Dissertation By

MARY MAGDALENE OPONDO

KENYATTA UNIVERSITY

DEPARTMENT OF GEOGRAPHY

The spatio-structural characteristics of small scale industries in Kisumu municipality

1989

THE SPATIO-STRUCTURAL CHARACTERISTICS OF SMALL SCALE INDUSTRIES IN KISUMU MUNICIPALITY

By

MARY MAGDALENE OPONDO

A THESIS SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR DEGREE OF MASTERS OF ARTS AT KENYATTA UNIVERSITY DEPARTMENT OF GEOGRAPHY 1989

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Opondo

Mary Magdalene Opondo

This Thesis has been submitted for examination with my approval as the University Supervisor

Prof. M B. K Darkoh

Abstract

This study investigates the structure and location of small scale manufacturing firms in Kisumu municipality. The hypotheses and research premises tested are:

(i) Significant variations exist in the type, ownership and employment characteristics of small scale industries in Kisumu municipality.

(ii) H_1: There is a significant relationship between entrepreneurial perception and the location of small scale industries in Kisumu municipality.

(iii) H_1: Economic factors are relatively unimportant in the location of small scale industries in Kisumu municipality.

(iv) H_1: There are strong linkages between the small scale manufacturing industries and Kisumu's urban industrial economy.

The analysis is as varied as the study's objectives. First a descriptive analysis based on primary and secondary sources of data is undertaken in order to elucidate the structural features. Second, factor analysis employing the principal component technique is used to identify the most significant factors that motivate entrepreneurs to establish small scale manufacturing firms in Kisumu. Third, a multiple regression analysis employing the stepwise selection procedure and factor analysis are performed to determine which factors strongly influence the intra-urban distribution of

small scale manufacturing industries. Finally, a simplified input-output technique is used to establish the capital equipment, raw material and market spatial linkages of the small scale manufacturing industries. For research premise 1 and hypothesis 4, a sample of 197 industries was examined, whereas for hypotheses 2 and 3, a sample of 142 was used. The results of the multiple regression analysis are significant at ($P<0.00001$).

The study reveals that the informal industrial units are far more numerous than the formal small scale firms. The informal industrial units have distinct characteristics from their formal counterparts.

The investigation on entrepreneurial perception reveals that, in general, the factors which motivate entrepreneurs to establish industries in Kisumu are, agglomeration, industrial infrastructure, business information, and personal considerations. On the other hand, the variables determining the intra-urban spatial pattern of small scale manufacturing firms are, mainly personal considerations such as proprietor lives here and nearness to home and hence familiarity of area. At the same time there are some economic factors such as proximity to market, that play an influential though not determinant role.

The study also shows that the technological, subcontracting and market inter-firm linkages are not very significant among the small scale industries. On the other hand, there are strong raw material inter-firm linkages. The spatial linkages indicate that the small scale industries, particularly the formal ones have greater capital equipment linkages with the Rest of the World whereas the informal industrial units have strong linkages with the Local Area. The spatial raw material linkages with the Local Area and forward linkages with the Rest of the Country are generally strong.

Finally, the study observes a number of constraints hindering the development of these small scale industries. These include inadequate capital, lack of suitable industrial premises, inadequate supply of raw materials, and weakly-developed intersectoral and inter-regional linkages. The study recommends that government support and programmes concerning the small scale industries should be accorded a more central position in the industrial policies.

ACKNOWLEDGEMENT

I owe a special debt of gratitude to those many people, too numerous to mention by name who have read parts of this thesis in draft form and made many invaluable comments.I am, however, particularly indebted to Prof. Kwesi Darkoh, my supervisor for his direction and encouragement throughout the period of my graduate studies.

I am most grateful to Mr. Mohamed Shaban my research assistant, Mr. Justus Mwanje for his guidance on data analysis and to Mr. Kenneth Okello for his assistance with the computer programming.

I extend my sincere appreciation to the German Academic Exchange Service (DAAD) for offering me a scholarship, to the Council for the Development of Economic and Social Research in Africa (CODESRIA) for further financial assistance, and to Kenyatta University for giving me an opportunity to study further.

To Gilbert Arum for word processing the thesis and to Sam Okumu, for the drawings.

Finally, I am grateful to my family and friend, George Owuor who continued to provide much encouragement and moral support.

DEDICATION

This thesis is dedicated to my parents CHRISTOPHER and TERRY OPONDO whose foresight and encouragement has brought me this far.

TABLE OF CONTENTS

List of Tables — Page

List of Figures — Page

*I and II refer to the factor analysis of the perception and site variables respectively.

Chapter 1: Introduction

1:0. Introduction

This chapter starts off by giving the background to the problem. It then proceeds on to state the questions, hypotheses to be investigated and scope of the study. Thereafter, a brief overview of the study area, the research methodology and the definition of terms are presented. Finally, the relevant literature is reviewed and the significance of the study outlined.

Many of the Third World countries in the past favoured a strategy of development based on large scale capital-intensive industries. Industry was given preference over agriculture and some countries wanted especially to promote heavy basic industries including steel, cement and engineering. The preference for large scale and heavy industry producing products to replace imports (import substitution industrialization) was partly grounded in the writings of some of the 'pioneers' of development economics, for instance, Rosenstein-Rodan (1964) and Mandelbaum (1961). Often the latest and most capital-intensive technology was chosen simply for reasons of prestige (Little, 1987). In part this strategy rested on a widespread belief that rapid development was best achieved by emulating what was perceived to be the industrial structures of the developed countries. The fact that a great deal of industry in the industrialized countries was not of this kind was overlooked. This strategy came to be increasingly challenged. Many of the new industries proved to be grossly inefficient, and viable only because they were heavily protected from foreign and domestic competition and because they were directly or indirectly subsidised. Above all they failed to raise the living standards for the majority of the population for two reasons. Firstly, being capital-

intensive the number of people for whom they generated new incomes and employment was disappointingly small at a time when the labour force was increasing rapidly everywhere and agriculture had for various reasons failed to accommodate these increases. Secondly, being protected and inefficient, they caused domestic prices to rise well above world market levels and thereby reducing real incomes of the majority. Lastly, they generated no surpluses for re-investment.

With increasing urbanization in the Third World as a result of rapid population growth, the number of jobs created in industry and modern services has been insufficient to absorb the growing urban labour force. The small scale industry and particularly the informal sector became the 'last economic resort' for both the underemployed and the unemployed (Hofmann, 1986:263). A major consequence of the small scale industrial strategy has been that it is much more labour absorbing, and so creates many more jobs. The growing concern with income distribution and human needs in the 1970s called for a revision of policy even in countries where industrialization for export did not at first sight seem feasible. In many countries the supposed benefits of import substitution industrialization with its emphasis on capital-intensive and large scale production had failed to `trickle down'. Only a minority had benefitted whilst for the majority, real incomes had not increased (Killick, 1986). Ideas first expressed by Hoselitz (1959), then by Staley and Morse (1965), started to be taken seriously. They suggested that small scale industry was likely to be more efficient and therefore more appropriate. It is not true to say that the promotion of small scale industries received no attention until that time. But Staley and Morse's study gave the case for change of policy a new impetus as did Schumacher's (1974) influential book Small is Beautiful.

The idea that very small scale industry could perform a useful role did not go unchallenged. Large scale industry was still seen as the sector most likely to lead an economy on its path to rapid growth. No other sector was thought capable of being a leading sector in that sense. What was not recognized was that in many countries large scale industry had not proven to be the leading sector and that as a result of the policies of protection and subsidy used to promote it, it has more often impoverished economies instead of raising real incomes. This is not, however, to assert that small scale industry is likely to be a leading sector. One can envisage circumstances in which it is a leading sector, for instance, in countries lacking agricultural development and where industrialization takes place on the basis of labour-intensive small scale industry.

The move in favour of small scale industry received further support from the World Bank. The World Bank's (1978) sector policy paper, strongly favoured such enterprises and suggested that lending to them should increase from five to thirty per cent of the total within three years. It is also believed that small scale industry can spread the benefits of economic development more widely, in much the same way as small scale agriculture distributes increased incomes more widely than plantation agriculture.

Other arguments cited in favour of small scale industry are, first, that it permits a wider geographical spread of industry. This reduces the costs of urban growth by reducing the incentive to migrate to urban areas. It also fosters closer links with agriculture. Second, small scale industry provides opportunities for acquiring entrepreneurial skills and gaining business experience. Third, small scale enterprises are seen as human in scale, congenial to work in, convenient for clients, cheap and strongly competitive (Bromley, 1983 and Schumacher, 1983). Although a sizeable proportion of small scale industry is informal sector activity, there are in

addition small firms operating in a more regular fashion, using machinery to varying degrees and making more sophisticated products. Thus, they are more formal in the way they are run than is characteristic of informal sector. At the margin, they blend and there can be no hard and fast dividing line.

Small firms enjoy several advantages over large firms. First, many of them are located in rural areas, close to raw material sources and markets for consumer and capital goods generated by rising agricultural output and rural incomes. Large firms, on the other hand, have to incur large transport costs to reach sources of raw materials and markets that are widely scattered. Second, small firms sometimes maintain their edge over larger firms by subcontracting their services thereby allowing the former better use of their capacity, particularly where job orders are irregular. Subcontracting also helps them to avoid labour union problems during recessions. Third, small firms, find it easier to cater for individual differences in taste. For instance, in Nairobi's Gikomba open air market, the jua kali craftsmen are able to make various shapes of bed-headboard, without any increase in costs. Large firms find that impossible.

Policies towards small firms are thus of immense long-term importance to the employment and growth of the industrial sector in most of the Third World countries. Many studies suggest that trade, industrial and financial policies can interact to discriminate against small firms. For example, trade policies in some countries protect large firms more than they do small firms and they are often excluded from lucrative investment incentives. In fact many of the capital goods used by small firms such as sewing machines or outboard motors, are often classified as luxury goods and taxed accordingly. Moreover, surveys indicate that less than one per cent of small enterprises in the developing countries obtain credit at controlled rates from financial institutions, the remainder rely on

the informal sources. Thus small scale industry rarely has access to loans from commercial banks or other financial intermediaries.

Nevertheless, some Third World countries adopt special programmes to assist small scale industries such as providing working capital and investment finance at low rates of interest through banks. In a few countries, governments have introduced management and vocational training, provided infrastructural services and industrial estates, and promoted sub-contracting.

In common with other developing countries, Kenya has long had programmes for small scale development (Livingstone, 1982), but the idea that the informal activities taking place in the back streets of urban centres might actually be described as industry was new to most people. Far from receiving official encouragement, the informal sector was until recently widely regarded as a nuisance and as spoiling the image of urban centres (Elkan, 1987). Industries which started after 1960 were by Kenyan standards large industrial concerns which were highly capital-intensive. Considering Kenya's low technological base, this pattern of industrial development meant a heavy reliance on imported machinery as well as spare parts. Moreover, most of these industries were also import-oriented even in terms of raw materials. Thus the import substitution policy was not free from heavy foreign exchange outlays. Another major problem that has emerged in the 1970's is that of unemployment whilst more people have been put in the labour market, the industrial sector which is supposed to absorb these people has not been in a position to do so.It is estimated that by the turn of the century, the Kenyan population will be 35 million of which 14 million will be in the work force. About 10 million of these constituting 25 per cent of the total population will be living in urban areas compared to the present three million that is, 15 per cent in 1984 (Ikiara, 1987:50).

The Kenya Government's Sessional Paper No.1.(Republic of Kenya, 1986.b.) was partly initiated by a series of economic crises that Kenya faced since the 1970s, including the energy crises, domestic and imported inflation, deterioration in the terms of trade, global recession and droughts. The paper recognized that faster growth of the industrial sector will be a crucial factor in Kenya's attempt to effectively face the expected social and economic changes by the turn of the century. Manufacturing output is projected to grow annually by 6.5 per cent in the period 1984-88, 7.5 per cent in 1988-2000 or 7.2 per cent between 1984 and the year 2000. Although these growth rates are moderate in comparison to the past achievements, it will need greatly concerted efforts by the government and manufacturers in Kenya to achieve them (Ikiara, 1987).

It is realized that the creation of new jobs will not be achieved unless a large proportion of investment resources are increasingly directed to the small scale industry in general and the informal sector in particular, where it requires smaller amounts of resources to create a job. The paper stands out as the official document that has given the informal sector the highest recognition so far. The role of this sector, often taken lightly in the past, is regarded as crucial in the coming years, given the fact that 25 per cent of the total population will be living in urban areas by the year 2000, as compared to the present 15 per cent. Understanding the industrial structure and location of small scale industry in urban areas is an important prerequisite in Kenya's efforts to effectively face the expected social and economic challenges of the coming years.

1:1. Statement of the Problem

In Kisumu the rapid industrialization in recent years which has manifested itself in a proliferation of small scale industrial enterprises (vis a vis the large ones) has resulted in a clustering of these industries in the

municipality. Apart from the modern small scale industries which are found mostly in the urban fringe, the informal industrial units seem to have mushroomed all over the town. Despite the rapid industrial growth, small scale entrepreneurs seem to be in a poverty trap and a lot of them do not seem to have any upward mobility. Most of them, especially in the informal sector, seem to exist at very marginal levels. Those that are successful seem to be connected in some way with the large scale industries and are owned mainly by non-Africans. This perpetuates the superficial view that large scale industries are better than the small scale ones. In order to understand the intricacies involved, small scale industries need to be analysed in the light of their structural and locational characteristics.

The specific questions raised which constitute the problem for the study are:

(i) What types of small scale industries are found in the manufacturing sector of Kisumu municipality, and what are their structural characteristics?

(ii) What factors motivate entrepreneurs to locate small scale manufacturing industries in Kisumu?

(iii) What factors account for the intra-urban distribution of the small scale manufacturing industries?

(iv) What types of linkages exist between the small scale manufacturing industries and Kisumu's urban industrial economy?

1:2. Hypotheses/Research Premises

(i) Significant variations exist in the type, ownership and employment characteristics of small scale industries in Kisumu municipality.

(ii) H_1:There is a significant relationship between entrepreneurial perception and the location of small scale industries in Kisumu municipality.

(iii) H_1:Economic factors are relatively unimportant in the location of small scale industries in Kisumu municipality.

(iv) H_1:There are strong linkages between the small scale manufacturing industries and Kisumu's urban industrial economy.

1:3. Objectives and Scope

This study, therefore, has four aims. The first is to analyse the structure of the small scale manufacturing firms. This involves studying all those characteristics that influence the type, ownership and employment characteristics of the firm. The second is to determine the factors which motivate entrepreneurs to locate their industries in Kisumu municipality. These factors are determined by the entrepreneurs' perception of the most suitable town. The third is to examine the factors influencing the intra-urban distribution pattern, and the final aim is to investigate the inter-firm and spatial linkages of these industries.

1:4. The Study Area

The choice of Kisumu municipality as the study matrix is ideal for elucidating the problem for several reasons. The first is that unlike the other major urban centres, Kisumu is not particularly well endowed with large scale industries. Thus the small scale industries have sprung up to fill this gap in the municipality. The second reason is that empirical evidence seems to suggest that Kisumu has a greater potential for the development of small scale industries than either Nairobi or Mombasa. For instance, Aboagye (1986) in a study carried out on the informal sector activities in the three towns, has shown that the size of average initial capital input in small scale manufacturing is highest in Kisumu at K.Shs.5,279.3, while those in Mombasa and Nairobi are respectively K.Shs.4,502.6 and K.Shs.4,046.0. Also the average value of equipment per enterprise in Kisumu and Mombasa are significantly higher than those for Nairobi.

The survey shows that the average age of the enterprises in Kisumu is seven years and that for Nairobi and Mombasa was five years. The proportion of entrepreneurs who have completed primary education is greater in Kisumu (44 per cent), compared to Nairobi (32.6 per cent) and Mombasa (23.8 per cent). This is of particular importance today in view of the training facilities being offered to the small scale entrepreneurs.

In another study of non-farm enterprises in Kenya carried out by the Central Bureau of Statistics (1978) it was found that around two-thirds of the sample households in the Nyanza province are engaged in non-farm activities. This is appreciably higher than the national average. Most of the non-farm enterprises are small scale industrial enterprises. Manufacturing in Nyanza Province accounts for more than 40 per cent of the total number of enterprises (Freeman and Norcliffe, 1985). Finally, personal

considerations also influenced the choice of Kisumu as the author has lived in the area and is familiar with it.

The municipality of Kisumu is located in Winam and Maseno Divisions of Kisumu District in the Nyanza Province of Kenya (Figure 1:1). In population size, it is the largest urban centre west of the Rift Valley and ranks third in the country. It's strategic position at the focal point of a communications network makes it the regional centre of Western Kenya as well as the provincial and district headquarters and it is the dominant administrative, commercial and industrial centre for the region.As such it serves a hinterland of about 31,000 km occupied by over seven million people (Republic of Kenya, 1985). In the last 16 years, Kisumu's municipal boundary has grown up to a total of nearly 417 km^2 of which about 157 km^2 is water and approximately 260 km^2 is land. It now consists of five locations and 18 sublocations (Table 1:1 and Figure 1:2). Reclassification into more sublocations is among the reasons for Kisumu's fast growth[1].

Kisumu municipality which had a population of approximately 152,647 in 1979 (of which 51 per cent were male and 49 per cent female), has an annual population growth rate of 5.8 per cent (that is, including both natural increase and in-migration). According to Oucho (1979), the town accounts for 48 per cent of the urban population in the Lake Victoria Basin alone and three per cent in a national context. An analysis of the 1979 population census (Republic of Kenya, 1984.a.) concluded that the figures showed the existence of a relatively stable and mature population, rather than one characterized by in-migration. However, this is only true for the rural parts of the municipality and the old town. But within the peri-urban areas there has been a rapid growth of squatter settlements accompanied by an alarmingly high mortality rate. Of the estimated population about 50 per cent are under the age of 15 (Figure 1:3). This youthful population is a reflection of the rapid population growth in the

peri-urban areas. In such areas the population is expected to rapidly outstrip the areas's carrying capacity, leading to serious unemployment, under-employment and poverty. This is already typified by the alarming levels of malnutrition in the pre-school children in this area which is over 20 per cent of the total (Republic of Kenya, 1985:28).

1:5. Research Methodology

(i) Areal aggregation of data

The sublocations within Kisumu's municipality are used as statistical units within which the firms are located. The use of this statistical unit is justified, because data is more easily obtainable at this level. Moreover, these units are more or less uniform. Officially, there are 18 sublocations within Kisumu municipality, but in this study South Kisumu and Milimani sublocations are treated as one, under the Old Town, in order to achieve uniformity in size.

(ii) Sample frame

A list of the universe to be sampled was not available, therefore the researcher undertook a reconnaissance survey to update the aggregated listing of small scale industries (obtained from the Central Bureau of Statistics and the former Ministry of Commerce and Industry) to ensure a more realistic sample frame. Because of the tremendous number of small scale manufacturing firms (905) a sample survey was necessary. A random sample of 197 firms (Appendix I) was selected for detailed investigation and interview. Though strictly random, this sample was also stratified in terms of the 11 industry groups listed in Table 1:2. Adoption of stratified random sampling permitted inter-industry comparisons, although the small size of several strata sub-samples, and resultant imprecision of strata estimates must be borne in mind.

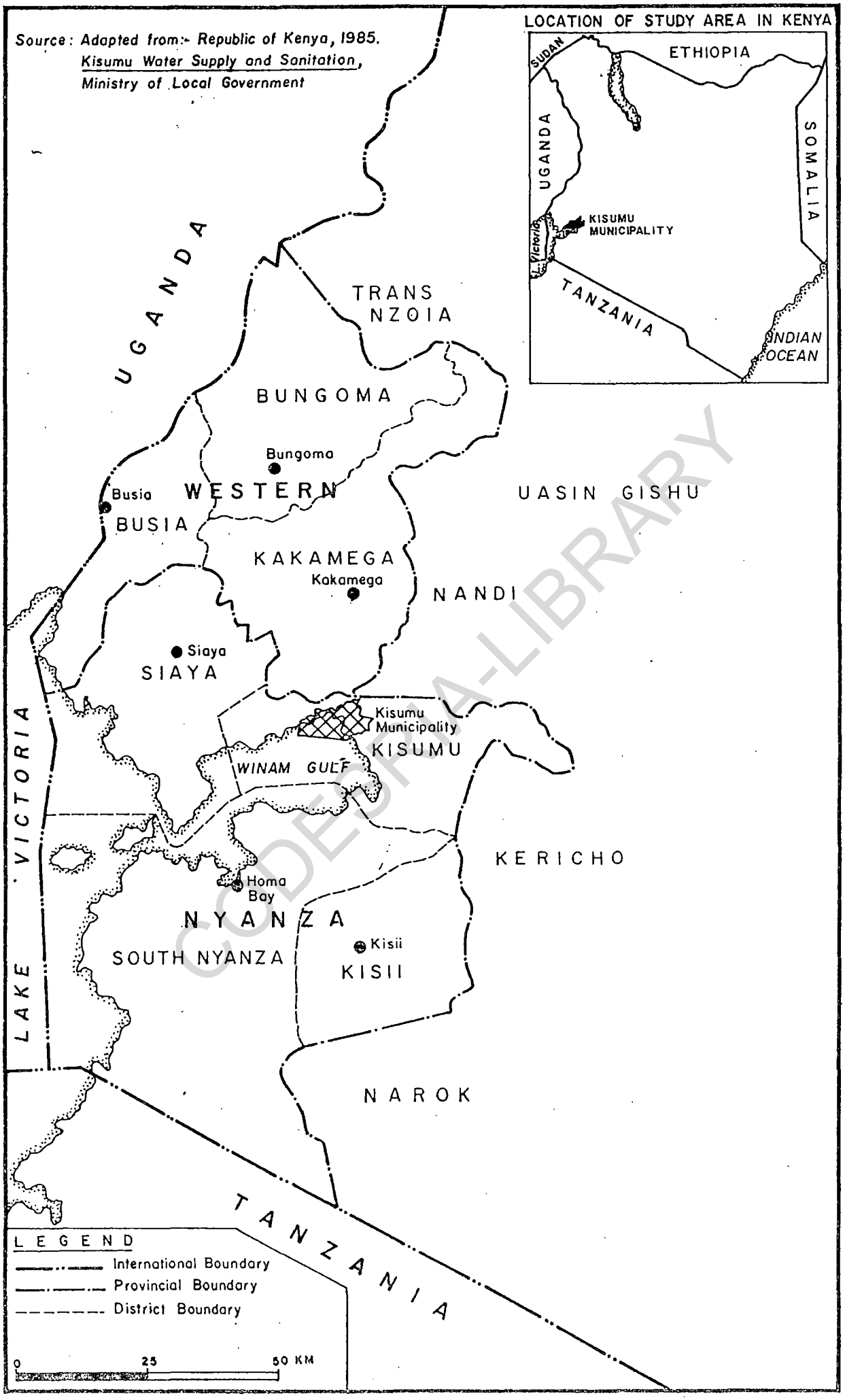


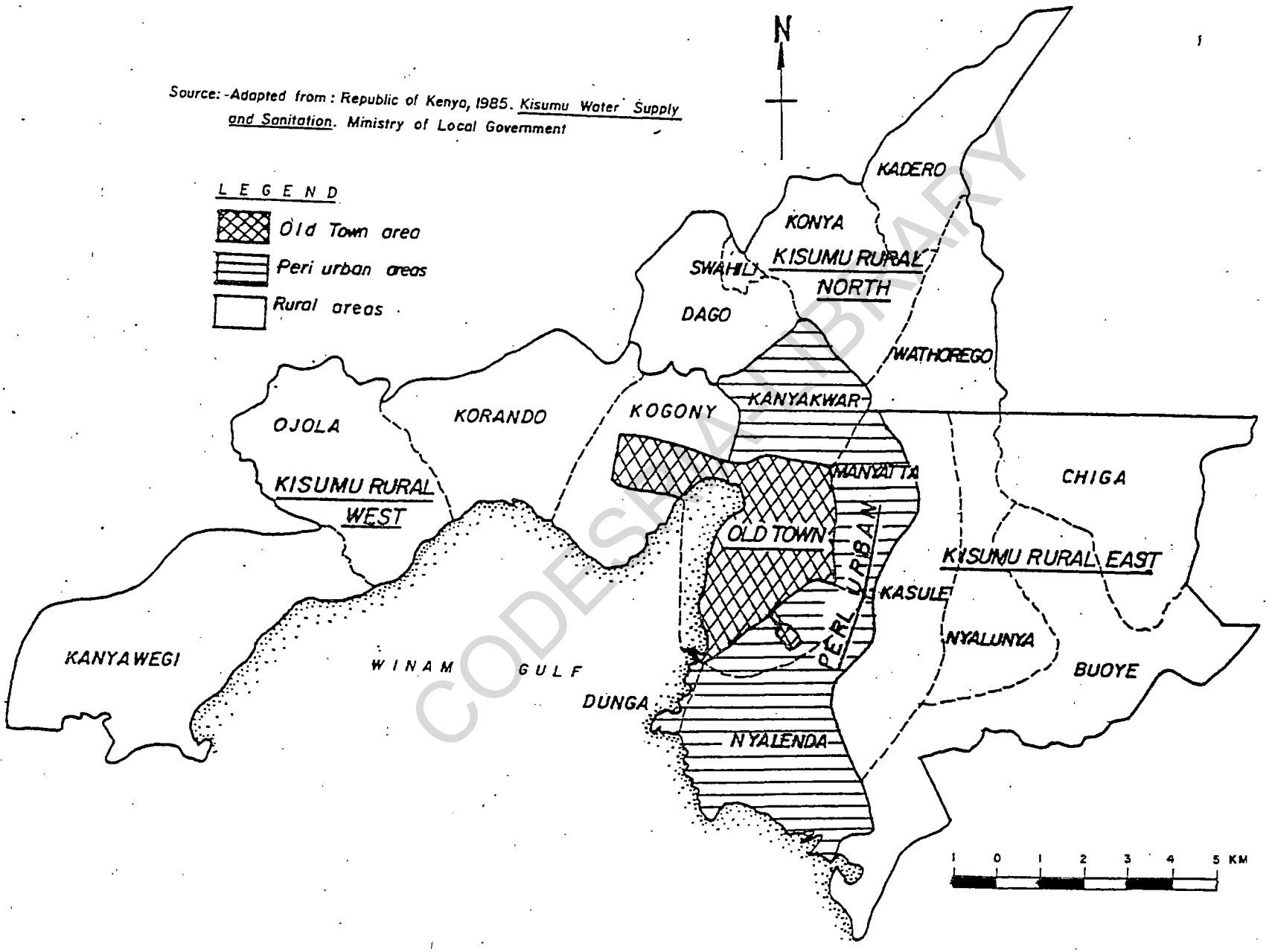
Fig. 1.1 LOCATION OF KISUMU MUNICIPALITY IN NYANZA PROVINCE

TABLE 1:1. ADMINISTRATIVE DIVISIONS AND POPULATION OF KISUMU MUNICIPALITY.

