job-creation attributes of any development project or strategy require sympathetic consideration, the low salaries in industry is a cause for concern. Development planning should ultimately aim at improving the well being of the people. To succeed therefore development must be able to reach the people whom the development is intended to benefit. The attraction of many industries to Butterworth on the prospect of paying low wages does not obviously benefit the people in this regard. While industries may need to pay low wages in the initial stages, support for industrial creation in the form of very low wages is not beneficial for the people and for industries as it contributes to a high staff turnover in the longrun.

It is recommended therefore that attempts be made to support industries in other areas such as training so that their fiscus is improved and through that they are able to pay higher wages to staff. The minimum wage legislation is also having a detrimental effect as most industries see their role as only paying that. A need exist for understanding on this policy and it is incumbent on the government's part to provide education in this regard to the industrialists.

The large number of high income earners who buy from the Republic of South Africa do so because of the absence of large, conveniently placed shopping centres that offer a broad range of commodities in Butterworth and the Transkei in general. In the past this has been due to the unwillingness of the government to allow large chain stores to operate in Transkei. It is noteworthy that with the advent of a new regime in Transkei this attitude is changing. It is being recommended that red tape be cut so that the process allowing such companies to set up shop in Transkei be speeded up. Investments in large scale shopping complexes will in view of the large market available obviously yield some returns to make it worthwhile.

8.3.5 Regional Industrial Support Measures

In Chapter 5 it was noted that industries in Butterworth benefit from a broad range of concessions which go to improve profitability. That some of the industries still make heavy losses in spite of this implies that other support measures are still necessary. The formulation of a regional development policy embraces industrial,

agricultural, small business, mining, tourism and other services. It also includes the integration of these elements with the provision of appropriate education, training, health, housing, and residential facilities. There is also a need for managerial skills to handle the management of these activities meaningfully so that linkages emerge in the space economy with time.

In this connection it is recommended that further support measures be provided for the industries. It is envisaged, however, that within the broad principles of the Regional Industrial Development Programme (RIDP) any such support measure should be designed to solve specific problems that confront some of the industries and not a general application of measures. In particular it is recommended that support measures be provided to some of the industries in areas such as financial management, marketing, managerial skills, advertising and infrastructural support especially housing. In terms of housing the greatest need now exists with the poorly paid staff. The problem is revealed from the large squatter settlements that has sprung up on industrial land in Butterworth. The provision of these facilities will contribute to the efficient management of the industries and increased productivity among staff. Support should also be offered to prevent unhealthy competition which tends to weaken the economic efficiency of some of the industries. Such support could be obtained by imposing a small levy on imports of commodities that are also manufactured by the industries in Butterworth.

Through the course of this research many industrialists identified labour turnover in Butterworth as their most difficult problem. High staff turnovers increase the cost of training. Besides on-the-job training there is also a need to provide education in this regard and formal training in critical areas. Industries will thus have better trained staff who will help increase productivity in the industries.

8.3.6 Uniformity of Concessions

It was noted in Chapter 5 that concessions available in Butterworth are similar to those available in developed urban places such as East London, King William's Town and Queenstown. Such a policy however fails to take account of the disadvantaged position of Butterworth in relation to these areas in terms of development. The general effect of this is that industrial developments in these urban areas are encouraged to proceed faster than those in Butterworth. It is recommended that a preferential system of incentives in favour of areas like Butterworth be implemented. This will need to be negotiated as part of the RIDP.

8.3.7 The Absence of a Propulsive Industry

The role of a propulsive or leading industry as the generator of growth has been emphasised in growth pole theory (Chapter 2). Localised backward and forward linkages are the most important characteristics of a leading or propulsive industry (Dewar, et al., 1984). Industrial development in Butterworth departs from this

original growth pole concept in that it has never specifically attempted to attract a leading industry. As a result of this the available evidence with regard to local backward and forward linkages is negative. It is, however, not too late to make efforts in this regard and it is recommended that this be seriously pursued.

8.3.8 The Need for a Comprehensive Information System

The dearth of information on several socio-economic variables in Transkei is a serious matter which demands immediate attention. It implies that development planners are seriously inhibited in their programmes. The first five year development plan perhaps best exemplifies the situation. It must be realised that development is rather broad and that it has a relationship with several other factors within the space economy. One of the inhibiting factors in the free market is that buyers and sellers operate on incomplete information. To provide a meaningful framework within which development plans can be formulated and executed there is a vital need to upgrade and strengthen the Statistical Division. This Division could be given the status of an autonomous Institute. Their basic role will be to conduct periodic surveys on all aspects of the socio-economic structure of the economy. In this way information on past and present trends will always be available to regional economic planners. Through research and analysis too, better information on relevant matters will be obtained by the authorities. Action can then be taken to make market forces more efficient and its propulsive power better utilised.