Location	Sub-Location	Population (1979)	Area (km2)
Kajulu	Kadero	5022	11
	Konya	4309	13
	Wathorego	5394	11
East Kisumu	Swahili	426	1
	Dago	2711	11
	Kanyakwar	714 7	10
	Kogony	6897	10
West Kisumu	Korando	6705	15
	Ojola	4031	17
	Kanyawegi	7505	31
Old Town	South Kisumu Milimani	38572	12
Kolwa	Nyalenda	21778	24
	Kasule	4317	15
	Manyatta	23008	19
	Nyalunya	4155	12
	Buoye	5084	26
	Chiga	5582	22
TOTAL		152643	260

Source: Republic of Kenya. 1985 . Kisumu Water Supply and Sanitation. Ministry of Local Government. Nairobi: H.P Gauff and Co. (for columns 1 and 2); and Republic of Kenya. 1979. '1979 Population Census Report" Nairobi. Central Bureau of Statistics.

Fig. 1.2 KISUMU MUNICIPALITY : SUB-LOCATIONS



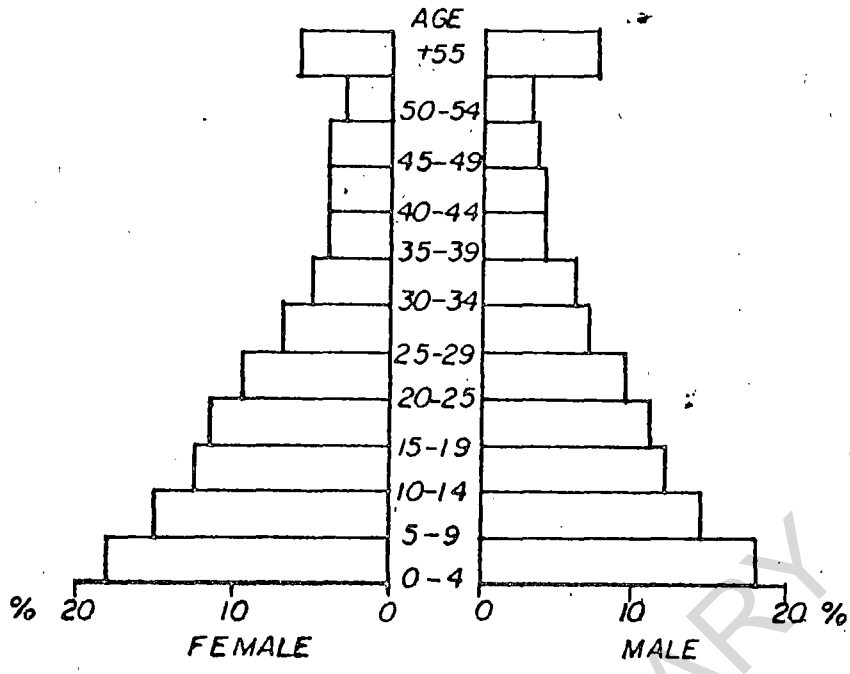


Fig 1:3 Population Pyramid for Kisumu

Source: Republic of Kenya ., Population Census, 1979.

The primary data was collected through a detailed questionnaire (Appendix 2) and personal observations. Secondary data was obtained from the following sources: maps of Kisumu, Provincial and Annual Reports of the following ministries: Industry, Labour, Local Government, Housing, Works and Physical Planning, Marketing and Supplies. Statistical Abstracts and other data were obtained from the Central Bureau of Statistics.This study is based on a survey of 197 firms in Kisumu. On the basis of the four-digit International Standard Industrial Classification (ISIC) these 197 industries fall into 29 industrial subdivisions (Appendix 3)[2] . For the purposes of data analysis and interpretation it was felt that the 29 subdivisions was too large a number. Therefore, the industries are regrouped into a more manageable number which are the 11 categories listed below:

(i) Food products

(ii) Wearing apparel

(iii) Weaving industries

(iv) Leather industries

(v) Wooden furniture and fixtures

(vi) Paper and paper products

(vii) Chemical and plastic products

(viii) Non-metallic mineral products

(ix) Metal works

(x) Machinery and equipment

(xi) Other industries

(ii) Techniques of Data Analysis

The techniques employed in this analysis are given in the substantive relevant chapters. Briefly however, for Hypothesis I, a descriptive analysis based on primary and secondary data sources has been undertaken. For Hypothesis II, factor analysis employing the Principal Component technique is used to identify the most significant factors that motivate entrepreneurs to establish small scale industries in Kisumu municipality. For Hypothesis III, multiple linear regression employing the stepwise selection technique and factor analysis are performed to determine which factors strongly influence the intra-urban distribution pattern. For hypothesis IV, a simplified input-output system is utilized to establish the linkages between these industries and Kisumu's urban industrial economy.

1:6. Definition of Terms

Small Scale Industries: a small scale industry is any unit engaging in processing and manufacturing, found in the formal and informal sector and employing between one to forty-nine persons[3].

Manufacturing: refers to all those processes by which raw materials or semi-raw materials are assembled, fabricated and turned into finished

TABLE 1:2. DISTRIBUTION OF ESTABLISHMENTS BY INDUSTRY: POPULATION AND SAMPLE

	POPULATION			SAMPLE		
	Formal	Informal	Total	Formal	Informal	Total
Food Products	25	16	41	11	4	15
Wearing Apparel	7	100	107	2	17	19
Weaving Industries	3	27	30	2	11	13
Leather Industries	9	33	42	1	10	11
Wooden Furniture and Fixtures	24	301	325	8	63	71
Paper and Paper Products	3		3	3		3
Chemical and Plastic Products	4		4	2		2
Non-Metallic Mineral Products		33	33		9	
Metal Works	10	298	308	4	45	49
Machinery and Equipment	8	2	10	1	2	3
Other Industries	2		2	2		2
TOTAL	95	810	905	36	161	197
Percentage Total	10.5	89.5	100	37.9	19.9	21.8

Source: Author's Fieldwork, 1988.

products. Basically the process involves chemical or mechanical changes of organic or inorganic substance into new products using handtools and limited machinery. Those industries in extraction, distribution of processed goods and provision of services are excluded.

Modern Small Industry: is that which serves the needs of the emerging modern economy, uses the results of modern science and technology in its production processes, and reasonably up-to-date ideas of organization and management in its business operations.

Informal Industrial Units: broadly cover all unregistered (and hence non-tax paying) artisanal enterprises. The informal sector is identified by such factors as the predominant use of hand-tools, importance of manual skills and an organization which is predominantly centred on the family unit. Such enterprises often have a relatively low employment profile (usually less than ten workers) little capital investment and products that call for artistic skills and/or decorative value. For purposes of this study, the main distinguishing characteristic is whether the enterprise is listed in the income tax or sales tax roles (and hence formal) or not (hence informal).

Spatial Factors: refers to the attributes of location and flow of goods and services over space. These are the determinants of industrial location.

Spatial linkages: refers to the ties or operational contacts that exist between an industry and the other industries in the urban and rural space economies. This study is limited to the capital equipment, raw material and market linkages.

Structure: structural features refers to the mode of ownership, labour, types, organization and interrelationships of industries.

Firms, Enterprises. Plants and Establishments: are used interchangeably to refer to the factory, workshop or household where manufacturing takes place.

Entrepreneur or Proprietor: refers to the person(s) who own the manufacturing establishment or who make locational decisions.

Urban Centre: any concentrated settlement with 2000 or more people engaged in non-agricultural activities.

Municipality: any urban centre or town in Kenya which has been created by an Act of Parliament.

Ward: an administrative unit of a city or municipality in Kenya.

Location: a subdivision of a district in Kenya headed by a Chief.

Sublocation: a subdivision of a location headed by an Assistant Chief.

1:7. Review of the Literature

This section provides the empirical and theoretical perspective of the study by reviewing the literature on small scale industries in general and then the substantive literature on industrial location and linkages.

Smallness became 'fashionable' in the 1970s as firms became aware of the disadvantages of large firms such as managerial diseconomies of scale. The small scale firm has become increasingly significant in the economies of most developed countries (Storey, 1983). For instance, Japan embarked on its small scale industrialization programme after the Meiji Restoration. The policy came to be never to locate any process in a factory that could be done in workshops or people's homes, thus saving on scarce foreign exchange where there was no equally economical small scale mode of production such as spinning, steel making or building of ships (Elkan, 1987).

Until recently the role of small scale manufacturing industries in the Third World has been erroneously viewed as an inevitably backward and dragging part of the economy. Despite the fact that Staley and Morse (1965) had been quick to point out that small scale industry can contribute significantly to the economic development of these countries. In an

employment-oriented development strategy emphasis should be placed on small scale enterprises because they tend to be less capital-intensive.

Geographers have not done as much work on small scale manufacturing industries in Kenya as have economists and planners such as Child (1973), Kabagambe (1975), Mureithi (1975), House (1978), Bassi-Zambelli (1982), Mochache (1985) and Aboagye 1986). The geographical studies of small scale industries in Kenya include the works of Wegulo (1984), Freeman and Norcliffe (1985) and Kinyanjui (1987).

Child (1973) and Mureithi's studies (1975) give the case for the promotion of small scale firms. Their studies reveal that these firms have low capital-output and capital-labour ratios; make a larger contribution to national economic development; and create more employment than the large scale firms. However, Child's (1973) study is limited to 87 small scale firms, that are clients of Kenya's four Rural Industrial Development Centres, while Mureithi's (1975) study on the other hand deals with only those small firms having five to forty-nine employees. Both studies exclude the very small one-man enterprises. Mureithi's study however, does not tell us much about the organization and entrepreneurship characteristics of these firms, whereas Child's study does throw some light on this.

Kabagambe (1975) seeks to evaluate the role of informal industrial units in developing the urban economy of Kisumu. The analysis shows that these firms are important in promoting employment and industrial entrepreneurship amongst the indigenous people, provide goods and services for the urban low-income groups and tend to be located in the periphery of the town for various socio-economic reasons such as possible tax evasion and personal preferences. The scope of the study is narrow since it is limited to only the peri-urban areas of Kisumu.

Bassi-Zambelli's (1982) report covers the identification matrix, existing institutional and legal infrastructure, constraints and problems, and proposes measures to promote the development of the small scale industry sector in Kenya. The report shows that although this sector may play an important role in accelerating the industrial development process in Kenya, there are a number of constraints. For instance, there is a lack of co-ordination within the programmes for the promotion of this sector. He recommends the creation of a co-ordinating body for programming, controlling and evaluating the projects in this sector. However, this study does not discuss the locational significance of small scale industries, which undeniably is an important part of this sector.

In a survey of 577 informal sector enterprises in Nairobi, House (1978) found that this sector is very diversified, both in terms of productivity and income levels generated and in the motivation of the participants involved. He concludes that the simple dichotomy of the urban economy in developing countries into informal and formal sector is clearly inadequate. Instead, he proposes that the informal sector should be further subdivided into at least two subsectors: an intermediate sector, which appears as a reservoir of dynamic entrepreneurs; and the community of the poor which contains a large body of residual and under-employed labour. However, the study adopted a rather broad framework including all informal activities and thus only examined a portion of the informal manufacturing units. But the findings on linkages in the form of subcontracting arrangements is of interest to the present study. His study reveals that access to subcontracts for the informal firms succeed in raising their incomes.

Mochache (1985) in his study of the cottage industries in Gikomba Market, Nairobi, shows that the main disadvantages facing the informal sector are, lack of suitable operation spaces, unfavourable institutional

organization of these activities, and the difficulties in obtaining sufficient operating funds. This study is important in that it highlights the constraints faced by informal sector entrepreneurs but it does not clearly bring out the linkages that this sector has with the urban industrial economy.

Aboagye (1986) sets out to study the constraints facing the informal sector enterprises in Nairobi, Mombasa and Kisumu and consequently device measures of assistance to this sector. The study finds that the urban informal sector in Kenya not only provides employment at a cost much lower than similar activities in the formal sector, but that it also provides incomes, basic needs and practical skills to a growing proportion of the urban labour force. The problems facing these enterprises include limited managerial and technical skills, shortage of financial resources and limited access to existing formal credit and banking facilities, lack of suitable premises, indirect official discrimination and occasional harassment from the city authorities. He suggests that special efforts, involving policy reforms and direct practical measures should be made to assist the artisans in the sector. Aboagye's study gives a very good detailed analysis of the structure of informal sector enterprises. But the formal small scale enterprises are not included, thus limiting the study's utility as a comparative analysis.

Wegulo's (1984) study demonstrates that industrial location in Nyanza has been influenced primarily by economic factors and that there is a greater concentration of industries in Kisumu town and district than in other parts of the province. He also finds that consumer goods production engages a greater proportion of the total number of operatives and also that agro-related industries have encouraged over-zealousness in the production of industrial food crops. The study also notes the increasing environmental pollution by manufacturing firms which may

gradually ruin the environmental quality in Nyanza province. Nevertheless, the study includes all the manufacturing enterprises in the large and small scale formal sector, thus the informal industrial units are not sufficiently dealt with. At the same time, although personal considerations are cited as one of the significant determinants of industrial location, the study makes no mention of entrepreneurial perception.

Freeman and Norcliffe (1985) argue the case for rural nonfarm enterprises in Kenya, since they believe that over-concentration on the urban informal sector has led to the former being neglected. They show that because the rural non-farm sector has its main relationships with peasant agriculture, is primarily dispersed and is much larger than its urban counterpart, it should be dissociated from the latter. Although the study reveals salient features of the informal sector, its scope both in terms of its geographical matrix and type of activities is too wide.

Kinyanjui's (1987) study investigates the location and structure of industries in Thika. Although the study analyses the entrepreneurial perception and spatial distribution of industries it is concerned only with the formal sector enterprises. Therefore, it does not, provide any information on the informal industrial units. At the same time, the analysis of the structural features is limited to the spatial linkages. The mode of ownership, organization and inter-firm linkages are not dealt with.

Industrial location theory attempts to explain the spatial distribution of industries. The Least Cost Approach postulated by Weber in 1909, explains location in terms of the minimization of costs, particularly transport costs. According to Weber, once the least cost location has been determined, there would be an automatic demand for the product. The neo- classical school of thought rejects the least cost model associated with Weber and instead substitutes it with the Market area or Profit

Maximization Model, first proposed by Losch (1954). This approach generally assumes that all firms have identical production costs, and sell to a spatially distributed market. The delivered price to customers varies with the cost of overcoming distance from the factory. Thus the entrepreneur in picking a production site selects one that enables him to operate at the most profitable level of output. However, empirical evidence from the developing countries (Darkoh, 1974, and Westcott, 1976) suggests that the entrepreneur rarely has knowledge of alternative location which would allow him to analyse the way in which his profits will vary over space.

Dissatisfaction with the classical and neo-classical industrial location theories is neatly summed up by Wood (1969:32):

> ---little fundamental progress appears to have been made in the study of manufacturing location. The principles laid down sixty years ago by Weber are accepted as fundamental and have been given an air of modernity by such recent contributors as Smith (1966) and Pred (1967).

Wood goes on to state that, so far, there is no evidence to imply that any single factor represents sufficient basis for explaining industrial location. He suggests that locational studies should analyse entrepreneurial decisions, since these form the filter through which the conventional location factors are sieved and given emphasis that may be peculiar to the individual firm in question.

McDermott and Taylor's (1976) ideas now form part of a growing consensus of opinion among locational decision studies. They decry the assumption that the decision-maker possesses the qualities of 'economic man' and suggest an approach to locational explanation which works from within the firm by attempting to gauge the reactions of the decision-makers to their environments. They argue that, it is the nature of the

information which generates the subjective context within which locational decisions are made. Their analysis reveals that in general the two dominant image components of the New Zealand manufacturers are factors of production (related to land and labour) and infrastructure (involving attitudes towards services and supplies). This overall perception is completed by two components (local government and market access) of considerably less importance.

It is not common for firms to undertake a strictly objective analysis of alternative locations. The speed with which location decisions have to be made, the many imponderables in the choice and the inevitable personal and emotional attachment of persons making the decision often lead to the neglect of many economic criteria. Even where firms do employ objective methods and try to qualify as many relevant factors as possible, personal preference, and previous experience of an area still influence their decisions (North, 1974).

Stafford's (1974) study of manufacturing firms in South Eastern Ohio shows that the most important locational factors are labour, personal contacts and information. His analysis further reveals that the traditional expected economic concerns of transport facilities and market accessibility variables are not very important.

The findings of Katona and Morgan (1952), Griffin (1956), Hunker and Wright (1963), Barter and Walker (1970), Logan (1966.b.), Hamilton (1974), and Greenhut (1967) also emphasise the influential role of personal preferences in determining locational decisions. These studies seem to follow in the tradition of the behaviourist school which emphatically rejects the assumptions implicit in the concept of economic man. The personal factors cited included personal contacts for business information, personal loans due to lack of institutional capital, desire for power, prestige and social approval, and love of one's own home town. These

studies are relevant to the present study as they give an insight into the way personal atitudes influence both economic and non-economic location variables. However, they deal with both large and small scale firms, and as such their findings cannot be said to be specifically those of small scale industries. They also do not focus on the informal sector.

A number of studies (Greenhut and Colberg, 1962; Mueller and Morgan, 1962; Norcliffe, 1975; and Gudgin, 1978) in the Third World have shown that factors influencing the intra-urban spatial pattern are far more numerous than is consistent with the principle of economic efficiency. Their arguements stems from the fact that when there is a dearth of information and where distortion of factor prices is prevalent traditional location factors have less relevance in explaining the location of firms. In fact, elements such as face to face relations, infrastructure, linkage, external and internal economies and governmental policies are more influential. Thus real world situations involve non-economic and often non-quantifiable variables which influence and sometimes determine location decisions, particularly for the small firms (Onyemelukwe, 1974). More important in the Third World are socio-cultural factors which play a prominent role in the location of these firms.

The role of the state in influencung the location of industries cannot be underestimated. In several developing countries manufacturing is now an important facet of the national economic space and government participation, both direct and indirect has been increasing. One conspicous aspect of the post war industrialization process in many Third World countries is that the state (that is, the government) has become an active entrepreneur either by setting up enteprises with state capital or by participating in semi-state enterprise. the later often are joint ventures with foreign concerns.

The state may also indirectly shape locational decision-making through the provision of industrial infrastructure and various institutional inducements. It may also through its development strategy and investment policies influence the spatial organization of the national economy in order to redress the spatial imbalances. For instance, today, in Kenya, with the current emphasis on District Focus For Rural Development[4] , an industry may be located in a particular area, not necessarily because it is the 'optimum location' but because of the need to bring about an equitable distribution of development activities.

The literature on locational studies in Kenya has not fully addressed itself to the importance of entrepreneurial perception in the decision-making process. It is only Kinyanjui's study (1987), cited earlier that seems to have adequately tackled this issue.

Ogendo (1972) in his book: Industrial Geography of Kenya says that the location of any one given industry is governed by the availability of capital, managerial skills and strong personal considerations. However, Ogendo's study is a macro-study looking at industrial location at the national level. The study does not describe the intra-urban spatial pattern. Furthermore, it does not make any attempt to analyse entrepreneurial perception in order to specify which factors motivate firms to locate their establishments in the various regions in Kenya.

Nixson (1973) in his study of industrial location in Kenyan towns states that the important factors which influence locational decisions are transport and processing costs, demand (market), personal cost-reducing factors and revenue-increasing factors. Although he attempts to analyse these locational factors by type of industry for the major towns, the informal industrial units are not included in his study.

Westcott and Norcliffe (1981:79) state that, since Kenya lacks a comprehensive locational policy for industry, 'locational decisions are

usually made on an ad hoc basis'. Although this study acknowledges that the pattern of direct government intervention and strong personal factors draw manufacturing firms to Nairobi and Mombasa, it does not go into the question of perception.

Kinyanjui (1987) utilizes the perception technique to investigate the factors that motivate entrepreneurs to establish industries in Thika. Her study reveals that government support to industry and accessibility to external business information are significant in the location decisions of the large scale industries. Whereas production cost-saving factors and accessibility to national markets are more important for the small scale industries. The study also analyses the intra-urban distribution of manufacturing firms in Thika. The results show that the locational factors that influence the general spatial distribution of these industries are, the price of land, presence of a major highway and presence of railway line.

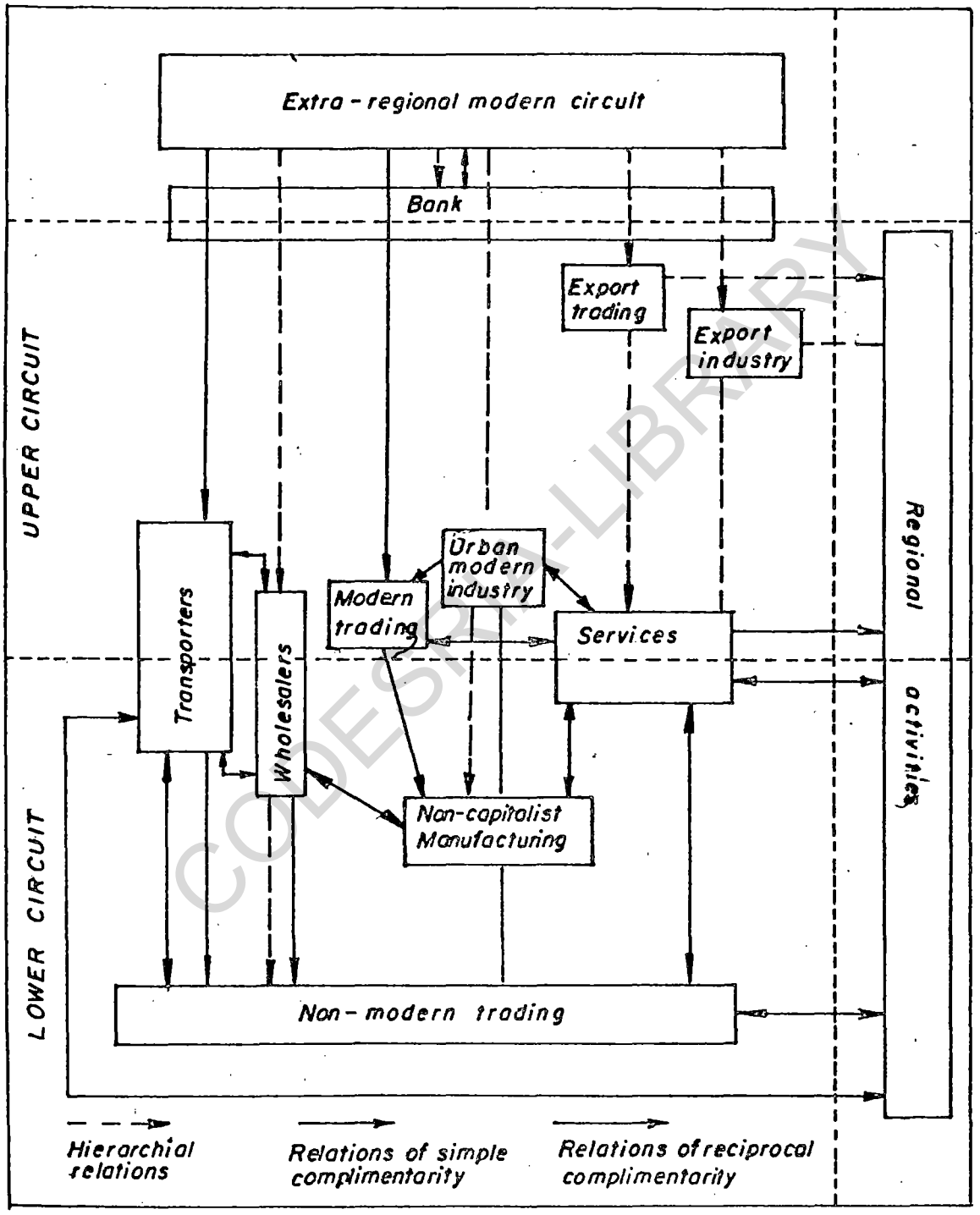
Santos (1979) and the ILO (1972) models of dualism in the Third World provide the theoretical framework of linkage analysis for this study. Santos (1979) states that, in most Third World urban areas, the city can no longer be seen as a single homogeneous entity. It should be thought of as two subsystems, namely the 'upper' or 'modern circuit' and the 'lower circuit' (Figure 1:4). Whereas the upper circuit has links with the 'world capitalist economy', the traditional or lower circuit is poorly developed and consists of small enterprises. These two circuits do not function as isolated systems but permanently interact with each other. Generally, as an economy becomes more modern, and as different intermediate and final consumer goods are demanded, the lower circuit must increasingly turn to inputs from the upper circuit. Equally, upper circuit demand for lower circuit outputs decreases as the economy becomes more complex.