8.3.9 Alternative Strategies

It is hoped that the implementation of the above recommendations will in the course of time help to enhance the effectiveness of Butterworth as a growth pole. The implementation of the policy of industrial decentralisation and growth pole strategy however does not preclude the adoption of other strategies. The prime importance of making sure that a development strategy serves the best interests of the majority of the people indeed make it imperative that alternatives to the present regional development policy be considered, even if as a supplement. In this regard it may be worthwhile considering the words of Browett when considering a similar situation. He noted that "a socially oriented welfare strategy combined with some form of industrial and vocational training may achieve more beneficial results for the 'poverty people' than the present strategies" (Browett, 1972, p. 45).

8.4 FUTURE RESEARCH AREAS

This research concentrated on examining the links between some elements in the manufacturing system of Butterworth and the other regions in both Transkei and the Republic of South Africa. Other areas of link are between various policies and the space economy however exist that need to be studied in future. For example the inter-relationships between macro-economic policy and regional development policy. There is also the whole question of regional development policy of which industrial development just happens to be

a small aspect. Information on all these could help tremendously in the future implementation of the policy of industrial development and growth centres.

There is also a need to take a stock of the country's resources and relate this to the industrial promotion policy. If this information is available, the requirements of every industry with respect to water, electricity, marketing of goods, employment patterns and the economic efficiency of such industries, can be assessed before being allowed to set up shop in Transkei.

This study has concentrated on assessing the linkages between Butterworth and the national space economy. It is accepted that there are three other industrial development points in Transkei. While these may not be as developed as Butterworth the findings of this study make it imperative that a study be conducted into the linkages between the other centres and the national space economy. Such a study at this early stage will help to correct and perhaps prevent some of the inhibiting factors that have hampered the effectiveness of Butterworth as a growth pole. Such a study could be treated as a supplement to this research.

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APPENDIX A

AVAILABILITY AND RELIABILITY OF DATA SOURCES

Besides questionnaires, three main sources of data and information was used in the collection of data for this thesis

- (i) Publications from relevant Government Departments
- (ii) The results of Interviews with members of staff of the Transkei Development Corporation, Butterworth Municipality and the Department of Commerce and Industries
- (iii) Personal Observations

The use of these instruments enabled the accuracy of answers to questionnaires to be cross checked.

Source of Data on the Growth of Butterworth

These were collected from the relevant Municipal Departments through personal visits. Figures collected were cross-checked at the relevant Departments in Umtata.

Source of Data on Population Growth in Butterworth

As indicated in the text these were obtained from the records of the IMDS. The author had access to official records at the Institute including unpublished records. Other population figures were obtained from published records

Source of Data on Employment Figures for the Selected Industries

Employment figures for the various industries are submitted periodically to the Transkei Development Corporation for the purpose of obtaining the wage incentive. From these records the employee figures for the period 1980 -1986 was obtained. Development Officers from the Corporation cross check these figures and it is therefore accepted as being reliable.

APPENDIX B

Example of Questionnaire Used For the Collection of Data On
The Input - Output Flows of the Industries.

1. Name of Interviewer
2. Person Interviewed
3. Capacity of Person Interviewed.....
4. Date of Interview

INDUSTRY DETAILS

5. Name of Company
6. Type of Industry
7. Products (a).....
(b).....
(c).....
(d).....
(e).....
(f).....
(g).....
(h).....
8. Location of the Industry (a) Ibeka
(c) Zitulele
(d) Others.....(Specify)
9. Date Established
10. Is the Company Receiving Concessions: (a) Yes (b) No
11. Value of Concessions Received in 1987.....

OWNERSHIP

- 12. Owned by Transkeians%
- 13. Owned by Non Transkeians.....%
- 14. Owned by TDC.%

SOURCE AND APPLICATION OF FUNDS

- 15. Total Investment
- 16. Source(s) of Capital (specify amount of each) :
 - (a) Loans.....
 - (b) Shares.....
 - (c) Others
- 17. Source(s) of Machinery (specify place in) :
 - (a) Transkei.....
 - (b) South Africa.....
 - (c) Others (State Country).....
- 18. Source of Technology (specify place in):
 - (a) Transkei
 - (b) South Africa
 - (c) Others (State Country).....

EMPLOYMENT

- 19. Total No. of Employees
- 20. No. of Transkeians
- 21. No. of Non Transkeians
- 22. No. of Employees in Management/Professional Posts
- 23. No. of Transkeians in Management/Professional Posts.....

WAGES/SALARIES (R'000S)

- 24. Total Wages/Salaries Paid to Employees in 1987
- 25. Wages and Salaries to Transkeians (1987).....
- 26. Wages and Salaries Paid to Non Transkeians (1987).....

RAW MATERIALS

- 27. Value and Source of Raw Materials in 1987.
- 28. If source is in Butterworth (a) State firm
- (b) Value
- 29. If Company produces its own Raw Materials (a) State place of
 Production (b) Value.....
- 30. State any Efforts being made to obtain the raw materials locally

MARKET

- 31. Types of Products and Uses.
- 32. Sale of Products 1987.
- 33. If products are supplied to any firm in Butterworth state:
 (a) Name of Firm.....
- (b) Value
- 34. Location of Firm: (a) Ibika (b) Zitulele (c) Others
- 35. Any Retail Outlet Owned by the Company (a) Yes (b) No
- 36. Locations of Retail Outlets if any:

INCOME AND EXPENDITURE

- 37. Turnover 1987.....
- 38. Gross Profit 1987.....
- 39. Net Profit Before Concessions 1987.....
- 40. Tax 1987.....
- 41. Expenditure 1987
- 42. Any Donations made to Local Organisations in 1987 (a) Yes (b) No
- 43. Value of Donation.....
- 44. Recipient

PROBLEMS AND PROSPECTS

- 45. List in order of importance some of the problems being encountered by your firm:
 - (a).....
 - (b).....
 - (c).....
 - (d).....
 - (e)
 - (f)
 - (g).....
- 46. Does your company have any plans for expansion (a) Yes (b) No
- 47. Give Reasons for your answer to question 46.
 -
 -
 -
 -

APPENDIX C

Example of Questionnaire Completed by the Industrial Employees
on their Income and Expenditure

1. Name of Interviewer
2. Person Interviewed
3. Date of Interview

PERSONAL DETAILS

4. Age
5. Sex
6. Present Residence
7. Home
8. Highest Educational Attainment

EMPLOYMENT and INCOME

9. Name of Factory where you work
10. What Position do you occupy
11. For how long have you been working here
12. Salary/Wages for the Month
13. Any Benefits (e.g Loans, Rent Subsidies etc.) (a) Yes (b) No
14. Specify Type of Benefit.....
15. Any other Sources of Income (a) Yes (b) No
16. Source(s) of the Income
17. Former Employers

EXPENDITURE Per MONTH

- 18. Food
- 19. Accomodation
- 20. Savings
- 21. Clothes
- 22. Entertainment
- 23. Others
- 24. Please state where you do the bulk of your purchases
-
- 25. Do you buy from the Company You work for (a) Yes (b) No
- 26. Please list some of the items purchased from your employers last year
-
- 27. Any Special Concessions Allowed on Purchases (a) Yes (b) No
- 28. Nature of Concessions
- 29. Yearly Remittances
- 30. Recipient(s).....
- 31. Please indicate the place(s) of residence of the recipient(s)..
-
- 32. Relationship of the recipient(s) to you.....
-

TRAINING

- 33. Any Training Received From Employers (a) Yes (b) No
- 34. Nature of the Training Received.....
- 35. How Long was the Training Period

- 36. Do You Rely on the Training to do your Work (a) Yes (b) No
- 37. Any Benefits received after your Training (a) Yes (b) No
- 38. Give Details of Benefits
-
- 39. Have you also had to Train others (a) Yes (b) No
- 40. If Yes give Details
-

ASSESTS

- 41. Do you own any Fixed Property (a) Yes (b) No
- 42. Where is it
- 43. What other investments have you been able to establish since you started working in this company.....
- 44. Where are they