The two-circuit model of the urban economy further postulates that generally there are two related industrialization trends in the Third World, one essentially linked to domestic consumption, and the other, based mainly on the external market. The former ('A' industrialization) requires external economies-external, that is to the firm - and is supported by regional or national infrastructure. While the latter ('B' industrialization) has no need for the infrastructure, and often creates its external economies outside the country. Therefore, an urbanization process comprising two subsystems of industrialization exist: 'Urbanization 1', the product of some combination of industrialization processes 'A' and 'B' and 'Urbanization 2' arising uniquely out of industrialization 'B'. It is possible for 'Urbanization 2' to evolve into 'Urbanization l' with time.

In the case of 'Urbanization 1', the more integrated a city's industrial activities the greater will be the multiplier effect on the surrounding region as well as the rest of the country. Despite a certain dependence on foreign countries, the industrial activities of cities undergoing 'Urbanization l' will be largely internally oriented. In 'Urbanization 2' linkage or multiplier effects seldom exist because the high technology activity is usually externally oriented both in terms of its supply of factor - inputs and the demand for its output.

The model further states that above a certain level of urban population, two types of lower circuits can be identified: one is situated in the central areas, and the other in the residential areas. The 'central' lower circuit serves the mass of the population, but is characterized by its privileged relations with the other central activities of the modern sector. Its customers, who often pay cash, may also be clients of the upper circuit. The residential lower circuit, on the other hand is broadly linked to popular demand.

Fig. 1:4 The Two Circuits: Evolution and Characteristics



Source: Santos, 1979. The sharedspace, London Methuen, p.8.

In the large city the specialization and diversity of lower sector services increases because of their collaboration with modern activities, particularly those located in the central areas. On the other hand, these two forms of lower circuit activity interact either through hawkers and street-sellers or through wholesalers.

The growth of the upper circuit stimulates a proliferation of lower circuit activities. Also the small scale activities, serve and sustain each other, mainly due to the presence of a mass of people without permanent jobs, performing any petty activity in order to survive. The upper circuit is often incapable of directly extending its regional influence. For example, upper circuit activity may assume a monopolistic form and set high prices, or it may internalize essential external economies and impede local economic growth or it may pursue a wages policy with unfavourable repercussions on the labour market. In such cases, despite its overall hegemony, the upper circuit has no real multiplier effects on rural areas and may even contribute to their impoverishment. The lower circuit then assumes the task of maintaining continuous relations with the immediate rural areas.

The two circuit formulation is useful in understanding the functioning of the city as a living organism, it also facilitates the explanation of the city's relationships with both its immediate hinterland and with other areas. However, Santos' (1979) model does not suggest a methodology that would be suitable for studying these interrelationships. The positive linkages between the upper and lower circuit activities such as subcontracting are not analysed in detail.

Economists associated with the ILO have also suggested a model of the dualistic structure of Third World countries (ILO, 1972). They distinguish between an informal sector of the economy characterized by:

(i) ease of entry

(ii) reliance of on indigenous resources

(iii) family ownership enterprises

(iv) small scale of operation

(v) labour-intensive and adapted technology

(vi) skills acquired outside the formal school system

(vii) unregulated and competitive markets

and a formal sector of the economy of which the principal features are:

(i) difficult entry

(ii) frequent reliance on overseas resources

(iii) corporate ownership

(iv) large scale of operation

(v) capital-intensive and often imported technology

(vi) formally acquired skills often expatriate

(vii) protected markets (through tariffs, quotas and trade licences) (ILO, 1972: 6). However, this division is rather broad and not well developed as an analytical framework.

Since the dualistic approach has become the theoretical basis for an extensive literature in liberal and neo-classical analyses of Third World economies a brief mention should be made of some of the pioneers of the approach. Boeke's (1961) explanation of dualism refers on the one hand to an urban market economy, usually of a capitalistic nature, and on the other hand, to a rural subsistence economy mainly characterized by a static agricultural system of production. Geertz (1963) first drew attention to the dual economic structure of the town divided between a 'firm-centred' economic sector and another sector which he termed the 'bazaar economy'. However, the urban dualism that is nowadays apparent in many developing countries is not due to any gradually disappearing contrast between a modern - dynamic growth pole and a traditional - static

sector, but rather to structural disturbances within the entire economy. It is McGee (1971) who transcended the conventional dualistic approach. For him, who had carried out detailed studies in several cities of the Far East, the activities of the informal sector or 'protoproletariat' as he calls them, are totally efficient within their own context. McGee has also shown that there exists considerable differentiation between the commodity flows which link together the two subsystems of the urban economy.

There is much to be said for a strict avoidance of dualistic frameworks. Such avoidance reflects a greater enthusiasm for studying relationships and interactions than for defining and studying specific categories, sectors or segments of the population, and also a strong belief that dualistic (two-sector) models have outlived their utility for academic analysis and policy-making. Since these models emphasise the wrong divisions and relationships, they underplay the significance of relationships which are most important. The study of these interlinkages could reveal patterns of exploitation and accumulation maintaining and even accentuating socio-economic inequalities, while the study of individual sectors may do little more than confirm the characteristics which they were assigned in their original definition (Bromley, 1983).

In the past only partial views of industrial linkages have been put forward. According to Tornquist (1968) it is more important to examine both the internal and external communications between functional units of firms and organization. Keeble (1969) limited his survey of industrial plants in Outer London to the exchange of material goods. Wood (1969) concludes that the relationships and linkages of the industrial firm with other organizations allow it to operate successfully by extracting profits from the surrounding economic and spatial system through contacts with material and semi-finished goods suppliers, wholesalers, retailers, consumers, transport operators, government and competitors.

Barter and Walker (1970) also advocate for a much broader and more detailed framework for linkage analysis. This should include both the goods and non-goods linkage patterns of the firm. In McDermott's (1974) study five of New Zealand's secondary population centres, are shown to have stronger local sales linkages than expected.

Gilmour's (1974) study found that at the aggregate level material linkages within Montreal appear to be rather weak, whilst those outside Metropolitan Montreal are stronger. However, when the data is disaggregated, the smallest establishments have the strongest connections with the local economy. Whereas, among larger enterprises the strength of external linkages are especially strong, for example, over half their transactions are made outside the province of Quebec .

Taylor (1978) studies the material linkages between Auckland manufacturers and their consumers. His findings suggest that organizational type, is much more important than industry in determining the spatial arrangement of manufacturer's sales linkages. In the light of these findings the present study analyses the spatial linkages of the formal and informal sector small scale industries separately. This is because the organizational characteristics of these sectors are markedly different.

Barr and Fairbairn (1918) analyse the provincial inter-industry linkages of manufacturing firms in Alberta. Their analysis reveals that Alberta has a weakly-developed regional industrial complex. This is evidenced by the fact that provincial inter-industry linkages are comparatively greater in number than in value.

Missen and Logan (1977) utilize the theoretical work of McGee (1971, 1976, 1977) and particularly, Santos (1977, 1979) to examine the lower circuit in the Kelantan plain in West Malaysia and its connections with the local upper circuit. The study shows that Kota Bharu (the capital of the

state of Kelantan) is the most important space for the upper circuit. It also shows that employment in the lower circuit is supply-determined. They also criticize the works of McGee and Santos, for concentrating on the city, and doing little in the broader content of regional development theory and regional planning.

The above cited studies on industrial linkages are important in that they highlight the significance of industrial interrelationships. However, because of their broad outlook they do not clearly bring out the linkages of small scale industries in general and manufacturing firms in particular.

Empirical evidence and studies in Africa show that manufacturing industries have poorly–developed intersectoral and interregional linkages. This situation is due to the fact that the processing industries are rarely integrated in the national economy in a manner that would trigger off chain reactions of growth in any significant direction. For instance backward linkages have been limited to simple backward linkages like tanneries and shoe factories. This in turn brings about over-dependence on imports for intermediate and capital goods and a comparatively small amount of fabricated mineral products for exports (Darkoh, 1973). For example, Darkoh's study of Ghanaian industries shows that the linkages between the Central Region and the Rest of Ghana are relatively weak. For instance, in none of the nine sectors of manufacturing was the Central Region dependent appreciably on inputs from the Rest of Ghana. It's linkages were with itself and the Rest of the World (Darkoh, 1973: 11).

Tanzania's 'basic industry' strategy (BIS)[5] is in part a response to this anomaly. The two major goals for industrial strategy were seen to be structural transformation and self-reliance. By placing emphasis on the utilization of local resources and production for the local market it was believed this would encourage and foster greater inter-industry linkages (forward and backward). The emphasis of the BIS on the production of

major producer goods with high potential linkages was particularly important because they have high linkages and externalities, which in turn permit the adoption of production techniques to local conditions and produce higher growth rate in the long run (Darkoh, 1984). In order to identify priority investments the BIS utilized an input-output matrix of a developed industrial economy. However, the BIS did not achieve the expected success, firstly, because its requirements for capital, foreign exchange and planning capacity were too high.Secondly, the cost considerations turned out to be more important than it had acknowledged and thirdly, the supposed benefits of some basic industries may have been illusory (Darkoh, 1984).

Empirical studies in Kenya also emphasize the existence of limited interregional and intersectoral flows. Ikiara (1977) shows that during the period 1953-73 there was an increase in transactions between Kenyan industries supplying small quantities of inputs to each other. But on the other hand, there was a decrease in transactions dealing with large quantities of inputs. These findings imply that the kind of industrialization which the Kenyan economy has experienced so far is mainly geared toward final demands, with little being directed to the production of intermediate inputs. This has led to increased reliance on imported inputs.

In a study of the intersectoral linkages in the Kenyan economy, Mureithi and Sharma (1984) reveal that agriculture is the dominant 'industry' in Kenya in terms of the number of people it employs and the value of output produced. In addition agriculture provides raw material for direct use in industry and thus offers forward linkages with industry. They conclude that industry is more dependent on agriculture than vice verse.

In a study of the spatial linkages of manufacturing industries in Thika, Kinyanjui (1987) shows that these industries have strong capital equipment linkages with the Rest of the World. Although these industries have relatively weak raw material linkages with the Local Area, those with the Rest of the Country are fairly well developed.

Much of the literature review has shown that, most of the work that has been done on small scale industries has been that of the economists. As such the spatial pattern of these industries has not been adequately dealt with. The studies on industrial location have clearly broken away from the classical and neo-classical industrial location theories, by emphasising the significance of personal considerations. However, the literature on locational studies in Kenya has not fully addressed itself to the importance of entrepreneurial perception in general and for small scale manufacturing firms in particular. The critique on the dualistic models has shown that it is very important to distinguish between two strikingly different conceptions of dualism. On the one hand, those two-sector models which assume that there is no relationship between sectors are entirely inappropriate and misleading. On the other hand those two-sector models which assume that one sector dominates, and that interrelationships are both important and frequently exploitative, present credible and relatively useful images of Third World economies. The literature review therefore, suggests a new approach, which focuses on the small scale enterprise as the unit of study. To do this, a more detailed statistical and systematic analysis of the structural, spatial and industrial interrelationships is required.

1:8. Significance of the Study

The recognition of the economic importance of the small scale industry is rapidly changing the previously held negative view that these

industries do not contribute to economic development. However, the current over-emphasis on small scale industry may pose some danger due to the lack of substantial empirical evidence for policy formulation. As the literature review has shown major towns in Kenya except Nairobi, have not been subjected to a comprehensive analysis of the various spatial and structural components of the small scale industries. The present study is therefore, significant for three reasons. The first is that it attempts to evaluate the entrepreneurial perception and second the spatial distribution of small scale industries in Kisumu. The third reason is that it seeks to analyse the industrial relationships by focusing on the inter-firm and spatial linkages of small scale manufacturing industries in Kisumu.

The Kenya Government's planning efforts are now being shifted to encourage the small scale industries (Republic of Kenya, 1986. b .). This is being done through the provision of credit and training facilities for the small scale entrepreneurs. Since this study will investigate the spatial and structural characteristics of these industries, it could contribute toward better planning and policy formulation. It has also been shown that these industries make a larger contribution to the national economy by creating more employment opportunities than an equivalent amount of capital formation in the modern sector (Bassi-Zambelli, 1982). The important role that these industries may play in accelerating the industrial development process in Kenya is evident. Bassi-Zambelli, states further that this sector includes more than 96 per cent of the manufacturing employees in Kenya. The institutional framework for achieving these objectives is already in existence including mainly financial institutions such as Industrial and Commercial Development Corporation, Kenya Commercial Bank, the Kenya Industrial Estates, and the Kenya Industrial Training Institute. Nevertheless, it appears necessary to strengthen and co-ordinate these programmes for a higher participation of small scale industries in the

development of the country. In particular this study could guide policy-makers and planners on some of the factors to be considered in planning for Kisumu municipality's future structural and spatial development. The limitations of the study are discussed in discussed in chapter 7.

1:9 Footnotes

1 Prior to its boundary extension in 1971 the Kisumu urban area covered approximately 19 sq.km. The extension added approximately 400 sq.km to make a total area of 417 sq.km.

2 Although 33 industrial categories of small scale manufacturing enterprises in Kisumu are identified, four categories are not included in the sample for various reasons. These include: food products not already classified (n.e.c.), prepared animal feeds, drugs and medicine, and tanneries and leather finishing. In the case of the first three categories above the proprietors could not be located and the workers did not give any meaningful information. The three first-stage processing tanneries, refused to be interviewed on the grounds that they are not manufacturing enterprises but only collection and storage centres.

3 A universal definition of what is and what is not informal as opposed to the formal modern sector does not exist. However, this study has adapted the definitions utilized in the Kenya Development Plan (1984 - 1988: 199); the UNIDO Report by Bassi-Zambelli (1982 : 5-10) and Staley and Morse (1965) to classify the small scale industries to be investigated.

4. The strategy of District Focus for Rural Development is based on the principle of ministries and districts having complementary responsibilities. Responsibility for the operational aspects of rural development is delegated to the districts. Responsibility for broad policy, and the planning and implementation of multi-district and national projects remain with the ministries. The objective is to broaden the base of rural development effort, encouraging local initiative that will complement the ministries' role, thus improving the productivity of development work and increasing effectiveness in problem identification, resource mobilization, and project implementation.

5. The BIS was the centerpiece of Tanzania's Third Five Year Development Plan for Economic and Social Development which came into effect from 1967 to 1981. For further information see Darkoh (1984, 1986).

Chapter 2: HISTORICAL PERSPECTIVES

2:0. Introduction

This chapter focuses on the industrial evolution of Kisumu, with a view to demonstrating the influence colonial and post-independence policies have had on the structural and spatial characteristics of industries. It starts by giving a brief outline of the origin of Kisumu town, followed by a description of the industrial developments that have occurred over the different years. In order to elucidate the salient features more clearly, the historical evolution of industries is analysed within the following time periods: 1903 to 1961 and 1962 to the present. This two-phase periodisation is necessary since it lends itself to tracing the development of industries as they become more advanced and complex in their technological, organizational and productive characteristics. At the same time, from its foundation in 1893 to 1903 there were no significant industries in Kisumu.

2:1. Origin of Kisumu

Prior to 1893, Kisumu was virtually non-existent. Kisumu was founded in 1893 when the chief engineer and a railway surveyor agreed to make it the terminus of the railway. It was named Port Florence after the wife of the chief engineer. A food depot was then established to feed forward survey parties, and telegraph lines, roads and other means of communication were immediately constructed to connect the new port with other settlements. In 1899 the civic headquarters moved from Mumias and the port equipment and transport staff from Port Victoria were transferred to Kisumu.

The plan for the township was drawn up in May 1900 and by December 1901 when the railway reached Kisumu the foundation had already been laid down for the growth of this colonial town, both as a regional administrative centre and a port. However, between 1901 and

1903 Kisumu had no effective government control and was regarded as a mere supply zone for the route to Uganda (Obudho and Waller, 1976). In 1903, the first township boundary of Kisumu comprising 12,566 acres of land and water was gazetted. It was granted the Municipal Board Status in 1941. Twenty years later it was elevated to the status of Municipal Council by Legal Notice Number 193 of 1st May, 1961. At Independence, the town covered a mere 57 km^2 , but today it covers an area of 417 km^2 .

2:2. Colonial Period (1903 to 1961)

The economic importance of Kisumu began when it started to grow as a supply centre for railway workers. The Indian dukawallas (shopkeepers) played an important role in the venture of supplying essential items to the railway workers. In 1908 Kisumu had a population of approximately 2097 increasing to approximately 3239 by 1909. At this time the four major industrial companies in Kisumu were distributive and collective branches of major companies based in Nairobi. These companies imported mainly consumer goods to be sold mainly to the European and Indian population in the township. They also exported raw materials (from Kisumu's hinterland) to Nairobi and Mombasa. By the end of 1911, the Indian traders were trading in livestock skins and acting as agents to business firms in Nairobi and Mombasa. The only manufacturing enterprises in existence by 1913 were the British East Africa Corporation cotton ginnery and an oil refinery, otherwise Kisumu was basically an administrative town with a very low industrial base.

More firms were established in Kisumu between 1918 and 1919 these included the India Standard Bank, Smith Mackenzie and Company, Singer Sewing Machines and African Mercantile. At the same time, Kenya which had been under the control of the British East Africa Company became a protectorate under Britain in 1895 and a Crown Colony in 1920.

This led to the gradual development of commodity production for the world market. This event had a direct bearing on the industrial evolution of Kisumu. Soon after large areas of the Nyanza province set aside for large scale agriculture were allocated to private industries to exploit the cotton, sugar, tea and groundnut farms.

Apart from the large scale industrial concerns, the small scale industrial activities were mainly carried out by the Indian community in the township, with the Africans engaged in these enterprises as casual and unskilled labourers. For instance, the fishing industry was undertaken by a very small number of Indian traders and d'how owners located at Nanga Beach, about two miles from the railway station at Kisumu. The Africans were employed as fishermen and to process the fish. However, the development of the fishing industry was a very slow one. Indeed, the industry does not appear to have been well established until the outbreak of the First World War. For example, the European gill net which was introduced in 1905, started to be used extensively in 1916, leading to a decline in the number of fish. It was then realized that the time had come to take control of the fishing industry in order to avert the possible extinction of the Tilapia. A Fish Control Board was set up in 1932 to patrol the Kenya waters of the Lake, and by 1936 over 2000 Africans were registered as fishermen.

The other small scale industries developed during this time were the manufacture of consumer goods such as furniture, animal oil and salt. These small scale industries owned by the Indians were located in the Indian Bazaar in the central part of the township and were geared toward the local needs of the community. The Africans' requirements (at the onset of colonialism) were mainly iron and brass wire, beads and cowries shells, which they used as ornaments; ostrich feathers and buffalo hides for their ceremonies. Jembes (hoes) which were being imported, were not

popular among Africans. However, locally-made jembes, which were made by Indian blacksmiths in thousands, were very popular and in great demand. So great was the demand that the Indian blacksmiths had to continue jembe-making operations even after midnight. The pioneer of the jembe-making industry was Hari Mavji, whose workshop was situated between the Police Station and the Native Civil Hospital at that time.

Small scale industries owned by Africans within the township did not exist[1], but there was hawking particularly of foodstuffs (such as maize, fish and vegetables) within the African settlements. These indigenous small scale activities were carried out under fear of the law, since racial policies did not allow the Africans to be engaged in commercial activities. Most of the small Indian dukas (shops) were at P. H. Clarke's market where the Africans also sold their earthpots, millet and other sundries.

It is also important to note that during this time there was neither mechanical transport, nor road systems. Inspite of this, Indian traders were engaged in trading in even the remotest parts of the Nyanza province. The goods were transported on porters' heads and Indian traders used to travel in hammocks or on mule back. Later on, they introduced ox-cart transport between Kisumu and Yala and then to Mumias. In 1910 the Yala Suspension Bridge was completed making motor transport possible.

The colonial government set-up is seen as the base upon which informal activities were initiated although during this time they were not as numerous as they are at present. This is because it is only the Indians' small scale activities that were tolerated by the colonial government. It is during the colonial era that the traditional African economy was destroyed and made dependent on an international capitalist economy by preventing real economic independence of the indigenous population. During this era there was no produce for export except ivory, hides and skins.

During the initial stages of British rule in Kenya, the main economic preoccupation was the extraction of raw materials and foodstuffs from the colonial territories which in turn provided markets for the products of the British industry. It is not surprising then, that during this time the colonial office was indifferent and often hostile to colonial efforts to set up manufacturing industries. In general industrialization was not favoured by the colonial government because they would loose revenue from import duty.

With the outbreak of the First World War, the European settlers in Kenya were unable to obtain the consumer goods that they had earlier imported by sea from Britain. All ships were in danger of attack during the war so that only the essential war supplies were shipped. In response to this state of affairs, the Kenya Industrial Management Board was set up in Nairobi in 1940 to encourage the local manufacture of goods formerly imported from Europe (Zwanenberg and King, 1975). During this time and before the Second World War there was comparatively little industrial development in Kisumu, apart from the processing of local crops and some old established undertakings such as the manufacture of ghee and the production of gold. Saw milling, light engineering, building, joinery and similar activities had been developed to meet local requirements. By the end of the Second World War, there was considerable industrial development to fill in the need for many types of goods, since the switch of world production to war requirements and the shortage of shipping had created a protected market.

After 1937 the growth of Kisumu township continued at a greater pace. Two other factors that contributed to this accelerated growth were the discovery of gold in Kakamega at this time and the fact that very prosperous sugarcane farming and refining industries were already in full swing in the neighbouring towns of Miwani and Muhoroni. Between 1934

and 1939 mining companies were set up with European technicians and an African labour force worked at unskilled jobs as surface or underground labourers. The gold itself was not refined in Nyanza, or any other part of Kenya, instead it was sent to refineries in Britain. Although the mining industry continued until 1954 it began to decline in the late 30s because the ore-body discovered was smaller than anticipated. By 1947 there were already many processing plants established mainly for food and other products. Agricultural production was stepped up, and complementary processing industries developed. The war also led to the widespread growth of the international firm. With the rapid increase of wage levels in Europe, many of these firms found it both useful and cheaper to produce their goods within the colonies, rather than to export them from Europe.

This left the small scale industries to the Indian immigrants and their descendants who purchased military equipment used in small scale manufacture immediately after the war. Many of the small scale industries in Kisumu appear to date from this period. Small scale backyard industries such as furniture workshops and wood curving grew up rapidly after 1945. Nevertheless, commercial and manufacturing activities were about the only viable options for the Indians in Kisumu since the British did not allow them to own agricultural land during the colonial period. Unlike the Africans, the Indians were not subjected to tight restrictions on sources of capital for investment in small scale activities. The Africans were left with no alternative but to engage in the residual small scale manufacturing functions left over from the pre-colonial days. These informal sector activities were further reinforced, because after the Second World War squatter settlements in the peri-urban areas of Kisumu town were seen for the first time. This population in the squatter settlements created an automatic demand for the informal sector goods.

By 1957, Kisumu had 7.83 per cent of the total establishments in the seven main towns of Kenya, engaging over 1,441 (5.22 per cent of the total) employees, and most of the manufacturing industries were located in Kisumu town (Colony and Protectorate of Kenya, 1963: 79-85). But by 1961 the proportion of people employed decreased from 5.22 per cent to 4.41 per cent (Ominde, 1968: 77-81). This is because between 1961-62 East Africa experienced an economic depression.

Generally, then the pre-1939 structure of industry in Kisumu was concerned with processing agricultural products such as wood, fish, groundnuts, bread and sesame both for export and the domestic market. During the 1940s and early 1950s most industries were comparatively small scale firms, while since the late 1950s the emphasis would appear to have changed so that now most of the firms seemed to be subsidiaries of multinational corporations.

The locational characteristics of industries during the colonial era can be explained by the fact that the population and industries were attracted towards the town of Kisumu. Prior to 1939 a great deal of the processing industry was located in its hinterland. However, those industries with rural raw materials, for example, sugarcane, tea and coffee were/and are still located close to the site of the mineral or agricultural resources. The secondary industries, were attracted by the market offered by the urban population in Kisumu and where urban economies are also available.

2:3. Post-Independence Era (1962 to present)

The period 1962 to 1972 is very important because it is the first full period of post-independence industrialization during which most of the urban economic activities were Africanized. This Africanization process changed the focus of Kisumu from an extranational to an intranational one (Obudho and Waller, 1976). Between the period 1964 and 1965, the

industrial research survey showed that, Kisumu accounted for only 3.4 per cent of the 95,692 manufacturing and service operations with five or more employees. These included 328 food processing, 1,053 non-food processing, 270 manufacturing, and 1,579 service industries (Ogendo, 1967:459 and 1969:840). This showed that although Kisumu is located in one of the richest agricultural regions in the country, it has very few agro-based industries (Table 2:1). By 1967, the major manufacturing industries in Kisumu included textiles, metals and engineering, sawmills and furniture, and spinning and weaving, employing 4,647 persons (Gitao, 1970: 140). Among the first large scale manufacturing industries to be established in the town were textile and soap manufacturing - Kisumu Cotton Mills and Baby Soap Factory respectively.

In comparison to other urban centres (Table 2:2), Kisumu's industrial sector has been relatively slow. Another illustration of this slow growth rate, is the fact that the proportionate urban manufacturing employment in Kisumu declined by 59 per cent between 1971 and 1974 (Republic of Kenya, 1985). This may in part be explained in terms of the industrial policies in the country where the combined factors of a strong private sector and lack of a definite industrial location policy have led to the concentration of industries in the other urban centres. But according to Obudho and Waller (1976), the location of Kisumu region in respect of world markets can be classified as unfavourable, since it is situated in the interior of the country, 700 kilometres from the Indian Ocean. At the same time, although the railway line from Nairobi to Mombasa offers a good access route to world traffic, the transport costs are considerably higher than in the areas around Nairobi and Mombasa.

TABLE 2:1 THE MUNICIPALITY OF KISUMU: AGRICULTURAL MANUFACTURING INDUSTRIES, 1964.

(a) Establishments by size, group and number

Types	1-4	5-19	20-49	50-99	100+	Total 1-100+	%
Food Processing	6	14	3	1	0	24	9.30
Non-Food Processing	80	40	5	4	2	131	50.78
Agricultural Total	86	54	8	5	2	155	60.08
Non-Agricultural	22	58	17	3	3	103	39.92
Total Kisumu	108	112	25	8	5	258	100.00
Percentage Total	41.86	43.41	9.69	3.10	1.94	100.0	0

(b) Manufacturing Employment by Factory Size

Types	1-4	5-19	20-49	50-99	100+	Total 1-100+	%
Food Processing	17	149	116	63	0	345	9.94
Non-Food Processing	161	354	144	246	309	1,214	34.98
Agricultural Total	178	503	260	309	309	1,559	44.92
Non-Agricultural	63	604	539	177	529	1,912	55.08
Total Kisumu	241	1,107	799	486	838	3,471	100.00
Percentage to Total	6.94	31.89	23.02	14.00	24.15	100.00	0

Source: R.B. Ogendo 1967. `The Location and Structure of Kenya's Agricultural Processing Industries'. Unpublished Ph.D. Thesis, U.O. London, p.518.

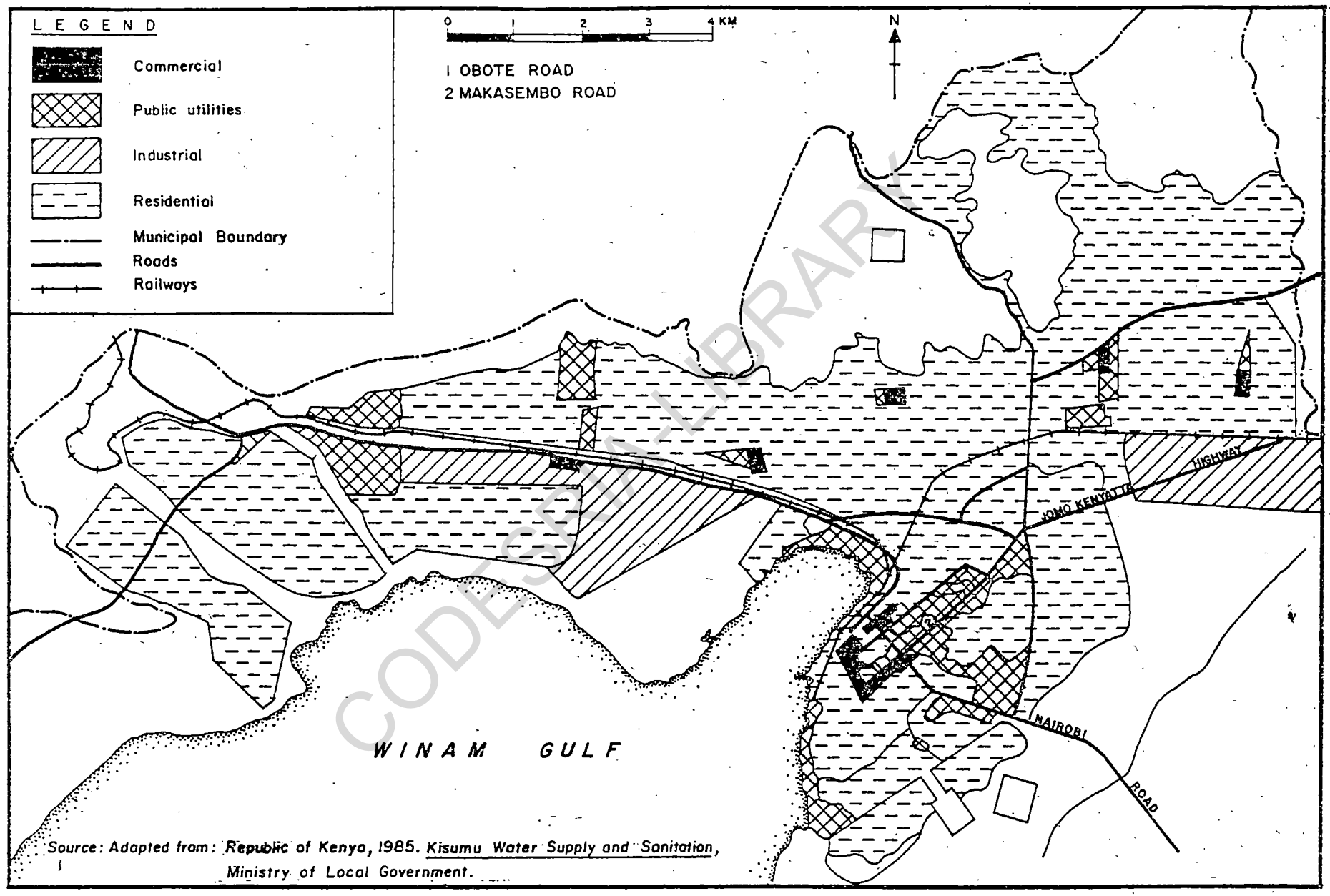


Fig. 2.1 EXISTING AND PROPOSED LANDUSE IN KISUMU MUNICIPALITY

By 1972, Kisumu still lacked such agricultural processing and fabricating industries as fruit and vegetable canning, meat processing, sugar, tea and coffee processing, alcoholic beverage manufacture and paper products fabrication, Of the industries located in Kisumu, the agricultural food processing industries were still less important in comparison with the non-agricultural manufacturing and service industries both in terms of operatives and value-added. The miscellaneous food processing industries in the town comprised of rice milling, spice grinding, non-soap associated edible oils processing, animal feed preparation and processing of miscellaneous food

However, today, many more industries have been established in the town such as the ultra-modern Kenya Breweries Plant, Kenya Matches, Kisumu Blanket Manufacturers, Foam Mattress Factory, Milling factories, battery manufacturing, engineering works and the soon to be rehabilitated giant molasses factory. In 1984, Kisumu is reported to have accounted for some 41 percent of all urban industrial and business enterprises in the Lake Basin region. Approximately, 48 artisanal and industrial processing and manufacturing enterprises could be identified by their type of products. These comprised beer, textiles, flour, soft drinks, mattresses, matches, soap, fishnets, peanuts, wire/cables, sweets, bread, concrete pipes, stationery, retread tyres, garments, plastic articles, sisal products, motor vehicle batteries, shipbuilding, general engineering, bicycle assembly, gas ovens, fish filleting and freezing and furniture making (Republic of Kenya, 1985: 8-9).

The structure of small scale industries in Kisumu's post-independence era has not changed considerably. The small scale industries are more numerous than the large scale ones, although the latter employ more people. Most of these industries are consumer or market oriented, geared towards meeting the local requirements. Some of these consumer

goods industries are dependent on imported raw materials. The modern small scale industries produce goods geared toward the urban population in general, whereas, the informal industrial units produce for the low-income urban population in particular. However, two export-oriented industries, namely fish filleting and manufacture of artificial fish fliers, have recently gained importance in response to the international market. But, the fishing industry geared toward the local consumption has been a very important branch in the economic history of the town since time immemorial. During 1965, for example, approximately 13,000 tons of fish were caught in the Lake Victoria. This produced an income of about £750,000 to 6000 fishermen. By 1967 the fishing industry in general gave employment to approximately 4000 other people[2].

Most of the large scale industries are located in the industrial area close to the lake (Figure 2:1) and runs parallel to the lakeshore. The area is served mainly by the railway and acts as the terminus of the two railway lines that connect Kisumu with the rest of the country. In 1965 the industrial zone covered a mere 6.5 percent of all landuses in Kisumu (Republic of Kenya, 1969:9). At present the industrial area seems to be expanding in two distinct directions: along the road to Maseno in the northwest and along the road to Kibos.

The small scale industries are more or less scattered all over the town, with quite a number of them located in the low income areas. The Kenya Industrial Estates (KIE) which started their operations in 1974 in Kisumu offers industrial sheds mainly to the modern small scale manufacturing industries. By 1976, 22 factory sheds had been erected and offered to small scale manufacturing enterprises engaged namely in the manufacture of: frozen fish fillets, farm equipment, animal feeds, salt, plastic products, socks, drugs, cosmetics, printing paper and bicycle assembly.

TABLE 2:2. PERCENTAGE OF WAGE EMPLOYMENT IN MAIN TOWNS.

	NAIROBI		MOMBASA		NAKURU		THIKA		KISUMU		ELDORET		OTHER	
Year	M	T	M	T	M	T	M	T	M	T	M	T	M	T
1963		53.9		18.6		3.9		1.9		4.3	4.3	3.3	10.9	14.1
1967	50.8	54.5	19.9	19.1	5.0	4.3	5.0	1.8	3.7	3.9	3.9	3.1	10.5	13.3
1968	48.0	53.6	23.3	18.8	5.3	4.7	5.4	2.0	3.9	4.3	4.3	3.1	10.2	13.5
1971	47.9	55.0	20.5	17.9	5.3	4.5	6.1	2.3	5.1	3.4	3.4	3.1	13.6	13.0
1973	55.6	57.6	19.1	18.3	4.6	4.0	7.5	2.4	3.2	3.2	3.2	1.9		12.4
1974		58.9		17.9		3.6		2.4		3.1	3.1	1.9		12.2

M = Manufacturing T = Total.

Source: C.G Westcott. 1976. 'Industrial Location and Public Policy: The case of Kenya's Textlie Industry'. I.D.S. Working Paper No 288. U. O. Nairobi.

The primary objective in establishing the industrial estates was to stimulate entrepreneurship and promote small scale industrial development. The KIE in Kisumu offers a variety of common services and common production facilities to the occupants. These common services are among others, fire protection, security, banking facilities, warehousing, showroom, secretarial, book-keeping and extension services. The availability of standard factories on rent or hire-purchase basis is an inducement to firms of limited financial means. Other important inducements are the provision of industrial advisory services and the use of common production facilities and services.

Another important location of small scale industries is the Makasembo road reserve. Here there are numerous small scale establishments specializing in metal fabrication and repair. The informal sector establishments are more numerous than the formal sector ones. Kibuye open air market is also another important site for the location of small scale industries. Here the main types of industries are furniture-making, metal works and tailoring. Manyatta sublocation is gradually becoming more important for the location of small scale establishments engaged in wood furniture-making and metal fabrication, particularly since water, electricity and housing facilities have been made available. (Figure 2:1).

The informal sector in Kisumu - like nearly everywhere else in Kenya - is gaining an ever increasing importance, for the employment and income-earning activities of an increasing percentage of the active population. Quite in contrast to its growing importance, surprisingly little specific data on the informal sector of Kisumu is available. The total informal sector employment is estimated to have grown from 684 people in 1969 to 11,883 people in 1985, that is, by an average annual rate of some 19.5 per cent. During the same period, the proportion of employees in the

informal sector to the total number of employees in the formal sector rose from 5 to 37.5 per cent. Whereas in 1969, the total number of people engaged in the informal sector amounted to only 0.6 per cent of the total municipal population, this proportion in 1985 had attained 6.3 per cent (Republic of Kenya, 1985).

Generally, the industrialization of Kisumu in so far as the medium and large scale industries are concerned has not been very impressive. Apart from the small scale enterprises of the formal and informal sector, and the large scale industries such as the Kenya Breweries, Kenya Matches and the abandoned Molasses complex to be revived, no other important industrial undertakings have started their operations in Kisumu. On the contrary, one of most important local factories, the Kisumu Cotton Mills ran into serious financial difficulties and had to lay off a considerable number of its employees, although it is slowly but gradually recuperating under a new management. Several factors account for the inadequate performance of Kisumu as a major industrial centre. Firstly, is the lack of an industrialization policy. Secondly, the existing industry to a large extent is not complementary or integrated. This is because Kisumu lacks a capital goods industry which would make machines for consumer industries and stimulate further production (forward linkages). It would also stimulate widespread technical knowledge and the use of localised raw material and transport (backward linkages). Thirdly, Kisumu's geographical location declined in importance with the break-up of the East African Community. Prior to the break-up, the port of Kisumu together with the roads and railways that link it with the neighbouring areas was `more or less the nodal point from which activities and ideas have diffused within and beyond the Lake Region' (Oucho, 1980: 2). Finally, there are other locations in Kenya - older ones like Mombasa and Nairobi and newer ones like Thika and Eldoret - where prospects for a successful industrial operation

are seen to be much higher than they are in Kisumu. Infact, one of the establishments manufacturing electrical cables, had already acquired land in Thika and is in the process of moving the establishment there.

2:4. Footnotes

1 Most of the traditional crafts such as basketry, mat-making and pottery (previously found in the pre-colonial economy) were located outside the boundary of the new township.

2 This refers to those who were engaged either permanently or temporarily in ancillary industries such as boat-building, fish trading and the sale of fishnets.

Chapter 3: STRUCTURE

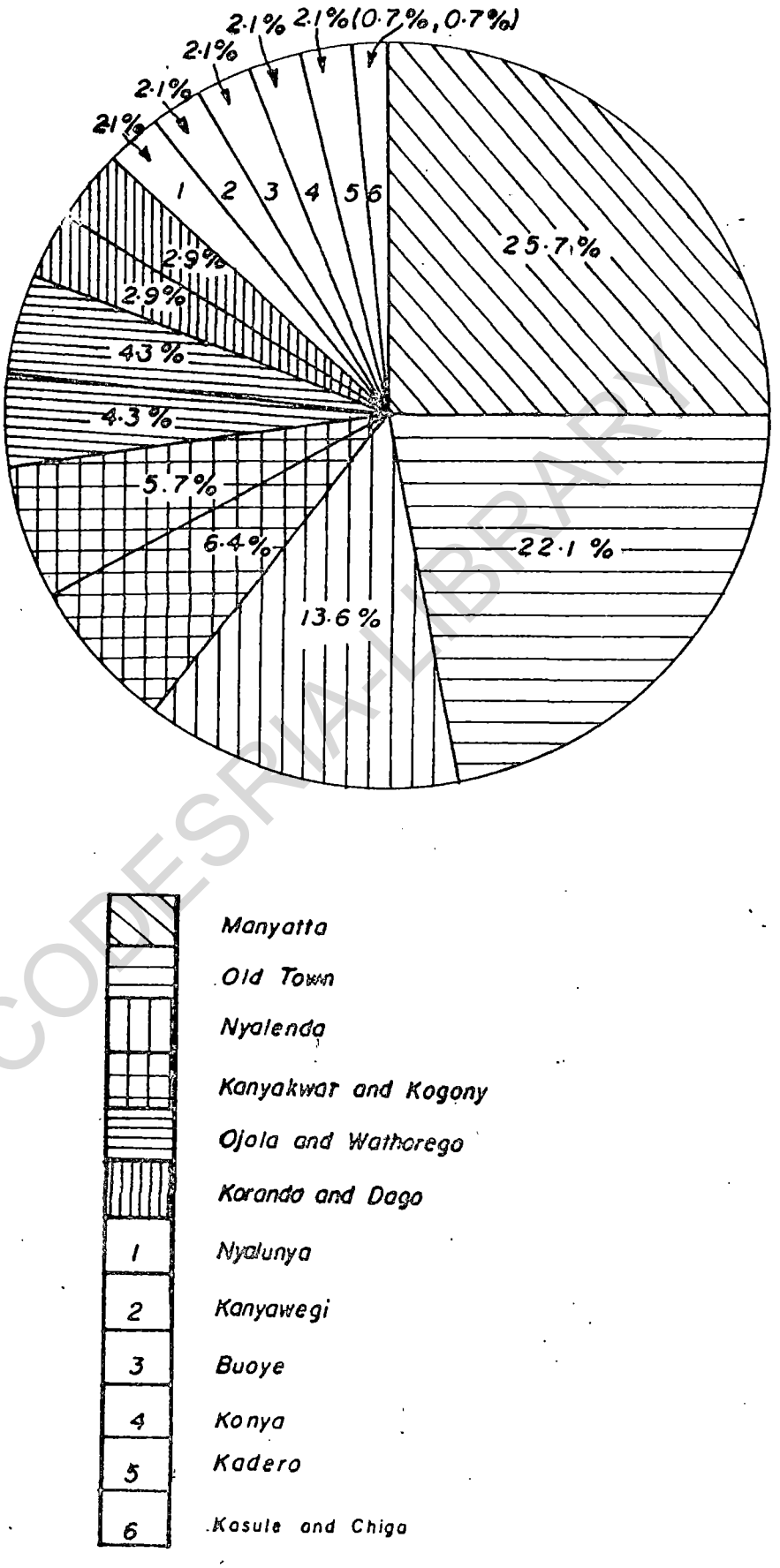
3:0. Introduction

The aim of this chapter is to gain an understanding of the structure of small scale manufacturing in the light of the research premise that there are significant variations in the type, ownership and employment characteristics of small scale industries in the urban economy of Kisumu. To bring out the salient structural characteristics, the analysis and interpretation of data is accomplished under two major headings: (i) General Characteristics and (ii) Industry Sub-groups.

3:1. General Characteristics

Data on the place of residence of the entrepreneurs, shows that the majority of the entrepreneurs live in Manyatta, the Old Town, Nyalenda, Kanyakwar and Kogony (Figure 3:1). The formal sector entrepreneurs live within the Old Town in residential areas like Milimani, while the informal sector ones have residence in all the sublocations. Of these, Manyatta had the greatest portion because large areas of this sublocation have been set aside by the municipal council for residential housing, particularly for the low-income population. Housing schemes financed by various organizations such as the World Bank have been initiated, with the municipal providing water, electricity and roads. The survey collected data on the home area of the entrepreneurs. More than 98 per cent had lived in Kisumu district for more than a year, but only 61 per cent had actually been born within the district. The rest of the entrepreneurs mainly come from Siaya, South Nyanza and Kakamega districts. Aboagye (1986: 22-23) also found that Kisumu, Siaya and South Nyanza accounted for 91 per cent of the home area of informal sector entrepreneurs and he rightly points out that these figures seem to indicate relatively high unemployment rates in these districts. Because of this the entrepreneurs

Fig. 3:1 Enterpreneurs Place of Residence.



often migrate to the urban centre in search of job opportunities and ultimately end up in the informal sector. Other factors that account for this high percentage of the home area, could be proximity and ethnic connection. On the other hand the formal firms have been established to fill in the gap (mainly for the consumer goods) created by the large scale manufacturing industries which find it uneconomical to locate in an urban centre like Kisumu.

Educational background and training of entrepreneurs largely influence their ability to run their business and absorb managerial and technical skills.

TABLE 3:1. LEVEL OF FORMAL EDUCATION

Type of Education	Proportion (%)
None	9.8
Primary	47.2
Secondary	33.8
Higher	1.5
University	7.7
Total	100.0

Source: Author's Fieldwork, 1988.

For instance, the relatively well educated and trained entrepreneurs tend to engage in smallscale industrial activities where technical and managerial skills are essential for the successful management of the enterprise (Aboagye, 1986). Table 3:1 shows that a great proportion of them have formal education. Only 9.8 per cent have no formal education at all. The dominant type of education received is primary education. This may have far-reaching implications particularly with the increase in courses on managerial and technical skills offered by organizations such as the Swedish International Development Agency and the International labour Organization. Table 3:2 shows that a very small proportion (4.9 per cent)

of the entrepreneurs have no training, with the bulk of them (51.4 per cent) trained through apprenticeship. The majority of the entrepreneurs are men (84.5 per cent), the women form a small proportion (15.5 per cent) and are found only in the informal sector.

Most of the informal industrial units are privately owned, while in the formal sector they are mainly limited liability companies and/or family-owned. There are also five firms which are `self-help' projects, sponsored by Action-Aid, the National Council of Churches of Kenya (NCCK) or based on the local initiative of the people (Figure 3:2). Nearly, half of the industrial premises in which small scale manufacturing takes place are rented and 36.9 per cent of them are fully owned by the enterprise (Table 3:3). The last three categories in the table refer only to the informal industrial units and are indicative of the limited capital, among other things in this sector. The amount of rent paid ranges from K.Shs. 40 to 500 for the informal and K.Shs. 1000 to 20,000 for the formal sectors. The informal industrial premises are relatively cheaper since they are mainly in the open air. They are also carried out in semi-permanent structures such as corrugated iron and wooden sheds. Those in the formal sector are all modern permanent structures, which demand higher rents.

TABLE 3:2. TYPE OF VOCATIONAL TRAINING

Type of Training	Proportion (%)
None	4.9
At an institution	23.9
As an apprentice	51.4
As an employee in large firm	9.9
Self taught	9.9
Total	100.0

Source: Author's Fieldwork, 1988.

Data on the age of the enterprise show that 36.6 per cent of them are over ten years old (Figure 3:3). This indicates the stability and rate of entry of new enterprises in the small scale industrial manufacturing sector in Kisumu.

As might be expected very few informal industrial units have proper business records. Most of them only keep a receipt file and a cash book, to record the creditors and debtors. Those in the formal sector keep proper business records since they are all in the income-tax bracket. The majority of the informal sector entrepreneurs did not keep any cash budget, thus preventing them from doing any business forecasting or planning. Yet in order to get a loan from the bank an entrepreneur would do well to have a well prepared cash budget. Most of them show an inability to control inventories. The informal industrial units listed theft of stocks as a major obstacle, and this is not surprising since they had no system of knowing and maintaining the appropriate level of inventories which they should keep. According to Dickson and Gichira (1987) it is the entrepreneurial skills factor which causes most problems to the small scale enterprises. The owners lack the experience and certainly entrepreneurial skills and for this reason may suffer failure more than once until they have acquired sufficient experience and learnt new skills.

Nevertheless, 63.4 per cent of the respondents would like to go for further training with 58.9 per cent for managerial skills (Table 3:4). This is important in that the majority of them have realised the importance of entrepreneurial skills in the successful running of an enterprise. Although they would like further training, most of them are not aware of the alternatives available for them. A small proportion of the entrepreneurs who are illiterate feel that their mental knowledge of business performance is adequate.

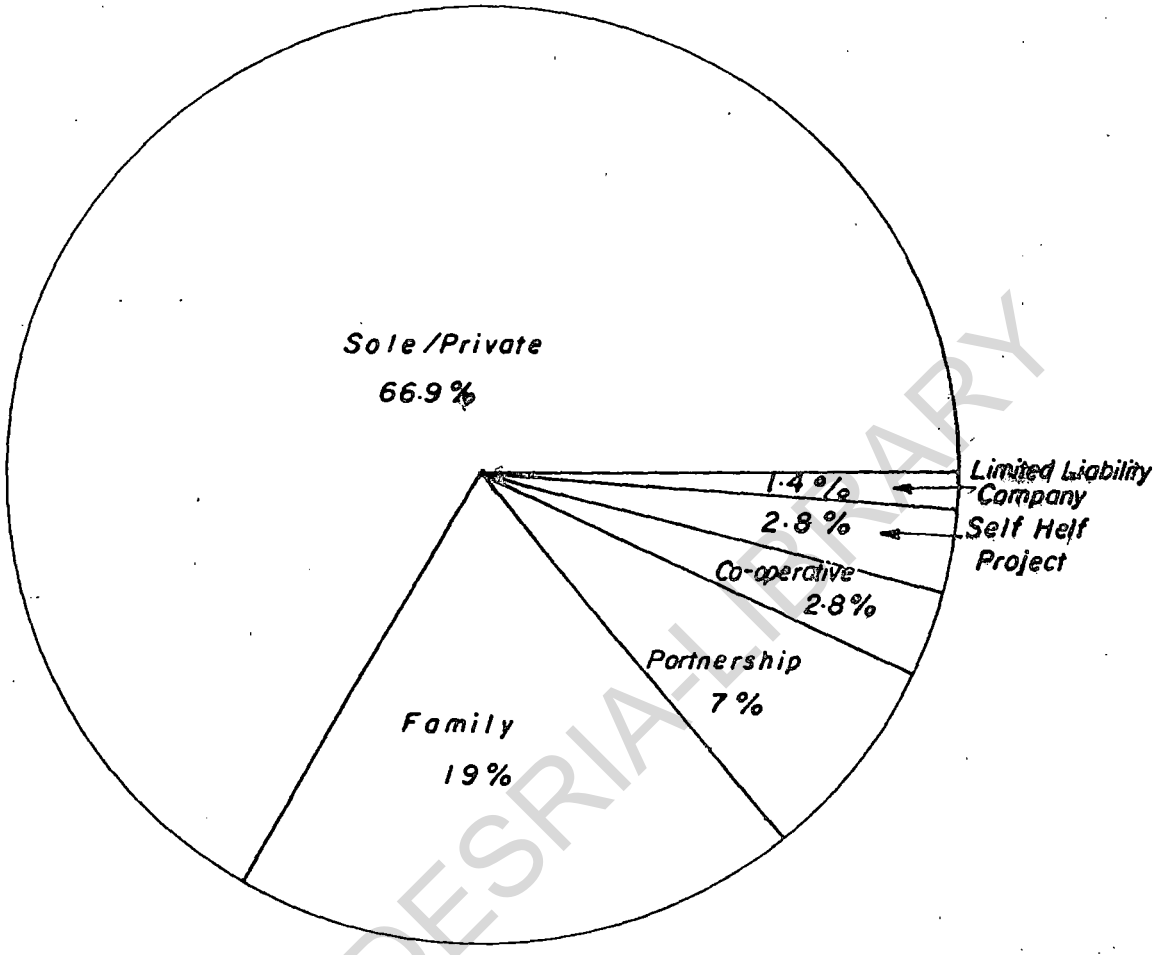


Fig. 3:2 Mode of Ownership

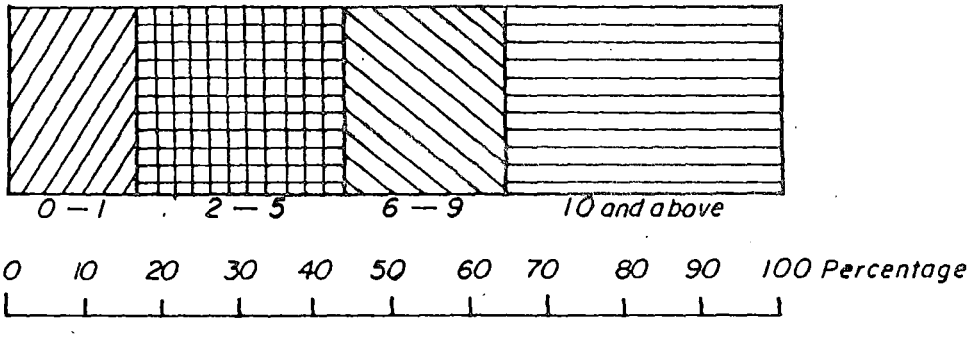


Fig. 3:3 Age of Enterprise

TABLE 3:3. OWNERSHIP OF STRUCTURE

Ownership	Proportion (%)
Fully owned	36.9
Rented	47.5
Neither rented or owned	2.8
Allowed by private owner	2.2
Squatters	10.6
Total	100.0

Source: Author's Fieldwork, 1988.