LIST OF INDUSTRIAL FIRMS
APPENDIX D

	INDUSTRY	LOCATION	TYPE	DATE	EMPLOYT
1	AUTOLOOMS	Z	ME	01-04-81	51
2	BEIER INDUSTRIES	J	TL	01-07-78	673
3	BEIER SHARIDOR	I	HF	01-07-84	131
4	BRAUN ENGINEERING	Z	ME	01-01-76	267
5	BUTAKEM	Z	FA	01-07-76	234
6	BUTTERWORTH METAL INDUST.	I	ME	01-07-77	102
7	CALCAMITE PLASTICS	Z	HF	01-04-88	8
8	CANE FURNITURE	Z	HF	01-01-79	262
9	CHEP INDUSTRIES	Z	HF	01-01-76	521
10	CRISBURD	I	ME	01-01-78	98
11	EAGLE GOLF MANUFACTURES	Z	TL	01-04-84	73
12	ELTEX (FLSHMAN)	Z	TL	01-05-77	176
13	FRANCO INDUSTRIAL GLOVES	Z	TL	01-09-76	259
14	FRANCO SAFETY GLOVE	Z	TL	01-08-82	273
15	GARDEN & PATIO FURNITURE	Z	HF	01-04-83	49
16	GCUWA CONCRETE	Z	BU	01-04-85	21
17	GOLDEN COMPANY	I	HF	01-01-82	921
18	GREINER INDUSTRIES	Z	TL	01-05-88	14
19	HIGH FLIES	Z	ME	01-01-83	47
20	IMPERIAL BAGS	Z	HF	01-02-88	92
21	INGALL PARSONS	I	HF	01-05-84	46
22	INGLOTEX	I	TL	01-01-05	365
23	J & V ENGINEERING	Z	ME	01-10-85	25
24	LABORA STEELWORKS	Z	ME	01-03-85	30
25	LEOPARD BREWERY	Z	FA	01-01-83	182
26	M AND M MOTOR SPARES	Z	ME	01-05-85	16
27	M AND S HOLDINGS	Z	SG	01-02-87	34
28	NEW PINE PRODUCTS	Z	HF	01-08-87	41
29	OHLSSONS CAPE BREWERY	I	FA	01-07-79	308
30	PARAMOUNT FASHIONS	Z	TL	01-08-87	24
31	PEP TEXTILE INDUSTRIES	Z	TL	01-01-77	2239
32	PINO'S CONSTRUCTION	Z	ME	04-01-88	72
33	PRECISO	Z	ME	01-01-83	110
34	PRINCE-TRIM	I	TL	01-03-88	81
35	SABLE CLOTHING	I	TL	01-10-87	56
36	SARAH WADE	Z	TL	01-09-85	27
37	SIKO MANUFACTURES	Z	HF	01-01-86	6
38	WEST'S DOG BISCUITS	Z	FA	01-01-77	46
39	UNIVERSAL METALS	Z	ME	29-11-81	552
40	TRICO ENAMELWARE	I	ME	22-09-82	159
41	TRANSKEI WIRE INDUSTRIES	Z	ME	12-11-74	60
42	TRANSKEI KNITTING	Z	TL	01-11-78	198
43	TRANQUALITY RUGS	Z	HF	01-06-83	59
44	TRAMATEX	I	SG	01-01-77	1005
45	TAURUS CHEMICALS	Z	HF	01-03-79	23
46	TANERY PROTEA	I	TL	01-03-81	268
47	TANDA MILLING	Z	FA	01-04-79	191
48	TALLY	I	TL	01-05-84	900
49	T & E ELECTRONICS	I	ME	01-06-88	289

APPENDIX E

DETAILS OF THE ANALYSIS OF VARIANCE BETWEEN DISTANCE AND THE FOUR FACTORS

Variable 1

Source	df	Sum of Squares	Mean Square	F value	Prob. Level
Model	1	7.7320E0008	7.7320E0008	6.655	.02411
Error	12	1.3943E0009	1.1619E0009		

Total (Corr)	13	2.1675E0009			
Correlation Coefficient = 0.597266				R-squared = 35.67 percent	
Standard Error of Est. = 10779.2					

Variable 2

Source	df	Sum of Squares	Mean Square	F value	Prob. Level
Model	1	2.5449E0009	2.5449E0009	7.160	.01151
Error	33	1.1729E00010	3.5542E0008		

Total (Corr)	34	1.4274			
Correlation Coefficient = 0.422247				R-squared = 17.83 percent	
Standard Error of Est. = 18852.5					

Variable 3

Source	df	Sum of Squares	Mean Square	F value	Prob. Level
Model	1	2319.6320	2319.6320	1.859	.18959
Error	18	22464.118	1248.007		

Total (Corr)	19	24783.750			
Correlation Coefficient = -0.305933				R-squared = 9.36 percent	
Standard Error of Est. = 35.3271					

Variable 4

Source	df	Sum of Squares	Mean Square	F value	Prob. Level
Model	1	1364.7322	1364.7322	2.203	.15843
Error	15	9291.1502	619.4100		

Total					
(Corr)	16	10655.882			
Correlation Coefficient		= -0.357873			R-squared = 12.81 percent
Standard Error of Est.		= 24.8879			