TABLE 3:4. TYPE OF FURTHER TRAINING

Type of Training	Proportion (%)
General Education	2.2
Accountancy	2.2
Managerial	6.7
Use of Modern Machines	58.9
Total	100.0

Source: Author's Fieldwork, 1988.

Infrastructure was determined by the type and amount of energy, water and services such as transportation and banking. Almost all the formal sector firms have electricity and water in their premises, whilst for the informal industrial units 50.7 per cent have neither water nor electricity. Electricity was the most common type of energy used, followed by firewood, diesel, solar, charcoal and paraffin. In general, energy use is not very important in the production process of these firms and 61.3 per cent do not use any form of energy. Energy costs range from K.Shs. 20 to 500 for the informal industrial units and K.Shs. 500 to 300,000 for the formal sector per annum. Other services utilized by these firms include transport, postal, banking, accounting, legal, residential and engineering

(Table 3:5). Legal and engineering services are only used by the formal sector enterprises. Very few of these firms could afford to own these services due to their small scale nature of operation. The cost of these services range from K.Shs. 100 to 50,000 per annum for the informal sector and K.Shs. 40,000 to 1.5 million for the formal sector.

The source of initial capital for the small scale enterprises is mainly informal sources. This in itself is a major factor which limits the type and size of investment of these firms. Table 3:6 reveals that own saving and personal borrowing is the greatest source of capital for investment (83.1 per cent). Commercial banks alone account for only 1.6 per cent and this in part explains the attitude of these banks to the small scale entrepreneur. Surprisingly, the government lending agencies, namely the Kenya Industrial Estates (KIE) account for only four per cent at a time when most of the government's efforts are being directed towards small scale enterprises. This reflects the under-developed nature of formal or institutional capital market in responding to the needs of the small scale firms. It also shows the failure of these firms, especially those in the informal sector to meet the requirements for obtaining formal financial assistance.

Although most of the formal sector firms rely on own saving for the initial source of capital, this is frequently augmented by loans from the formal sector for example, from commercial banks. Lack of capital is a major obstacle in setting up business for 53 per cent of the enterprises. The amount of initial capital varies considerably from K.Shs. 40 to above K.Shs. 2 million. In particular, for the informal industrial units it ranges from K.Shs. 40 to 100,000 and K.Shs. 30,000 to above 2 million for the formal sector.

TABLE 3:5. SERVICES UTILIZED BY ENTERPRISES*

Service	Proportion (%
Transport	3.2
Postal	29.4
Banking	18.2
Accounting	9.1
Legal	6.3
Residential	3.0
Engineering	0.8
Total	100.0

Source: Author's Fieldwork, 1988.

The initial capital is mainly used to acquire machinery and handtools. The cost of machinery ranges from K.Shs. 500 to 50,000 for the informal industrial units and K.Shs. 10,000 to 4 million for the formal sector enterprises. The informal industrial units that cannot afford to buy machinery, hire them for a fee. Most of the formal sector enterprises with machinery costing over K.shs. 200,000 are mainly found in the KIE sheds since the latter imports the required machinery for them. Once the machinery has been delivered, the enterprise starts paying for it in instalments over a specified period. Handtools are predominantly used by the informal industrial units, although some formal sector enterprises also make use of them. The cost of these tools ranges from K.Shs. 100 to 50,000.

The amount of goods produced also varies considerably. For the informal industrial units it ranges from K.Shs. 5000 to 200,000 per annum and K.Shs. 40,000 to 20 million and above for the formal sector.

The value of the major input (raw material) ranges from K.Shs. 1 to 100,000 for the informal and K.Shs. 60,000 to 15 million for the formal sectors. All the formal sector enterprises have a business licence, whilst for the informal industrial units some of them do not. Instead, they prefer

TABLE 3:6. SOURCE OF INITIAL CAPITAL

Source	Proportion (%)
Own Saving	66.3
Personal Borrowing	16.8
Commercial Banks	1.6
Government Lending Agency	1.1
Own Saving and Personal Borrowing	4.2
Own Saving and Commercial Bank	3.6
Own Saving and Government Lending Agency	3.2
Joint Ownership	1.6
Non-governmental Organisation	1.6
Total	100.0

Source: Author's Fieldwork, 1988.

to pay the municipal tax, which is paid on a daily basis at K.Shs. 2 on weekdays and K.Shs. 4 on weekends. The advantage in paying the latter is that when the enterprise does not open up for business, it is not charged. At the same time some of these informal industrial units cannot afford to pay for the licence at once especially when business is low. The business licence which is paid on an annual basis is between K.Shs. 240 and 20,000. It is only the formal sector firms that pay income-tax and this ranges from K.Shs. 1000 to 50,000 per annum.

Labour is subdivided into the following categories:

(i) working proprietor

(ii) unpaid family workers

(iii) permanent employees

(iv) employees paid on commission

(v) casuals

(vi) apprentices

The informal industrial units have the greatest number of employees paid on commission and apprentices. This is because the limited modern sector employment has not been able to cope up with the output of the

youths from the training institutions. At the same time the type of education that they receive fails to provide them with specialised skills for employment. As a result most of them are forced to seek skills and experience through alternative means, such as apprenticeship in the informal sector (Aboagye, 1986: 11). The informal industrial units cannot afford to employ all their workers on a permanent basis owing to the intermittent nature of work and limited working capital. On the other hand, the formal enterprises have a larger proportion of paid employees and casual labourers.

Apprenticeship, has long been recognised as the primary means of training in the informal sector. The apprentice, usually young, is under an agreement to serve the proprietor for a specified period. Depending on the level of apprenticeship, the apprentice may be paid low wages or be required to pay the master an initial training fee. The master usually provides a daily subsistence allowance.

A high proportion of the informal sector proprietors are engaged in the production process, this is basically because a large number of them start off as one-man enterprises. On the other hand the formal sector establishments all have between three to forty-nine permanent employees. Overall, about 22.8 per cent of these firms are one-man enterprises and about 65 per cent employ between two to nine persons (Table 3:7). It appears, that the number of women employed in these firms is still very low; they make up only 21.8 per cent of the labour force.

The role of the Kenya government in the promotion of small- scale industries seems to be minimal. At present the KIE is the main government agency for promoting these industries. The Kisumu KIE provides industrial sheds for industrial enterprises with a bias towards manufacturing. Presently, there are 22 such sheds occupied by formal small scale firms involved in the manufacture of fish fillets, fish meal,

socks, ammonia paper, cosmetics, drugs, farm equipment, bicycle assembly, commercial cooking equipment, plastic bags, protective clothing and artificial fish fliers.

Apart from this, the KIE also gives financial assistance. Presently 28 establishments in Kisumu district have received assistance. Similarly 70 (informal) jua - kali artisans have been given loans of K.Shs. 10,000 each, with only two permanently employed guarantors. On the other hand the Kisumu municipal council has provided an industrial site and allocated plots to some jua - kali artisans. It also plans to provide roads, water and electricity to the site.

However, most of the entrepreneurs interviewed expressed concern at the lack of government support for the majority of them. The support it seems is given to those firms which already have certain industrial facilities and therefore do not require urgent and immediate help as those in the lower rungs of the informal sector. This also brings in the issue of information dissemination, 15.5 per cent of the respondents are not aware of government programmes assisting small scale enterprises. Of those who have heard about it 49.4 per cent are not aware of the procedure and requirements of these programmes.

3:2. Industry Sub-groups

The types of activities under the different industrial categories are shown in table 3:8. This section aims at highlighting the specific characteristics of these categories.

(i) Food products

In this category there are women entrepreneurs in the grain milling enterprises and all of them have primary education. Those entrepreneurs in the fish filleting industries all have secondary education since technical knowledge and managerial skills are important for the successful running of these enterprises. Those who would like to go for further training listed

TABLE 3:7 EMPLOYMENT CHARACTERISTICS OF MANUFACTURING ESTABLISHMENTS.

Name of Industry	Number of Permanent Employees						Females	Males	Comm	Casual	Unpaid	Apprentice	Total
	0-1	2-9	10-19	20-29	30-39	40-49							
Food products		10	3	1	1		25	222		96	7		247
Wearing Apparel	5	12		1	1		99	178	21	100	7	7	277
Weaving Industries	7	5		1			101	33		80	10	3	134
Leather Industries	4	7					2	26	5		4		28
Wooden furniture and fixtures	17	49	5				11	267	84	5	6	29	278
Paper and paper products		1	1		1		3	50					53
Chemicals and plastic products				1	1		40	21					61
Non-metallic mineral products	6	3					14	3					17
Metal works	5	39	4			1	8	263	55	21	12	51	271
Machinery and equipment	1	2						8				2	8
Other industries			1		1		19	72		3		2	91
TOTAL	45	128	14	4	5	1	322	1143	165	305	46	94	1465

Source: Author's Fieldwork, 1988

the areas of managerial skills and use of modern machines. Most of these are family or privately-owned enterprises and a few are limited liability companies. All of them keep proper business records and have business licences. The premises on which the enterprises are located are either fully-owned or rented, and most of them have water and electricity available. The average cost of electricity used is K.Shs. 56980.3 per year, this is an indication of the relatively mechanized nature of these industries (Table 3:9). Most of the enterprises use machinery such as milling machines, boilers, moulders, slicing machines, industrial refrigerators and strapping machines. These are imported from West Germany, Israel and Britain. There is very limited use of handtools in this category and these consist of knives, manual grinders and files for sharpening the knives.

The initial capital input which is quite high for the formal enterprises (between K.Shs. 100,000 and 3 million) reflects their mechanization level. The informal industrial units which also use machines but at a limited level require an initial capital input of between K.Shs. 2000 and 60,000. The lower range is required by those enterprises engaged in processing the swim bladders of the Nile Perch or mbuta and this is mainly spent on buying knives and brushes. Although some informal grain milling enterprises utilise diesel-run milling machines, the electrical milling machines are more popular. This is because the diesel-run milling machines frequently develop mechanical problems. The types of labour utilized are permanent employees, unpaid family workers and casual labourers. There is also a significant number of working proprietors. The significance of permanent employees is reflected in the high labour costs which range from K.Shs. 3600 to K.Shs. 200,000 per year.

The fish filleting and freezing industry, which is a fairly recent venture is the most important activity in this category. This is in terms of

TABLE 3:8. CLASSIFICATION OF SELECTED SMALL SCALE MANUFATURING ACTIVITIES IN KISUMU

Food Products	Wearing Apparel	Leather Industries	Wood Furniture and Fixtures	Paper and paper products	Chemical Plastic products Products	Non-Metallic Mineral	Metal Worrks	Weaving Industries	Machinery and Equipment	Other Industries
Maize milling Bakery, fish filleting and freezing, animal fats, sweet marts and confectionaries, sugar jaggeries	tailoring knitting and dress making	Shoemaking and skin drums	Carpentry furnishings for homes and offices	Ammonia paper and lampshades and printing and publishing	Cosmetics protectiveand clothing and plastic bags	Pottery tile making	Blacksmithing metal fabrication, steel windows /doors, burglar proofing, carbody building, watertanks, cooking utensils, jikos and trunks	Cordage rope twine spinning weaving of textiles mats and baskets	Bicycle assembly lathe machines and refridgerators	Electic cables and fish fliers or hooks
Total No of firms										
15	19	11	71	3	2	9	49	13	3	2
Percentage share										
7.6%	9.6%	5.6%	36%	1.5%	1.0%	4.6%	24.9%	6.6%	1.5%	1.0%

Source: Author's fieldwork, 1988.

the number of employees and annual turnover. These enterprises are involved in a booming business, exporting frozen fish fillets and swim bladders of mbuta to Nairobi, Mombasa and international markets of Europe and Israel. Mbuta is bought at K.Shs. 3 per kilogramme from the fishermen, locally it is sold at K.Shs. 6, while in the international markets it may fetch up to K.Shs. 60.

Grain milling is another activity of growing importance in Kisumu. However, not many of these enterprises could be interviewed because most of the proprietors are in permanent employment elsewhere. The most important product is maize flour and is the staple food of the majority of the people in Kisumu. These enterprises are commonly found in the low-income areas. Most of the people here cannot afford to buy the maize meal flour that is manufactured by large scale industries such as Unga and Jambo Maize Millers. At the same time, these people grow or buy their own maize which they take to these posho (maize) mills for milling. Since these small scale mills produce maize meal flour much more cheaply, a lot of the schools get their maizemeal flour from them.

The manufacture of bakery products seems to be the exclusive domain of the formal sector. Probably this is because of the high cost of capital equipment required to keep abreast of the stiff competition in this industry. Contrary to the researcher's expectation there are only two small scale sugar cane processing industries, and these are engaged in the manufacture of jaggery products. The refining of sugar is dominated by large scale enterprises, for example, Miwani Sugar Company. The confectioneries and sweet marts are fairly well represented by small scale enterprises in the formal sector.

Table 3:9. ENERGY UTILIZED BY NUMBER AND TYPE OF INDUSTRY.

Type of Industry	Electr-icity	Diesel	Solar	Electr-icity & Diesel	Char-coal	Para-ffin	Fire-wood	None
Food Products	13	1	1	1	1			1
Wearing Apparel	7							12
Weaving Industries	3							10
Leather Industries	1							10
Wooden Furniture and Fixtures	20							51
Paper and Paper Products	2							
Chemicals and Plastic Products	2							
Non-Metallic Mineral Products			1				8	
Metal Work	29			1				19
Machinery and Equipment	3							
Other Industries	1					1		
Total	81	1	2	2	1	1	8	103
Percentage	40.7	0.5	1.0	1.0	0.5	0.5	4.0	51.8

Source: Author's Fieldwork, 1988

(ii) Wearing apparel

Under this category are the knitting mills and tailoring firms, with only two of them in the formal sector and 17 in the informal . The two formal sector enterprises are engaged in the production of uniforms and socks. The informal sector ones also manufacture uniforms, sweaters, cardigans, dresses, shirts and shorts. Tailoring is very common particularly in the municipal markets. However, it is necessary to distinguish between tailoring as a manufacturing industry and a service industry. Those enterprises which buy all the raw materials by themselves are considered to be manufacturing industries. Those that make only material brought by customers and also engage in mending and repair are considered to be service industries.

This category has the second highest proportion of female entrepreneurs after the food products enterprises. About half of them trained on the job and the other half in commercial institutions. Only a small number of them would like to go for further training, the rest feel that further training would hamper their market since they have already established good business relationships not only within the town, but also in the province. Nevertheless, most of them would like further training for their employees, especially those that have been trained on the job. These enterprises are either family or privately - owned. The majority of these enterprises have their industrial premises in the two main municipal markets, which they rent or pay municipal taxes. Therefore, most of them use manually operated machines since electricity is not available in the markets (Table 3:9). The machines in use are manual knitting and sewing machines which are mainly bought on hire-purchase terms. Those enterprises which cannot afford to buy these machines, hire them at an average cost of about K.Shs. 500 per month.

The formal enterprises on the other hand are located either in the KIE or on private land, which have electricity and water available. These enterprises are highly mechanized using imported machinery such as sock-making, over-locking, pressing and sewing machines. The average cost of electricity used in a year is K.Shs. 28,200. The initial capital input necessary is between K.Shs. 200 and 25000 for the informal industrial units and an average of K.Shs. 600,000 for the formal enterprises. The formal enterprises employ a large number of casual labourers particularly for loading and unloading of both the raw materials and finished products. They also have a high number of female employees. Surprisingly, one of the formal enterprises has apprentices, whom it trains for a period of six months. In the informal industrial units most of the employees are employed on commission and the numbers vary according to the demand.

(iii) Weaving industries

These industries include those establishments manufacturing bed covers, table cloths, blankets, skirt and shirt materials, tie and dye clothes, T-shirts, reed mats, baskets, rope and twine. Reed mat and basket weaving is predominantly found in the rural parts of the municipality. Whereas, the rest of the enterprises in this category are found in the urban parts. Cordage, rope and twine industries seem to be on the decline with only one formal sector enterprise (Toworo Industries) in operation. The other enterprises such as Kenepo, Deluxe, African Fibres and Kibos Sisal Industries have been closed down. This could be due to price fluctuation and lack of demand, because of the increased production of synthetic fibres.

The number of female entrepreneurs is roughly proportional to the male, and the majority of the entrepreneurs have primary education. Most of the entrepreneurs interviewed are those engaged in traditional mat-making and basket weaving who have received their vocational

training as apprentices. A large proportion of them would like further training in the use of modern machines, while a smaller proportion was interested in managerial skills. Most of the enterprises are privately-owned or co-operative ventures, and a few are `self-help' projects. Nearly all the enterprises own the industrial premises, since most of them conduct the business in their homes. But those enterprises engaged in weaving and spinning clothes and cordage and twine industries rent their premises and have water and electricity available.

Only three enterprises (Toworo Industries, Wananchi Crafts and Makutex Youth Group) utilize electricity in the production process (Table 3:9). The machines in use include sewing machines, looms, spinning wheels, whooping frames, and compressors. The rest of the enterprises use hand looms, manual spinning wheels and needles. The average initial capital required is between K.Shs. 40 and 3500 for those using manual machines and handtools and between K.Shs. 30,000 and 1 million for those with electric machines. This category has the highest number of casual labourers (100) but is represented only by one enterprise (Toworo Industries) which is a cordage and twine industry. These casual workers who mainly engage in collecting and feeding sisal into the straightening machines are employed on a seasonal basis depending on the demand.

(iv) Leather industries

The leather processing industry is dominated by shoe making and is mainly found in the municipal markets. However, most of the enterprises do more repair work than manufacturing. This is due to the high cost of raw materials, lack of capital equipment and skills. Those engaged in repair work are not included in this sample. There is also one informal industrial unit engaged in the manufacture of skin drums.

All entrepreneurs in this category are men, mainly with primary education and a few with secondary education. These enterprises are

either family or privately-owned. This industry sub-group has among the oldest enterprises, about 10 per cent of them were established in 1947. But when they were first established, they were mainly engaged in repair work. All of them rent their industrial premises which are mainly in the municipal market areas, particularly the informal industrial units. The formal sector enterprises are located within the Central Business District of the town where water and electricity is available. The rent varies between K.Shs. 100 and 2500 per month.

This category has a predominant use of handtools and only the formal enterprises use sewing machines. The cost of machinery ranges from K.Shs. 400 to 4000 for the formal enterprises. The initial capital necessary is between K.Shs. 100 and 2500 for the informal industrial units and an average of K.Shs. 3000 for the formal enterprises. Most of the entrepreneurs, particularly in the shoe making enterprises, are themselves engaged in the production process. There is also a significant number of apprentices who train for a period of one year. Otherwise, the majority of the workers are permanent employees.

(v) Wooden furniture and fixtures

The manufacture of wood products has the highest concentration of small scale industries in the town. The origin of the wood industry dates back to the time of the railway construction. When the Indian railway workers settled in Kisumu, quite a number of them earned their living from carpentry. The local population in search of income generating activities, took up this occupation after being trained on the job by the Indian employers.

The largest concentration of furniture workshops is found in Kibuye open air market (in the Old Town) under corrugated ironsheds, others are found in the low-income residential areas. Those in the Central Business District are mainly formal sector establishments. Altogether

eight formal and sixty-three informal sector enterprises were interviewed. Also included in this category is the boat-making industry, strategically located at the lake shore to tap the ready market of fishermen who need these boats for fishing.

Most of the entrepreneurs are well educated with more than half of them having trained at institutions. About 60 per cent of them would like to go for further training in the use of modern machines and managerial skills. Nearly all the enterprises keep business records, and about half of them have business licences while the other half pay municipal tax. Most of the enterprises rent the industrial premises, at a cost of between K.Shs. 30 and 3800 per month, but very few of them have either electricity or water apart from the formal sector ones. Those enterprises which do not own lathe machines (which are quite important in the production process) use those of the other enterprises for a certain amount of fee. Otherwise, they mainly use hand machines and handtools which cost between K.Shs. 900 and K.Shs. 300,000. Most of these equipment are locally available, but there are a few formal sector enterprises which have machinery imported from India in the late 1940s. This category also has some enterprises established in the 1940s, like the leather industries.

The initial capital input required is between K.Shs. 200 and K.Shs. 315,000. Most of the informal industrial units located in low-income residential areas start off with as little as K.Shs. 200 which they mainly use for buying raw materials since they often have a few necessary tools acquired during the period of training. This category has the highest number of employees paid on commission. The apprentices who also form a significant proportion of the workforce are required to train for one year.

(vi) Paper and paper products

These enterprises are engaged in the manufacture of lampshades, printing paper and publishing. All the entrepreneurs, who are only men in this category trained at an institution. The nature of ownership is family or partnership and the enterprises are located in modern buildings which have electricity and water. The average cost of electricity is K.Shs. 9470 per year. All of them keep proper business records. Since they are in the income-tax bracket, the enterprises in this category are formal sector firms. This can be explained by the high capital requirements of this industry, which on average is K.Shs, 2.95 million. This is mainly utilized in buying imported machinery such as forklifts, mixers, re-reeling and xeroxing machines, and imported chemicals. The type of labour utilized is permanent employees and casual labourers.

(vii) Chemicals and plastic products

Petroleum jelly, body lotion, plastic bags and protective clothing are the main products. Once again due to its highly mechanised nature these firms are only found in the formal sector, and are family-owned enterprises. They rent the industrial sheds of the KIE at an average cost of K.Shs. 7450 per month. These enterprises are the most mechanised, for instance some of the filling, packing, bag-making and bottle-making machines require only a few people to run them. All these machines are imported from Italy and India. None of the entrepreneurs want to go for further training since they are technically qualified and have managers, accountants and secretaries to do the paper work. They export their products to the Preferential Trade Area (PTA) countries, but the bulk of them are sold locally.

(viii) Non-metallic mineral products

Pottery and tile-making represent the manufacturing of non-metallic mineral products in Kisumu. Pottery is a traditional craft which is found in the rural parts of the municipality and it does not require

much capital. The latter activity which requires a comparatively greater amount of capital is a `self-help' project sponsored by Action-Aid. The lowest amount of initial capital is recorded in the pottery-making enterprises. This is explained by the fact that the raw materials - mud and water are collected by entrepreneur at a relatively small cost. At the same time the tools utilised are home-made. The female employees are greater in number than the male employees.

(ix) Metal works

The metal works enterprises form the second largest small scale industrial category. Metal working consists of a wide range of activities such as the manufacturing of steel or metal furniture and fixtures, structural steel products, cooking utensils and water tanks. Surprisingly, there is one female entrepreneur in the informal enterprises, but she does not engage in the actual manufacturing process. This industrial category has fairly well educated entrepreneurs, who have either technical or secondary education. Those who want to go for further training listed managerial skills and use of modern machines. Most of the enterprises are privately-owned and keep business records.

The amount of rent paid varies between K.Shs. 200 and K.Shs. 20,000 per month. Very few of them are located in the modern permanent buildings, because during the manufacturing process alot of pollution is emitted and it discolours buildings. For this reason most of them are found in open air and corrugated ironsheds. Most of the enterprises are situated where electricity is available since nearly all their work requires electricity, for example, when welding metal or steel. The cost of electricity ranges from K.Shs. 300 to 144,000 per year. The initial capital input required is between K.Shs. 500 and 100,000 for the informal industrial units and K.Shs. 60,000 to 1 million for the formal enterprises.

(x) Machinery and equipment

This category includes the manufacture of lathe and welding machines, and refrigerators by informal industrial units. There is also one formal enterprise engaged in the assembly of bicycles. Although all the entrepreneurs have secondary education all of them would like to go for further training in managerial skills and use of modern machines. The enterprises are family or privately-owned and they all keep records. The average amount of rent paid is K.Shs. 250 for the informal industrial units and K.Shs. 2500 for the formal enterprises. All the enterprises utilize electricity in the manufacturing process but do not use much machinery, instead the handtools are quite important. The initial capital required is between K.Shs. 5000 and 100,000 and this is mainly used in the buying of spare parts.

(xi) Other industries

Although two enterprises are classified under one this category they do not share similar characteristics. They are grouped together because they do not fit into any of the other categories. These two enterprises are engaged in the manufacture of artificial fishing hooks and electrical wire cables.

Lakeside Fly Tyers which manufactures artificial fishing hooks was established in 1977. It rents industrial premises of KIE at the cost of K.Shs. 1100 per month. Since it is a formal sector firm it keeps proper business records. Surprisingly, this enterprise does not use electricity in the manufacturing process, instead it uses paraffin stoves. This enterprise imports most of its raw material from Britain, which consist of coloured florescence, white deer hair, seal's fur, mustered hooks, lead wire, and white duck and hen pheasant quills. The only local raw material used is chicken feathers which is obtained from the slaughter houses in the town. It employs a total of 15 male and 15 female employees. The total cost of labour is approximately K.Shs. 140,000 per year. All the goods

manufactured are exported to Britain, Italy, Northern Ireland and the United States of America by air.

Kenby Cables which produces electrical wire cables is a family-owned enterprise and was established in 1979. It uses alot of electricity which costs about K.Shs. 252,000 per year, this high consumption of electricity is an indication of its highly mechanised nature. The machinery used is imported from Britain, West Germany and India. This costs about K.Shs. 2.4 million. This enterprise has a workforce of only 15 people including those who actually engage in the production process and the clerical staff. Most of the products are sold in Kisumu and Nairobi.

3:3. Summary of the Findings

In summary, this chapter has analysed the structural features of small scale industries in Kisumu municipality. It has been shown that Kisumu's urban industrial economy encompasses a whole gamut of small scale manufacturing activities, ranging from traditional crafts such as pottery and basket weaving to the sophisticated manufacturing of electrical machinery and appliances. These activities are, by and large, characterized by labour-intensive activities, smallness in scale and simplicity in management. Functionally the enterprises include processing of agricultural products, non-metallic mineral products, chemicals and plastics, and metal works. Characteristically, the small scale firms adopt labour-intensive technologies using mainly locally-made tools and materials. At the same time there are distinct characteristics between the formal and informal enterprises. Similarly, there are also significant differences among the industrial categories. Therefore, the research premise that, significant variations exist in the type, ownership and employment characteristics of small scale industries in Kisumu has been validated.

Chapter 4: ENTREPRENEURIAL PERCEPTION

4:0 Introduction

This chapter examines the factors motivating entrepreneurs to establish small scale manufacturing firms in Kisumu municipality. Before an entrepreneur establishes an industry, he has a perception of the various possible locations, and the impact the industry will have on other industries both at the structural and spatial level. Perception studies concentrate on the cognitive understanding that man has of his environment and the way in which this knowledge is stored and organized in the mind: that is, they are concerned with the image of the real world. One of the principal underpinnings of the perception approach is a function of the image, where the image represents man's link with his environment (Downs, 1970: 70).

The use of geographic space perception in studies of industrial location revolves around two basic ideas. The first one is concerned with the evaluation of the environment via spatial images, and seeks to relate the evaluation to decision-making and therefore to behaviour. An implicit assumption is that the perceived world is one of the fundamental criteria or bases used in making a decision, which is then expressed as behaviour. The question is, what factors do entrepreneurs consider important about their environment, and how, having estimated the relative importance of these factors, do they employ them in their decision-making activities? The second one is based on the concept of preference. The basic question is, given a set of spatially differentiated objects, how do entrepreneurs assess these on a scale of preference with relation to some specified behaviour objective? (Downs, 1970). Some of the techniques used to examine entrepreneurial perception include attitude-scaling, factor analysis and content analysis.

Behavioural studies of industrial location have often been based on some form of open-ended interview schedule in which entrepreneurs and managers have been asked to provide information pertaining to their processes of locational decision-making (Stafford, 1974). Such surveys try to identify factors and processes common to particular types of firms located in particular environments. Due to lack of sufficient time and high cost, these investigations inevitably draw direct conclusions from specific pieces of information provided consciously by the respondents. Such data obviously assist in interpretation but they do not usually allow rigorous statistical analyses particularly if collected verbally. The objective of most interviews has been to obtain information rather than to test the respondent or his information for specific attributes (Barr and Fairbain, 1978). However, through the use of entrepreneurial perception, the locational decisions of the entrepreneurs can be roughly divided into a number of broad groups, with regard to a particular attitude and the data collected can then be subjected to statistical analyses. There exists a significant number of such studies, each involving slightly different aims and assumptions. These include the works of Stafford (1974), North (1974), Rees (1974), McDermott and Taylor (1978), and Kinyanjui (1987).

Stafford (1974) uses in-depth interviews of primary decision-makers to study the location of manufacturing firms in South-eastern Ohio. For each of the 14 factors identified, response counts are done in order to measure how much more important one factor is than another. The underlying structure of the subsequent data is analysed using a content analysis technique. The analysis reveals that there is no objective way to ascertain the validity of any generalizations coming from this study, given the small and biased sample and open-ended interviews. But the use of entrepreneurial perception allows the influence of non-

quantifiable variables such as personal contacts which are usually down-graded in normative economic models to be assessed.

In studying decisions that amount to locational change in the United Kingdom (U.K) plastics industry, North (1974) examines the entrepreneurs' perception. The results he obtained from interviews with the management are analysed using interval scales, the Mann-Whitney Test of Difference and the Kruskalwallis Analysis of Variance test. The analysis reveals that through an examination of entrepreneurial perception, the different decisions made by these firms are obtained. Which in effect facilitates the understanding of the entire process of the industrial location of the U.K. plastics industry.

McDermott and Taylor (1976) use managerial responses in an attempt to understand the decision-making process in New Zealand manufacturing. The attitude profiles derived are collapsed by factor analysis to yield more general components of the management image of the local economic environment. The use of the attitude-scaling method enables successful coverage of a comprehensive sample of managers. This means that the conclusions drawn have not been prejudiced by the peculiarities of individual firms nor the diversity of management teams, decision-making procedures and individual respondents.

Rees (1974) conducts open-ended interview with executives of 20 large British and American firms who are involved in capital investment location decisions. The sample represents the upper end of the firm size spectrum, simply because of the greater amount of cooperation received from these firms. The limitations during the analyses of such a sample of firms is obvious, but since the study is more or less an exploratory study, these shortcomings may be overlooked.

Kinyanyui (1987) utilizes managerial perception to investigate the factors that motivate entrepreneurs to establish industries in Thika. The

data collected is then subjected to factor analysis to collapse the 27 location variables into more concrete factors. However, the variables included in the analysis, particularly of the small scale firms do not clearly bring out the effect of personal considerations, on the location of industries. The present study, therefore, attempts to evaluate entrepreneurial perception of small scale industries in Kisumu using attitude-scales.

4:1. Data Collection

The space economy of Kisumu is conceived as a set of economic, social and political entities of which small scale entrepreneurs in Kisumu might be expected to have a working knowledge, and the availability and cost of which might be expected to have a spatial variation. The attitude survey (Appendix 2) consists of 36 items (Table 4:1) which are identified from studies of industrial location and a pilot study. The inclusion of non-economic factors is of particular importance for small scale firms, the majority of which do not confirm to the purely economic assumptions inherent in the traditional industrial location theories.

Each respondent is offered the choice of responding in one of four ways by indicating the strength of each of these variables according to the level of importance. `Yes' and `No' responses are excluded since they hardly convey any attitude. Although, data is collected from 197 respondents only 142 yield complete satisfactory responses and thus utilized in the analysis.

4:2 Data Analysis and Interpretation

The hypothesis examined in this section states that, there is a significant relationship between entrepreneurial perception and the location of small scale firms in Kisumu municipality. Factor analysis[1] is used to identify the most significant factors that motivate entrepreneurs to establish these small scale firms.

TABLE 4:1. ENTREPRENEURIAL PERCEPTION VARIABLES

V01	Availability of cheap non-skilled labour
V02	Social status/prestige
V03	Availability of local capital for investment
V04	Nearness to home and hence familiarity of area
V05	Government policy
V06	Efficient transport to and from other centres
V07	Psychic preferences
V08	Availability of residential facilities
V09	Low transport costs
V10	Influence of local politics
V11	Adequate supply of raw material from local area
V12	Lack of alternative planned zone for industries
V13	Access to local market
V14	General environmental features
V15	Availability of water
V16	Availability of land for industrial expansion
V17	Local authority incentives
V18	Access to internal business information
V19	Access to supply of raw material from other areas
V20	Lower land prices and rent
V21	Proximity to other enterprises
V22	Low labour costs
V23	Personal contacts for business information
V24	Presence of urban economies
V25	Access to regional market
V26	Availability of skilled labour
V27	Access to external business information
V28	Prohibitive regulations and high standards in other areas
V29	Access to international market
V30	Availability of energy
V31	Enterprise already at its present location
V32	Sole command of market
V33	Kenya Industrial Estates sheds in Nairobi were full so I was offered one in Kisumu instead
V34	I was educated/learnt my trade in Kisumu
V35	Allowed particular site by owner
V36	Regional centre of sponsors

Source: Author's Fieldwork, 1988.

The responses on the 36 items are converted to a numerical scale, as follows: very important 10, important 7, fairly important 4 and least important 1. The analysis is based on a comprehensive data base of 142 attitudes to 36 elements of Kisumu's space economy.

The first stage analysis involves the scoring of all the response categories on the ten-point scale, and the computation of correlation matrix (Appendix 4). Subsequently, the eigen values (Appendix 5) are produced[2] The total variance explained by each factor is listed in the column labelled eigen value. The next column contains the percentage of the total variance attributed to each factor. For example, the linear combination formed by Factor 1 has a variance of 4.81, which is 20.1 per cent of the total variance of the 24 location variables. The last column, the cumulative percentage, indicates the percentage of variance attributable to that factor and those preceeding it in the table. Thus 64.4 per cent of the total variance is attributable to the first eight factors.

Rotation by means of the varimax criterion has the effect of emphasizing the stronger loadings and minimizing the weaker ones (Appendix 6). After rotation, eight factors with eigen values greater than one are extracted which together account for a total of 15.5 of the eigen values and 64.4 per cent of the total variance in the input data matrix.

To simplify the factor interpretation problem the factor loadings are chosen on the following basis. Starting with the first variable and the first factor, of the rotated matrix (Appendix 6) and moving horizontally from left to right across the factors, the loading with the highest absolute value is chosen (Dillon, 1984). The process is repeated for each variable resulting in table 4:2. Thereafter, the `scree-slope' graph is used, as suggested by Cattel (1978) and Goddard and Kirby (1976) to determine the number of factors to be interpreted. This technique is based on identifying a distinctive break of slope in a plot of the amount of variance explained by each factor. In this analysis, it can be identified after four factors

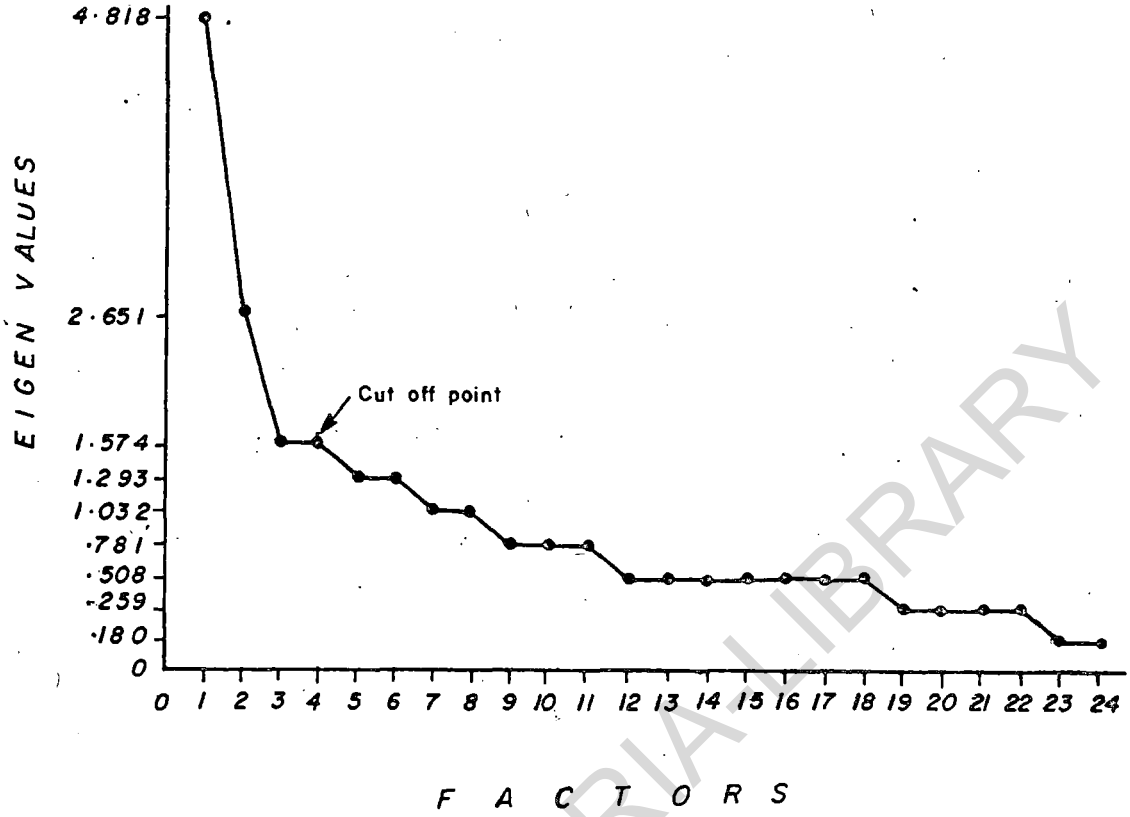
Factor 1, which accounts for 4.82 of the eigen values and 20.1 per cent of the total variance may be interpreted as Agglomeration.

TABLE 4:2FACTOR ANALYSIS RESULTS FOR ALL INDUSTRIES

Factors	Agglomeration (1)	Industrial infrastructure (2)	Business Information (3)	Personal Considerations (4)
Percentage of additional variance explained	20.1	11.0	6.7	6.6
Variables with positive loadings	Proximity to other enterprises (0.75521) Presence of urban economies (0.69442) Local authority incentives (0.64860) Availability of cheap labour (0.36186)	Availability of local capital for investment (0.77295) Efficient transport to and from othercentres (0.61920) Access to supply of raw Material from other areas (0.58976)	Acces to external business information (0.81218) Prohibitive regulations and high standards in other areas (0.67643) Access to internal business information (0.60550) Personal contacts for business information. (0.45551)	Psychic preferences (0.79545) Nearness to home and hence familiarity of area (0.57764) Access to local market (0.47326)
Varaibles with significant negative loadings			Low transport costs (-0.48810)	

Source: Author's Fieldwork, 1988

FIG. 4:1 Scree Slope Graph For All Industries



On this factor there are four variables with significant loadings (Table 4:2). These variables, to use Weber's (1929) terminology, can be referred to as the agglomerating force that tend to draw industry closer together. For instance, savings due to proximity to auxiliary industries, better marketing outlets or economies of size localize industry. The average costs of a firm are lowered when location is sought near other firms offering these types of economic activity. Such locations are usually urban areas, since firms are able to share many kinds of costs that they would provide internally if they located in a less urbanized area. All the firms in an urban area take advantage of the transportation services provided by that town; the varied labour market; banking and commercial services (Wheeler and Muller, 1981). Kisumu being the

most urbanized centre in Western and Nyanza provinces attracts a larger number of industries than the other urban centres like Miwani, Chemelil and Kakamega, within its economic catchment.

These urban centres are not particularly well endowed with industries because they do not have sufficient industrial infrastructure such as transportation systems, electricity and water. By agglomerating and localizing, firms specialize to a greater degree. Thus certain operations and services that a firm in a less urbanized centre would have to do for itself can now be famed out economically (Greenhut, 1956). At the same time proximity to other enterprises enhances the quantity and quality of business information. Unlike the Nairobi City Commission, the Kisumu municipal council authorities do not harass the small scale entrepreneurs. Only 2.5 per cent of the respondents have been harassed by the municipal authorities and this is because they have not obtained the required licenses for production purposes. If anything, it has encouraged the entrepreneurs to locate in Kisumu municipality. The metal works jua-kali artisans located on Makasembo road reserve (Figure 2:2) have had large portions of their industrial plots decreased due to the general replanning of the town. The council took upon it the task of providing for them a single parcel of land which would adequately accommodate them.

The municipal council identified a suitable site for these artisans and took a leading role in the subdivision of this land into individual jua-kali plots. The future role of the council on this project is the provision of services. About 73.6 per cent of these artisans consider the fact that the council readily gives them trading licenses which would be comparatively more difficult to obtain in the other major centres. This tolerant attitude of the local authority has encouraged entrepreneurs to locate in Kisumu.

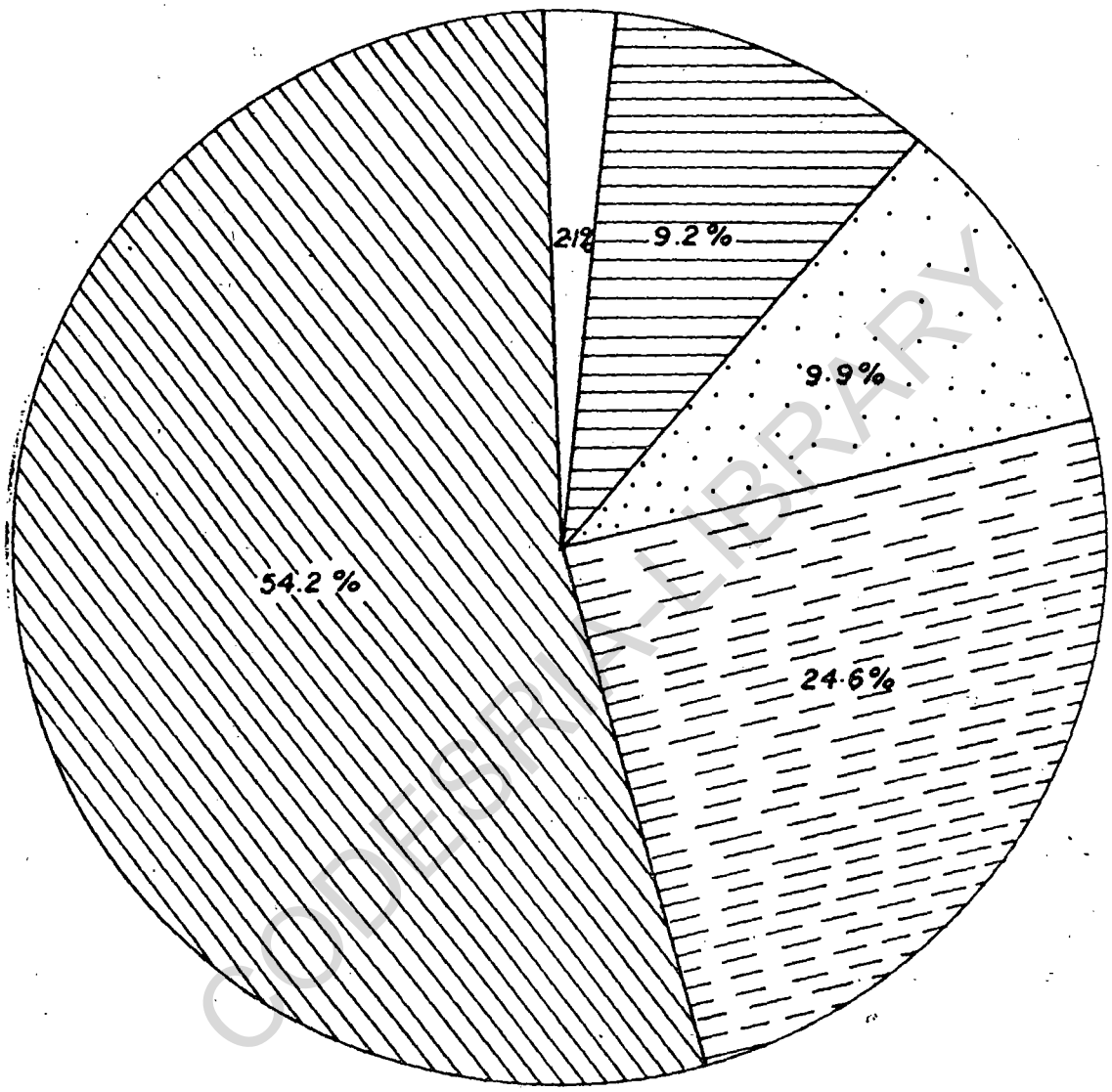
Indirectly, agglomerative influences, attract a large number of persons from the rural areas, in search of gainful employment in Kisumu town. Thus, Kisumu has a large pool of labour, with limited occupational skills. This potential labour supply although lacking in skills provides cheap non-skilled labour that is commonly utilized by the small scale establishments. It seems that unemployment is higher among the younger population than among the mature one. According to the Census Report (Republic of Kenya, 1979.b.) there are 179,681 persons aged between 15 and 39 years in Kisumu district. The advantages offered by this group of workers is youthfulness, cheapness and availability. Thus establishments which wish to exploit these labour characteristics consider the availability of cheap non-skilled labour as an important factor influencing their location decisions.

Factor 2, which explains 2.65 of the eigen values and 11 per cent of the total variance has three significant loadings (Table 4:2). The factor is interpreted as Industrial Infrastructure. Availability of local capital for investment is important in that the initial source of capital is not usually easy to come by. In Kisumu 88.4 per cent of the entrepreneurs interviewed obtain their initial capital from informal sources such as own saving, personal borrowing and joint ownership. Only 2.7 per cent obtain it from commercial banks and government lending agencies (Table 3:6). This finding conforms with that of Logan (1966.b.) who finds that for most of the new firms in Sydney, the main source of finance is the private savings of the individual concerned, or personal loans. This is because banks and other lending institutions are more willing to finance an entrepreneur after he has been in business for some time, has demonstrated his ability and acquired some assets. According to Onyemelukwe (1974), successful capital mobilization is frequently not through formal financial institutions, but through informal sources,

especially those within the entrepreneurs' extended family circle and friends. Thus even where the entrepreneur desires to establish his enterprise in another town which seems to offer better promise of industrial profitability, capital immobility may inhibit long-distance movement away from one's people.

Efficient transport to and from other centres is closely related to supply of raw material from other areas. In order to ensure the supply of raw material from other areas an efficient transport system is necessary. This is particularly important for those firms utilizing raw material not available in Kisumu, easily perishable or bulky materials. Lack of adequate or an irregular supply of raw material is listed as the fourth major business obstacle and 7.7 per cent of the firms consider it as one of the problems encountered in setting up their enterprises.

Factor 3, which accounts for 1.62 of the eigen values and 6.7 per cent of the total variation is labelled Business Information. This factor defines the components of the managerial image concerned mainly with the nature of business information. External business information consists of knowledge on the cost of machinery, changes in production technique and world market trade conditions. To be aware of those areas with prohibitive regulations and high standards requirements entrepreneurs have to have access to internal business information, that is, where decisions on industrial policies take place. The cost of time in decision-making attracts industries towards known environments in developing countries, since the difficulty of obtaining needed information leads to costly delays in getting started. This choice is usually made in satisfactory alternatives.



Kisumu
Siaya
South Nyanza
Kakamega
Nairobi, Machakos and Outside Kenya

Fig 4:2 Home Area of Enterpreneurs

There is a tendency for small scale entrepreneurs to locate industrial plants in Kisumu, since this is the area they are most familiar with and can obtain the maximum amount of business information. Theoretically, this may not be the best choice, but it is usually determined by the investor's lack of necessary information, which may be reflected in either ignorance about investment opportunities outside his home environment or an exaggerated sense of risk in the few investment opportunities thought to exist in other environments (Hamilton, 1974). This study reveals that for 54.2 per cent of the entrepreneurs's their home area is Kisumu (Figure 4:2). For the small scale entrepreneurs due to the limited nature of information and research facilities at their disposal, personal contacts are greatest in their home area or where they reside than elsewhere. Although larger profits may exist in other areas these entrepreneurs prefer to locate in Kisumu because of the greater assurance of survival offered by their already existing personal contacts in the town.

Personal contacts indirectly affect other economic factors such as the availability of raw material and transportation. Most of the firms have special arrangements with their suppliers and transporters who readily give them credit. Such arrangements it is felt can not be easily fostered in strange environments within which the entrepreneurs have no personal contact(s). Only 31.7 per cent of the establishments set aside funds for commercial advertisement. The remaining 68.3 per cent rely on their personal influences to promote their sales. Further probing revealed that they depend on their friends, customers, and relatives to bring in more customers. This observation is further strengthened by the fact that 51.4 per cent of the entrepreneurs rely sole on personal contacts for their sources of business information (Table 4:3). About 37 per cent of enterprises have difficulty in receiving internal business information, while only 8.6 per cent have difficulty in receiving external information.

Low transport costs is a traditional industrial location factor. This variable has a negative loading (Table 4:2) which implies that the entrepreneurs in establishing an industry shy away from those areas with high transportation costs. Transport costs is one of the factors upon which Weber (1929) based his theory of industrial location. He realized that fuel and raw material costs may differ among locations, but simplifies the analysis by including these data with high transportation cost. Therefore, when the raw material or fuel cost is greater at one location than others, this condition is treated as if the location is more remote than alternative ones. Higher raw material or fuel costs are treated as if they are located at a farther distance from the consuming centre than superior deposits of raw material and fuel. According to Weber, such inferior deposits take the form of increased transportation costs. These transportation costs are treated as one element in the selection of the plant site (Greenhut, 1956).

TABLE 4:3 SOURCES OF BUSINESS INFORMATION

Source	Percentage
Personal contacts	51.4
Personal contacts and daily newspapers	40.6
Personal contacts, daily newspapers and the Kenya Gazette	2.9
Personal contacts, daily newspapers, the Kenya Gazette and Annual Trade Reports	1.4
Personal contacts, daily newspapers, the Kenya Gazette, Annual Trade Reports and Economic Surveys	2.3
International and Local Journals	1.4
Total	100.0

Source: Author's Fieldwork, 1988.

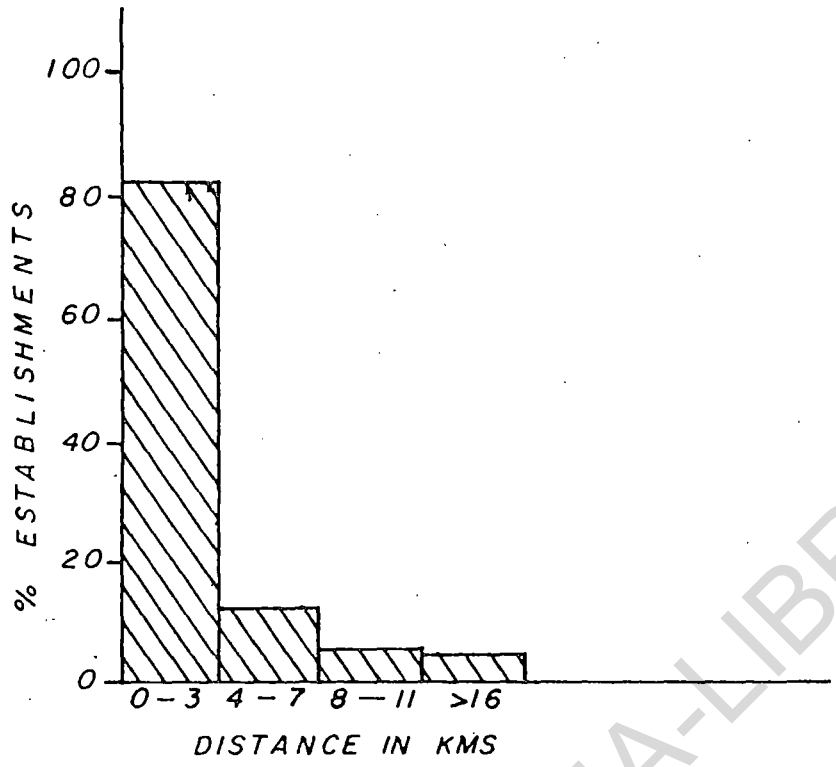


Fig. 4:3 Distance of Establishment to Nearest Road.

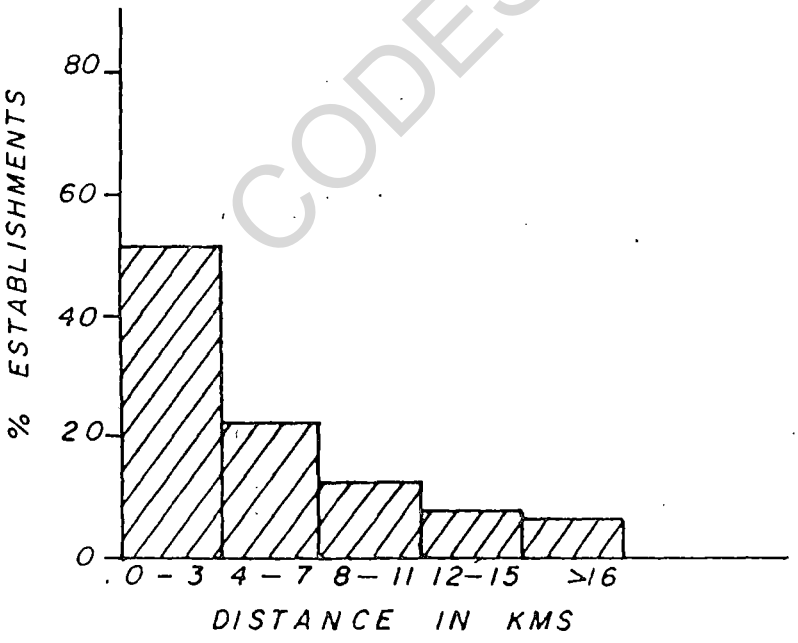


Fig. 4:4 Distance of Establishment to Nearest Railway

Generally, if the cost of transfer is the only significant factor, the site with the lowest transportation cost will be selected. In Kisumu the cost of transferring both the raw material and finished product is perceived as a major factor contributing to the establishment of small scale enterprises. These enterprises locate close to the transport network in order to lower their costs. About 80.2 per cent of the establishments are located between 0-3 kilometres to the nearest railway line. (Figure 4:3 and 4:4)

Factor 4 is defined as Personal Considerations. It explains 1.57 of the eigen values and 6.6 per cent of the total variance, and it has three location variables with significant loadings (Table 4:2). Personal factors have in general, an influence on the selection of an area. They influence decision-making by indirectly affecting cost; by partially determining demand; and/or providing non-pecuniary rewards. Love of one's home town, country or region suggests psychic income and is basically a non-pecuniary determinant. In a study of plant locations in Michigan, Katona and Morgan (1952) discover that personal reasons are the most important factors underlying locational decisions. According to Hamilton (1974) the choice of a location is usually a non-issue for the small scale entrepreneur initially establishing an industry. Often the entrepreneur begins to operate his business in his home town. Similarly, North (1976) states that a familiar environment and long standing contacts are crucial to the initial success of a new firm, so the possibility of opening a factory in another area is rarely considered.

Small scale establishments tend to be located near or at the homes of the entrepreneurs for several reasons. The first is that nearness of place of work to place of residence helps to maintain the socio-economic set-up. Second, it facilitates the reduction of transport costs between place of work and residence. For some of the informal industrial units,

nearness to home also means nearness to the low-income areas which form the bulk of the market for goods produced. Logan (1986.b.) notes that new owners or managers locate in areas near where they live, since they consider their personal contacts and local knowledge to be more important than the advice given by real estate agents or by government departments. He further points out that the close relationship between place of residence and factory location becomes even more significant when the owner-manager works long hours, including weekends, and when the industry is labour-intensive.

Many entrepreneurs believe that contacts already formed with customers promote sales. To a certain extent access to local market can be called a personal revenue-increasing (demand) factor since it indirectly influences sales (Greenhut, 1956). Moreover, 49.3 per cent of the establishments interviewed sold their manufactured products to the local population within Kisumu municipality. Given the fact that the bulk of the products from the small scale enterprises are not sophisticated and luxury oriented, they suit the largely low-income market provided by the municipality's population. This is further reinforced by the fact that these products are usually much cheaper that those produced by large scale enterprises. The Bright Light cosmetics factory is a case in point. It has gradually dominated the petroleum jelly market (throwing out its main rival - a multinational corporation located in Nairobi) not only in Kisumu but in the whole of Western Kenya because of its comparatively cheaper products. At the same time, the shopkeepers who buy its products prefer to sell those products from factory owners with whom they have personal acquaintances.

4:3 Entrepreneurial Perception of Formal Sector Firms

The analysis of the formal sector entrepreneurial perception is undertaken in order to determine the factors that motivate formal small scale entrepreneurs to establish their firms in Kisumu. A factor analysis of the entrepreneurial perception scores of the formal firms is carried out. A total of 23 factors is generated (Appendix 7). The 23 factors are then subjected to orthogonal rotation employing the varimax criterion (Appendix 8). After rotation, eight factors with eigen values greater than one are extracted which together account for 17.35 of the eigen values and 75.4 per cent of the total variance. The significant factor loadings are then identified from the rotated matrix and the `scree slope' graph identifies three factors for interpretation (Figure 4:5 and Table 4:4)

FIG. 4.5 Scree Slope Graph for Formal Industries

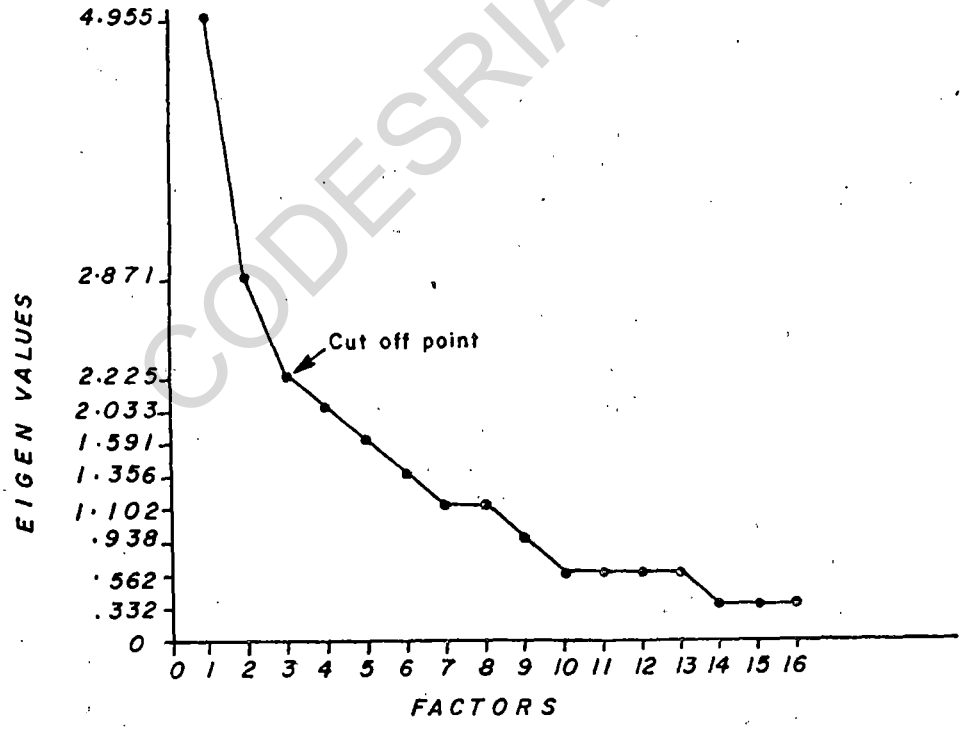


TABLE 4:4. FACTOR ANALYSIS RESULTS FOR FORMAL INDUSTRIES

Factors	Information, Resource (1)	Transport (2)	Personal Considerations, Energy (3)
Percentage of additional variance explained	21.5	12.5	9.7
Variables with significant positive loadings	Access to internal business information (0.82971) Access to external business information (0.73745) Access to regional market (0.67917) Availability of local capital for investment (0.58448)	Low transport costs (0.79772) Local authority incentives (0.77266) Efficient transport to and from other centres (0.62076) Access to supply of raw materials from other areas (0.61842)	Nearness to home and hence familiarity of area (0.79952) Personal contacts for business information (0.66751) Access to local market (0.66751)
Variables with significant negative loadings			Availabilty of energy (-0.58524)

Source: Authors' Fieldwork, 1988.

Factor 1 is defined as Information and Resource. Access to internal business information is vital for the diffusion of technological and organizational innovations inside and outside the manufacturing sector. Thus the formal sector entrepreneurs believe that, since for most of them Kisumu is their home town, their acquaintances within the municipality influence the size of availability of loans. Alonzo (1968) and Webber (1972) note that spatial variations in the availability of information influence locational choices in so far as they bias the range of known opportunities and permit uncertainty to be reduced more easily in some places than in others.

Although Kisumu municipality has a fairly large agricultural hinterland, its market has mainly been served by industries located in the other major urban centres. Undeniably, this has the effect of increasing the price of the delivered goods in view of the high transportation costs. This has encouraged entrepreneurs to locate similar but small scale formal industries in Kisumu which would lower the price of delivered goods, enabling them to dominate the market. This is particularly true for the consumer goods industries. Moreover, a large part of the hinterland's population fall in the low-income bracket, who can ill-afford the high price of goods manufactured outside the province.

Factor 2 is described as Transport since the variables with significant loadings on it are primarily transport-oriented. The formal sector entrepreneurs are particularly concerned with low transportation cost since they rely heavily on raw materials from other areas outside Kisumu. Local authority incentives also loads significantly on this factor because, it is the municipal council that provides the industrial infrastructure (for example, roads and water) that is crucial for these firms. Tied in with this factor are elements of the urban industrial

economy such as efficient transport to and from other centres which enable them to compete with the large scale firms in Kisumu.

Factor 3, is interpreted as Personal Considerations and Energy. Personal factors have the effect of enhancing personal contacts for business information and reducing the cost of access to the local market. When the firms are located in a familiar environment which for them is Kisumu, personal contacts are easily fostered and this may indirectly affect their knowledge of the demand and size of the local market. Availability of energy in the form of electricity is an important factor for formal sector establishments most of which are mechanized. This variable has a negative loading which implies that the formal sector firms prefer Kisumu, to other nearby towns like Miwani and where electrification is not complete. Electricity is very important for the fish filleting, metal works, paper, printing and publishing, chemical and plastics, and wooden furniture and fixtures firms.

4:4 Entrepreneurial Perception of Informal Sector Firms

The informal sector entrepreneurial responses are isolated and a factor analysis test is carried out. A total of 24 factors are generated (Appendix 9). The 24 factors are subjected to orthogonal rotation, eight factors with eigen values greater than one are extracted which together explain 16.13 of the eigen values and 67.2 per cent of the total variance. The significant factor loadings are then identified from the rotated matrix and the `scree-slope' graph identifies four factors for interpretation (Figure 4:6 and Table 4:5)

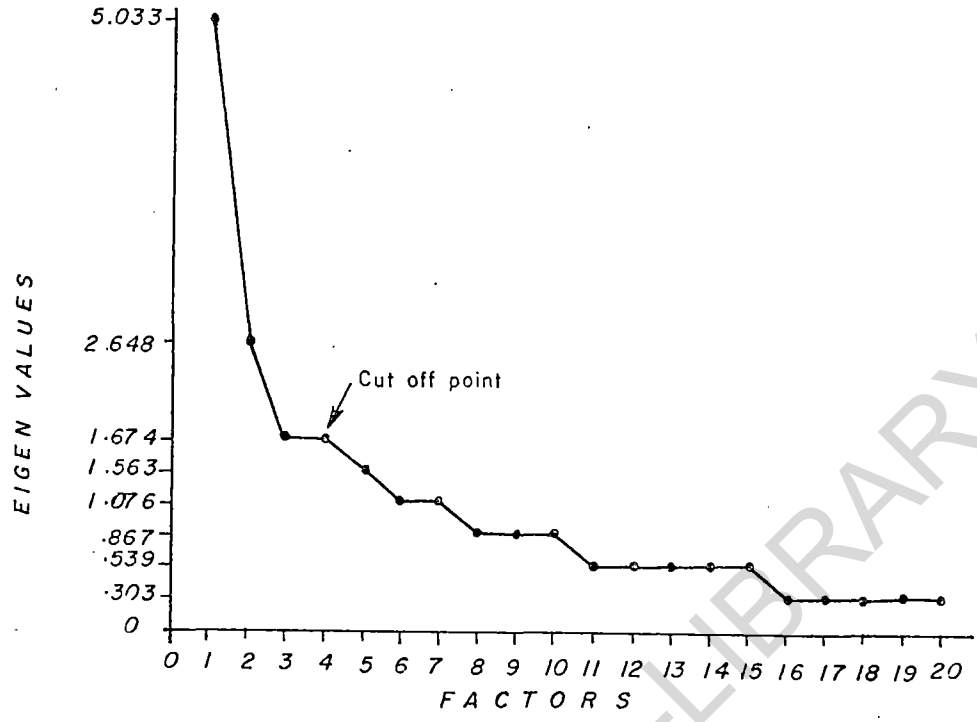
Factor 1 is described as Business Information. Informal sector firms prefer to locate in an area where the entrepreneur has varied and widespread personal contacts, since this indirectly increases the demand for his product.

TABLE 4:5. FACTOR ANALYSIS RESULTS FOR INFORMAL SECTOR INDUSTRIES

Factors	Business Information (1)	Transport, Non-skilled Labour (2)	Capital, Raw Material Linkage (3)	Production, External Market Linkage
Percentage of additional variance explained	21.0	11.0	7.7	7.0
Variables with siignificant positive loadings	Access to external business information (0.74706) Access to internal business information (0.72732) Personal contacts for business information (0.72142) Prohibitive regulations and high standards in other areas (0.68177) Presence of urban economies (0.55062)	Efficient transport to and from other centres (0.79225) Low transport costs (0.77229) Availability of cheap non-skilled labour (0.50175) Local authority incentives (0.43428)	Availability of local capital for invesst-ment (0.71488) Access to supply of raw materials from other areas (0.70147) Adequate supply of raw materials from local areas (0.60127) Access to local market (0.50095)	Low labour costs (0.71488) Access to regional market (0.70225) Lower land prices and rent (0.52072)

Source: Author's Fieldwork, 1988

Fig. 4:6 Scree Slope Graph for Informal Industries



Compared to Nairobi and Mombasa, Kisumu does not have stringent regulations and high standards concerning the establishment of manufacturing firms. For instance, 10 per cent of firms are squatters on land owned by the municipal council. Stafford (1974) points out that, the single most important locational factor is the nature and quality of information and especially the personal contacts in the decision-making context. Thus the more varied and widespread the business contacts of the informal sector entrepreneur, the greater the demand for his product assuming pleasant relationships.

Factor 2 is interpreted as Transport and Non-Skilled Labour. Once again transportation has emerged as an important factor influencing the decision-making process of these firms. The council provides roads which not only facilitate efficient transport but considerably lowers the

costs within the municipality. Cheap non-skilled labour which forms a significant proportion of the informal industrial units is readily available due to increasing unemployment in the town. For instance between 1962 and 1969 for every thousand increase in adult population there were 88 available job opportunities in Kisumu municipality and negative 49 in Kisumu district. In the 1970s out of every thousand increase in adult population, there were 157 and 371 job opportunities in municipality and district respectively. These figures indicate a situation of steadily increasing unemployment in the formal sector in the urban area. If this rate (2.7 per cent per annum) continues, then by the turn of the century there will be 26,084 engaged in wage employment in the municipality against a potential labour force of about 184,972. Whereas, in 1969 only 14 persons out of 1000 were engaged in the informal industrial sector, the figure had increased to 95 in 1975. Assuming similar trends, then by the year 2000, 98,125 persons will be engaged in the informal sector (Table 4:6) (Republic of Kenya, 1985).

Since the supply of labour is greater than the demand, the cost of labour is comparatively low vis-a-vis the other major towns. Thus informal sector entrepreneurs locate in Kisumu to exploit this production cost-reducing factor in the urban industrial economy.

Factor 3, is defined as Capital and Raw Material Linkage. The initial source of capital for the informal sector entrepreneurs is usually through informal sources such as own saving and personal borrowing. It is within one's home town that these informal sources of capital can best be tapped. Such an availability of capital indicates a continuous supply of raw material which serves to minimize the entrepreneur's processing burdens. Due to the small scale nature of their production activities and limited capital these establishments rely mainly on local raw materials. In addition, because of the high cost of transportation of raw materials,

the entrepreneurs prefer to make use (as far as possible) of the local materials provided by Kisumu's vast and agriculturally rich hinterland. Owing to the bulkiness (for example, wood, papyrus reeds, clay and sisal) and perishability (for example, fish) of these raw materials long distances would have the adverse effect of increasing production costs, which the informal industrial units can ill-afford to incur.

Table 4:6 EMPLOYMENT IN THE FORMAL AND INFORMAL SECTORS IN KISUMU

Sector	From C.B.S. Reports 1969	growth rate p.a.	1979	Structure Plan Projections assumed growth rate p.a.	2000 (proj.)
Formal Sector (incl.service industries)	13,114	2.32%	16,509	2.2%	26,084
Informal Sector	684	25.1%	6,405	13.9%	98,125
Total employed	13,798	5.2%	22,914	8.4%	124,209
Informal Sector as % of Formal Sector	5.2%		38.8%		376.2%

Source: Republic of Kenya. 1985. Kisumu Water Supply and Sanitation. Ministry of Local Government, Nairobi :H.P. Gauff and Co.

At the same time the availability of local raw materials enables these industries to manufacture relatively cheaper goods for the majority of the low-income population. For instance, the informal grain milling

establishments are able to compete with the large scale industries in the maize meal flour market because of the ready availability of maize. In such a situation these establishments would not be able to survive if they are to rely on maize from other areas outside the province (like the large scale industries do).

Factor 4, is interpreted as Production and External Market Linkage. Informal sector entrepreneurs establish their firms in Kisumu to lower their production costs by taking advantage of the low labour costs, land prices and rent. As stated earlier Kisumu has a large pool of cheap unskilled labour which is readily available. At the same time since Kisumu is the provincial headquarters for Nyanza Province and industrial headquarters for Western Kenya, the informal industrial units can increase their accessibility to the regional market. About thirty-seven per cent of the firms own the land upon which they are situated,and 35.1 per cent of them only pay between K.Shs. 20 and 600 as monthly rent. Due, to the higher land values in the two major towns of Nairobi and Mombasa, the price of industrial floor space is often beyond the reach of the informal sector entrepreneurs who are left with little choice but to locate in the third urban centre - Kisumu which also happens to be the town in which they own land.

4:5 Summary of the Findings

The analysis shows that the significant factors motivating entrepreneurs to establish small scale enterprises in Kisumu include agglomeration, industrial infrastructure, business information and personal considerations. A comparison between the formal and informal entrepreneurial perception factors reveals that the location factors unique to the formal sector firms are personal considerations and energy while for the informal industrial units are non-skilled labour, raw material linkage and production.

Personal considerations is important for the formal sector firms because these entrepreneurs, most of whom are Asians rely on personal relationships already fostered by their forefathers, who were the pioneers of commercial and small scale industrial enterprises in the municipality. This enables them among other things to get access to industrial infrastructural facilities such as electricity much more easily than the other non-Asian entrepreneurs.

The informal industrial units on the other hand, rely heavily on non-skilled labour which is relatively cheap. At the same time owing to the financial constraints, they mainly depend on local raw materials and locate their industrial premises on or near their residential areas. Therefore, the hypothesis that, there is a significant relationship between entrepreneurial perception and the location of small scale industries has been validated.

4:6 Footnotes

[1]Factor analysis is a statistical technique used to identify a relatively small number of factors that can be used to represent relationships among sets of many interrelated variables. Its use in this study is justified for various reasons. First, it enables the geographer to study behavioural phenomena of great complexity and diversity and to mold the findings into scientific theories. Second, it offers, both a technique of analysis and a theoretical structure. Finally, it allows for both inductive and deductive manipulation of qualitative as well as quantitative data. For further information on some of the uses and applications of factor analysis, see Eysenck (1953); Henrysson (1957); Berry (1960, 1961 and 1966); Schnore (1961); Rummel (1970); McDermott and Taylor (1976) Obudho (1986); Kinyanjui (1987); and Mbwesa (1988).

[2]Since the goal of the factor extraction step is to determine the factors, in this study the initial factors are obtained by principal component analysis by which, linear combinations of the observed variables are formed. The first principal component is the combination that accounts for the largest amount of variance in the sample. The second principal component accounts for the next largest amount of variance and is uncorrelated with the first. Successive components explain progressively smaller portions of the total sample variance and are uncorrelated with each other, etc.

Chapter 5: SPATIAL DISTRIBUTION

5:0. Introduction

The purpose of this chapter is to examine the spatial distribution of small scale manufacturing firms in Kisumu. Multiple regression and factor analysis are used to investigate the intra-urban spatial pattern of these firms. The selection of a particular town (Chapter Four) is often a simpler decision for firm managers than the selection of a site within the town. The classical body of industrial location theory, developed by writers such as Weber (1929), Losch (1954), Hoover (1958), Smith (1955) and more recently Pred (1967) and Hamilton (1974) provides the industrial geographer with a number of insights concerning the spatial distribution of industries, some of which apply to the case in Kisumu. For instance, within the urban industrial economy the geographical space constantly evolves and expands in parallel with organizational growth and development. Understanding the structure of entrepreneurial perception (as in Chapter Four) within this space is a prerequisite in intra-urban industrial location analysis. The nature of entrepreneurial perception strongly influences intra-urban locational choice as it reflects the actual information upon which site decisions are made. The distribution of manufacturing industry does not at first glance appear to follow any simple and readily applicable law as the case with the provision of shops, and services such as school and hospitals (Smith, 1971).

Although not without problems the use of multiple regression techniques is well established in most branches of geographical enquiry[1]. Multiple regression techniques have been used successfully in several industrial location studies, for example, Logan (1964), Keeble and Hauser (1971, 1972), and Kinyanjui (1987). Logan (1964), utilizes the multiple regression model to predict manufacturing growth rates for individual

local government areas in the suburban Sydney metropolitan area for the periods between 1953-4 and 1960-1. This analysis shows that those local government areas which have experienced the greatest average annual rates of growth over the period are underestimated by the regression equation. On the other hand, areas which have experienced a lower average annual change are over predicted by the equation. On the whole the regression equation predicts well for those local government areas in which there has been least change, permitting them to be ranked according to residual value (Logan, 1964: 161).

In a study of industrial growth in South-east England, Keeble and Hauser (1971, 1972) use the stepwise multiple regression to select the most important variables out of a set of 44. In their study all the regressions present in the analysis are checked for collinearity, and where this is found to be excessive (that is when r is above 0.85) variables were dropped from the analysis (so-called `zero restriction'). Nevertheless, zero restriction does involve a number of problems. In order to solve them, Keeble and Hauser (1972) subject the matrix of independent variables to a principal component analysis. The resulting components scores are then used in the regression analysis. These differ from the original independent variables only in excluding independent variables relating to the engineering industry, and to local area (as opposed to urban area) density values of one sort or another.

The regression models constructed for three (EMPUO7, FL0014 and SPAC 15) of the four main aggregate variables yield high R^2 values, only with GROW01 does it fail to reach the 0.500 level[2]. While results for the former three thus afford reasonably adequate statistical explanations of the observed variation, interpretation of those for GROW01 should not ignore the possibility that the analysis has omitted further important influences on manufacturing growth rates whose inclusion would improve the

result (Keeble and Hauser, 1972: 28). Despite, these problems, the regression results provide clear empirical support of unexpected spatial relationships between manufacturing change and postulated locational influences in Outer South-east England.

Kinyanjui (1987) applied the forward selection multiple regression technique to analyse the intra-urban distribution of manufacturing industries in Thika. Her study shows that the locational factors that influence the spatial distribution of large scale industries are adequately explained by the variables introduced into the regression model. Together, these four variables account for 91 per cent of the variation in the distribution of these industries. On the other hand the intra-urban location of small scale industries is not influenced by the variables considered. The variables entered in the regression are not significant since they only explain 45 per cent of the variance. Kinyanjui (1987) suggests that the location of small scale industries within Thika may be due to personal considerations which are not included in the regression model. The present study therefore, includes personal factors in the regression model since it is studying small scale industries in Kisumu.

The intra-urban distribution of the small scale manufacturing firms in Kisumu does not at first sight appear to have an easily discernible pattern. However, a closer scrutiny reveals that these industries are mainly concentrated in the Old Town, Manyatta and Nyalenda (Figure 5:1). Industries are spatially concentrated in the inner town area. The rural parts have a dispersed pattern of industries. The central areas seem to have special attractions (such as proximity to the Central Business District (CBD) and presence of transport network), which tend to make them the most sought after sites. Table 5:1 which shows the intra-urban distribution of the establishments by sublocation reflects this pattern.

5:1. Data Collection

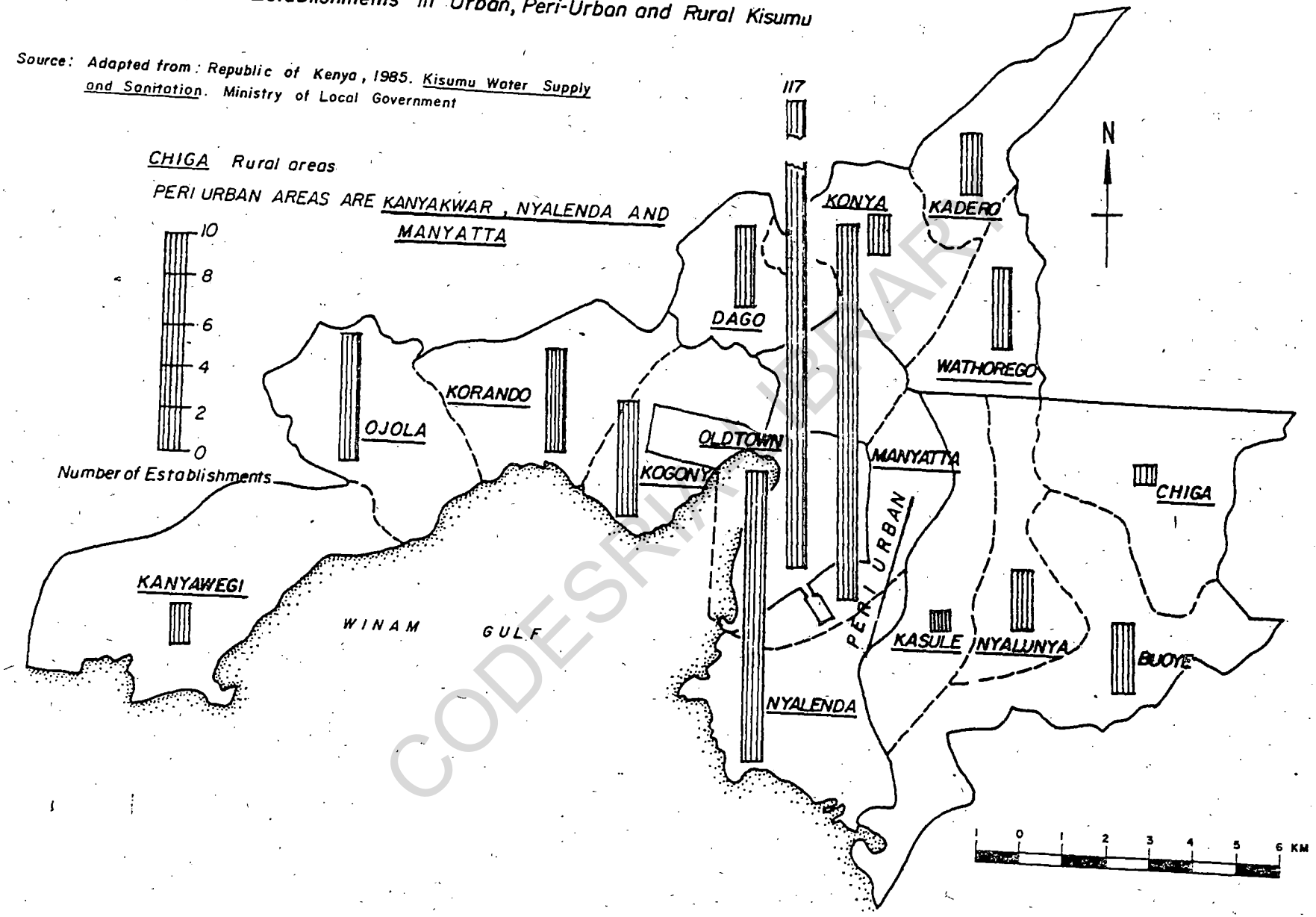
The survey of small scale manufacturing industries in Kisumu included questions related to the variables that determine the site of these industries. An investigation was undertaken to try and explain the relationship between location variables and the sites of these industries. Thirty-four questionnaire items are chosen as possible explanatory variables. Table 5:2 gives the description of the variables in this analysis. The data for the analysis is generated from the individual entrepreneur responses to the items on the survey questionnaire. The response on any item ranged from one to ten, indicating very important (10); important (7); fairly important (4) and least important (1). The respondents are also asked to rank in order of importance ten site variables. Of the 197 firms interviewed only 142 gave satisfactory answers.

TABLE 5:1. GEOGRAPHICAL DISTRIBUTION OF ESTABLISHMENTS

SUBLOCATIONS	NUMBER OF ESTABLISHMENTS	PERCENTAGE
Old Town	117	59.4
Manyatta	18	9.1
Nyalenda	14	7.1
Kanyakwar	7	3.6
Kogony	5	2.6
Kasule	1	0.5
Nyalunya	3	1.5
Korando	5	2.6
Ojola	6	3.1
Kanyawegi	2	1.0
Wathorego	4	2.0
Chiga	1	0.5
Buoye	3	1.5
Dago	4	2.0
Swahili	0	0.0
Konya	3	1.5
Kadero	4	2.0
TOTAL	197	100.0

Source: Author's Fieldwork, 1988.

Fig. 5:1 Distribution of Establishments in Urban, Peri-Urban and Rural Kisumu



The data used in the analysis was obtained by aggregating the responses for the firms to get the proportion of very important, important, fairly important and least important responses for each item by establishment.

5:2. Data Analysis and Interpretation

The multiple linear regression and factor analysis are used to examine the significant variables responsible for the intra-urban distribution of the firms.

For the multiple regression analysis, the stepwise procedure is utilized, essentially as a search tool to identify which variables, previously hypothesized to be important, actually appear to have the strongest relationship with the intra-urban distribution of these firms. This procedure is a powerful variation of multiple regression as it provides a means of choosing independent variables, which provide the best prediction possible with fewest explanatory variables (Draper and Smith, 1966). In this procedure, the first variable considered for entry into the equation is the one with the largest positive or negative correlation with the independent variable. In general the criterion chosen for significance is based on a desirable F -statistic corresponding to $P < 0.01$ and $P < 0.001$ where applicable. The multiple linear regression model takes the form:

$$Y_i=\beta_o+\beta_1X1i+\beta_2X2i+\_\_\_\_\_\beta_pX_{pi}+\varepsilon_i \quad \text{.....(5.1)}$$

where:

Y_i = the observation of the dependent variable (number of establishments in Kisumu)

β_o = regression constant

β_1 to β_p = the model parameters referred to as the partial regression co-efficients

X_{1i} to X_{pi} = the observations of the independent variables

ε_i = random disturbance or error term: $\varepsilon_i \sim N(O,\sigma^2)$

For the factor analysis, the principal components technique is employed. The factors generated thereafter are rotated by means of the varimax criterion in order to emphasize the stronger loadings and minimize the weaker loadings.

TABLE 5:2 SITE LOCATION VARIABLES

D01	Number of establishments
V01	Adequate land for industrial expansion
V02	Lower land prices and rents
V03	Availability of transport
V04	Availability of electricity
V05	Accessibility to source of water
V06	Nearness to town centre
V07	Nearness to residential unit
V08	Proprietor lives here
V09	Proximity to market
V10	Nearness to other firms
V11	Industrial estate
V12	Social status/prestige
V13	Personal contacts for business information
V14	Psychic preference
V15	Influence of local politics
V16	Lack of alternative planned zone for industries
V17	Availability of premises
V18	Availability of raw materials
V19	Prohibitive regulations and high standards in other areas
V20	Enterprise already at present site
V21	Access to major street
V22	Availability of godowns and stores
V23	Availability of local capital for investment (KIE)
V24	Air transport facilities close by
V25	Lack of competition
V26	Governmental policy
V27	Local authority incentives
V28	General environmental features
V29	Trading licence not required here
V30	Regional centre of sponsors
V31	Availability of sewing machines for renting
V32	Allowed particular site by owner
V33	Nearness to home and hence familiarity of area
V34	Industrial zone for particular product

Source: Author's Fieldwork, 1988.

The analysis for both the multiple linear regression and factor analysis is carried out at three levels: in the first level an analysis of all the firms is

undertaken and in the second and third it is done for the formal and informal firms respectively.

5:3. Multiple Regression Results

The pattern of simple inter-correlations among the different site variables is also of interest. Table 5:3 records all such correlations equal to or greater than ± 0.400. While arbitrary,this cut-off point yields a fairly clear picture of the more important interconnections among the site variables included in this study. The relationships identified throw light on the intra-urban spatial pattern. The following variables (which emerge among the important site variables in the final analysis) V08, V09, V16, V20, V23, V27 and V28 fail to achieve the ± 0.400 level with respect to any other site variable. They seem to measure possible influences on the distribution of industries whose spatial impact is relatively independent of, or isolated from, that of other postulated factors. This finding fully justifies inclusion of these variables in the analysis.

The pairs of variables with excessive correlations ($r > \pm 0.800$) are not included in the analysis to avoid collinearity. Moreover, these highly intercorrelated variables are essentially measuring the same thing. For example, the high correlation between V05 and V21 ($r = 1.000$) can be explained by the fact that, accessibility to water is measured in terms of distance to a major road. The non-economic locational variables (V12, V13, V14, V15, V26 and V33) yield a correlation greater than or equal to ± 0.400. This strongly suggests that the urban-industrial economy of Kisumu is influenced by personal considerations.

The other high intercorrelations between the variables indicate that several of them are in fact related only,or largely, to indices providing alternative measures of the same general influence. The apparent high frequency of inter- correlations is thus deceptive. Good illustrations are V03, V04, V05, V06, V09, V10, V18 and V21.

'ABLE 5:3 CORRELATIONS DEPICTING SIGNIFICANT RELATIONSHIPS AMONG SITE VARIABLES

ite Variables	r-value	Significance	Percentage Level of Explanation
ower land prices and rents 's. availability of transport	0.4417	0.001	19.5
Availability of transport 's. accessibility to source f water	0.5583	0.001	31.2
ower land prices and rents 's. nearness to other firms	0.8136	0.001	66.2
Availability of transport 's. access to major street	0.5583	0.001	31.2
Availability of electricity 's. general environmental eatures	0.4387	0.001	19.3
ccessibility to source of vater vs. access to major street	1.0000	0.001	100.0
Accessibility to source of vater vs. availability of odowns and stores	0.5732	0.001	32.9
Nearness to town centre vs. vailability of raw materials	0.5732	0.001	32.9
ocial status/prestige vs. rohibitive regulations and igh standards in other areas	0.4813	0.001	23.2
'ersonal contacts for usiness information vs sychic preferences	0.6112	0.001	37.4
'sychic preferences vs overnmental policy	0.4201	0.001	17.6
sychic preferences vs earness to home and hence miliarity of area	0.5529	0.001	30.6
nfluence of local politics vs. rohibitive regulations and igh standards in other areas	0.5612	0.001	31.5
ccess to major street vs vailability of godowns nd stores	0.5732	0.001	32.9
overnmental policy vs egional centre of sponsors	0.5507	0.001	30.3

ource: Author's Fieldwork, 1988

The multiple linear regression equations in tables 5:4 to 5:6 are generated by fitting model (5:1) on the data. The equations 5:2 to 5:4 relate the number of establishments to some of the spatial variables. Table 5:4 which lists the full multiple regression results for all industries, accounts for only 22 per cent of the total variation in the dependent variable, indicate that spatial variations in these firms are positively associated with the following site variables, local authority incentives, nearness to home and hence familiarity of area, proprietor lives here, and proximity to market.

Local authority incentives refer to the industrial infrastructure provided by the municipal council of Kisumu. This includes the provision of electricity, water, roads and industrial premises in the form of open air markets and sheds. With respect to nearness to home and proprietor lives here, the partial regression coefficients indicate a negative association with the dependent variable. This implies that the further away the entrepreneur's home, the fewer the industries. That is certain sublocations that are sparsely populated have relatively fewer firms. These sublocations include Kasule, Nyalunya, Kanyawegi, Chiga, Buoye and Konya. Small scale manufacturing industries tend to be located near the entrepreneur's home to cut down transportation cost and also due to the scarcity and high cost of industrial premises. It has been demonstrated elsewhere (Hunker and Wright, 1963) that establishments are often set up near the entrepreneur's home, the area with which they are most familiar, and since the business contacts they possess at that time tend to be highly localized (Bater and Walker, 1970) this arrangement has been suggested as reducing perceived risk and uncertainty. The bulk of these firms are concentrated in and around urban areas. Proximity to market and, therefore, to the customer has been one of the elements of strength of small scale manufacturing firms.

TABLE 5:4 The multiple linear relationship between the number ofestablishments (D01) and local authority incentives (V27), nearness to home and hence familiarity of area (V33), proprietor lives here (V08) and proximity to market (V09) for all industries in Kisumu municipality

Variable	Regression Coefficient $(\hat{\beta}_i)^a$	$s.e(\hat{\beta}_i)^b$	$T(\hat{\beta}_i)^c$	Significance (T)
Constant	0.60452	0.08637	6.999	0.0000
V27	0.03194	0.00873	3.659	0.0004
V34	-0.03105	0.01013	-3.065	0.0026
V08	-0.03665	0.01381	-2.653	0.0086
V09	0.02671	0.01221	2.187	0.0304

n = 142 R^d=0.47285 S^e=0.44694 F=9.86288 (P<0.00001)

Fitted Regression Model:

$DV01 = \beta_0 + \beta_1 (NV27) - \beta_2(NV33) - \beta_3(NV08) + \beta_4 (NV09) + \varepsilon_i$.....(5.2)

a: partial regression coefficient β_i for $\forall_i$ = 0.....4

b: the standard error of the estimate of the partial regression coefficient β_1 for $\forall_i$ = 1.....4

c: T-statistic of the partial regression coefficient β_1 for $\forall_i$ = 1.....4

d: multiple regression coefficient

e: standard error of the estimate $\hat{Y}$ at(n-1) degrees of freedom

Source: Author's Fieldwork, 1988.

TABLE 5:5 The multiple linear relationship between the number of establishments (D01) and general environmental features (V28) and prohibitive regulations and high standards in other areas (V19) for formal industries in Kisumu municipality.

Variable	Regression Coefficient $(\hat{\beta}_i)^a$	$s.e(\hat{\beta}_i)^b$	Significance (T) $T(\hat{\beta}_i)^c$	
Constant	0.90341	0.06434	14.042	0.0000
V28	-0.09034	0.02279	-2.592	0.0144
V19	-0.05178	0.06434	-2.272	0.0302

n=34 R^d=0.51381 S^e=0.34251 F=5.55979 (P<0.0086)

Fitted Regression Model:

$$DV01 = \beta_o - \beta_1 (NV28) - \beta_2(NV19) - \beta_3(NV08) + \varepsilon_i \ldots\ldots(5.3)$$

a: partial regression coefficient β_i for $\forall_i = 0\ldots\ldots\ldots2$

b: the standard error of the estimate of the partial regression coefficient β_i for $\forall_i = 1\ldots\ldots\ldots2$

c: T-statistic of the partial regression coefficient β_1 for $\forall_i = 1\ldots\ldots\ldots2$

d: multiple regression coefficient

e: standard error of the estimate $\hat{Y}$ at(n-1) degrees of freedom

Source: Author's Fieldwork, 1988.

Equation 5:3 for the formal sector firms shows that two variables, general environmental features and prohibitive regulations and high standards in other areas together accounted for 26 per cent of the spatial distribution of formal sector firms (Table 5:5). The partial regression coefficients are negative. This indicates that these two variables have an inverse relationship with the spatial distribution of formal sector firms. Due to the excessive noise and lack of disposal facilities, some of the formal metal works and wooden furniture and fixtures firms are located at some distance away from the residential areas.

TABLE 5:6 The multiple linear relationship between the number of establishments (D01) and local authority incentives (V27), enterprise already at present site (V20), social status/prestige (V12) and proximity to market (V09), for informal industries in Kisumu municipality

Variable	Regression Coefficient $(\hat{\beta}_i)^a$	$S.e(\hat{\beta}_i)^b$	$T(\hat{\beta}_i)^c$	Significance (T)
Constant	0.07192	0.06720	1.070	0.2870
V27	0.049 95	0.009311	5.365	0.0000
V20	0.09281	0.04193	2.214	0.0291
V12	0.02971	0.01090	2.727	0.0075
V09	0.03308	0.01228	2.694	0.0083

n=107 R^d =0.58502 S^e =0.41386 F=13.26872 (P<0.01)

Fitted Regression Model:

$DV01 = \beta_0 + \beta_1 (NV27) - \beta_2(NV20) - \beta_3(NV12) + \beta_4(NV09) + \varepsilon_i$.....(5.4)

a: partial regression coefficient β_i for $\forall_i = 0$.....4

b: the standard error of the estimate of the partial regression coefficient β_i for $\forall_i = 1$.....4

c: T-statistic of the partial regression coefficient β_1 for $\forall_i = 1$.....4

d: multiple regression coefficient

e: standard error of the estimate $\hat{Y}$ at(n-1) degrees of freedom

Source: Author's Fieldwork, 1988.

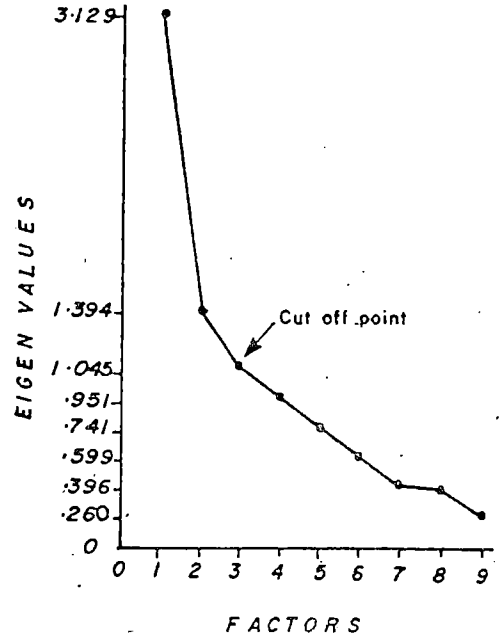
Table 5:6 presents the results of the multiple regression for the informal industrial units. Equation 5:4 indicates that four statistically significant variables together accounted for 34 per cent. From the table it is observed that the first independent variable is local authority incentives, which has a positively significant influence on the spatial distribution of informal industrial units, and is similar to the first variable of equation 5:2. Enterprise already at present site is the next variable introduced.

Usually the informal industrial units locate in premises previously occupied by another enterprise for two reasons. One is that industrial premises for the new informal entrepreneurs are usually scarce and expensive. Thus an older entrepreneur who has already acquired a substantial amount of capital may move to `better' premises leaving the original premises for a friend or relative. Two is due to the belief that the premises previously occupied by a successful entrepreneur will also be successful for the new owner. Social status or prestige which refers to the desire for power, prestige and social approval is a significant variable in the location of informal industrial units. The empirical work of Griffin (1956) on the location of industries in the New York area also lends support to this idea. Finally, proximity to market is once again a significant factor as it was for all industries in table 5:4.

5:4. Factor Analysis Results

Factor analysis is then performed in order to ascertain the underlying structure of the intra-urban distribution, (if any) not revealed by the multiple regression analysis. At the same time, it appears that some variables in the data are collinear in nature because they could not be well explained by the regression model.

Fig. 5.2 Scree Slope Graph For All Industries



The factor analysis results for all the industries is produced by generating the correlation matrix (Appendix 11). Thereafter, the eigen values are produced (Appendix 12). The nine factors are subjected to orthogonal rotation employing the varimax criterion. The varimax rotated matrix is presented in Appendix 13. The significant factor loadings and the factors to be interpreted are determined by the same procedures as in chapter four, that is the `scree-slope' graph (Figure 5:2). The results obtained are presented in table 5:7. However, the three-level factor analysis reveals that there is no significant difference between the aggregated and disaggregated data. For example, the Personal Considerations factor is explained by the variables psychic preference, nearness to home and hence familiarity of area, and personal contacts for business information, for all, formal and informal firms. Therefore, the interpretation of similar factors is done only once to avoid repetition.

Factor 1, which explains 34.8 per cent of the variance has four site variables with significant loadings (Table 5:7) and is defined as Industrial Zone and Prestige. Most urban centres in Kenya have limited planned zones for industries, this results in industries being set up in a haphazard manner. As an urban area becomes more industrialized, the local authorities tend to be more rigorous with urban landuse policies and associated regulations. This is clearly manifested in the intra-urban distribution of small scale manufacturing industries in Kisumu. A greater part of the industrial zone is occupied by the large scale industries apart from the Kenya Industrial Estates (KIE) which is the exclusive domain of the formal small scale manufacturing firms. This is in part explained by the prohibitive regulations and high standard requirements of these zones. For example, the high rents and standard manufacturing sheds, among other things that are necessary before an industry can be set in these zones.

TABLE 5:7 FACTOR ANALYSIS FOR ALL INDUSTRIES

Factors	Industrial Zone, Prestige (1)	Personal Considerations (2)
Percentage of additional variance explained	34.8	15.5
Variables with significant Positive loadings	Lack of alternative planned zone for industries (0.76002) Prohibitive regulations and high standards in other areas (0.72279) Availabillity of local capital for investment (0.71293) Social status/prestige (0.66594)	Psychic preferences (0.86855) Nearness to home and hence familiarity of area (0.80210) Personal contacts for business information (0.70913)

Source: Author's Fieldwork, 1988.

Most of the firms particularly those in the informal sector are left with no choice but to establish in areas where the regulations and requirements are relaxed. For instance, in the municipal market and in the residential areas. For those formal sector firms in the KIE, the initial capital is provided by the KIE which imports machinery and provides them with industrial premises. Most of the informal industrial units often begin operating from an older entrepreneur's establishment, by working for him. Later, after saving enough capital they usually do not look for a site far away from their investment `godfather'.

Factor 2, which is interpreted as Personal Considerations accounted for 15.5 per cent of the total variation of all industries. Psychic preference denotes a wide range of purely personal factors which have been ignored by classical industrial location theory. Most of these firms are located close

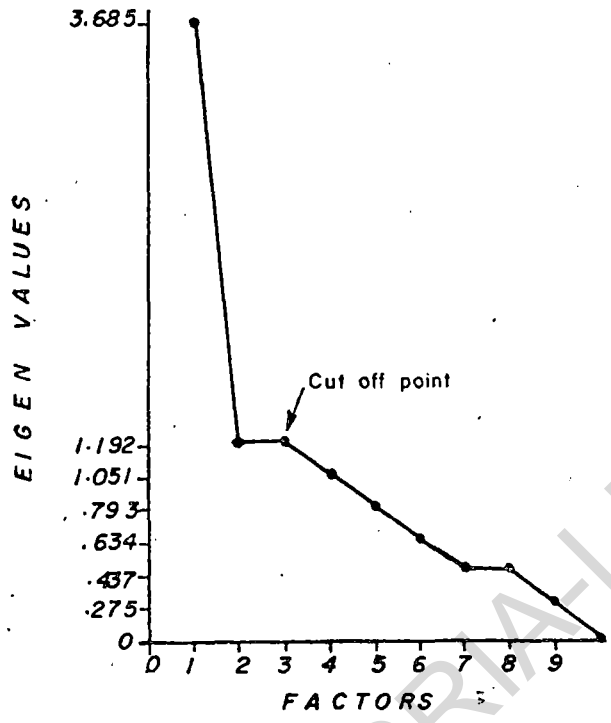
to the entrepreneur's home for a variety of socio-economic reasons. Nearness of place of work to place of residence facilitates the reduction of transport costs. This factor which explains 36.9 per cent of the total variance for the formal sector firms, may surprise one, who is not familiar with Kisumu's urban industrial economy. This is because, one would assume that the formal sector firms would more easily conform to the economic assumptions inherent in industrial location theory. However, it should be understood that most of these firms are owned by Asians who came to Kisumu at the beginning of the century and took control of the commercial scene. They had and still have alot of influence which enabled them among other things to acquire industrial land much more easily than their African counterparts particularly during the colonial era. The present Asian generation have simply inherited the industrial sites which were acquired by their forefathers.

For the informal industrial units, locating close to the residential areas, means nearness to the low-income areas which form the bulk of the market for the goods produced. According to North (1974) the initial location of manufacturing firms is usually determined by personal preferences and site considerations such as factory cost, structure and opportunities for further expansion. This results in personal contacts being confined to a fairly small area. At the same time low-level technology and education combine to limit sources and modes of information flow to direct or indirect personal contacts. Thus information circulation concerning site location is fairly restricted spatially.

Table 5:8 presents the factor analysis results for the formal industries. A total of ten factors are generated (Appendix 14) and these are subjected to orthogonal rotation employing the varimax criterion (Appendix 15). To determine the number of factors, the `scree-slope'

graph (Figure 5:3) is examined. The graph shows a distinctive break in slope after three factors.

FIG·5:3 Scree Slope Graph For Formal Industries



Factor 1 which is labelled Personal Considerations is similar to Factor 2 (Table 5:7) in the first-level analysis. Factor 2 which explains 13.5 per cent of the total variance, is defined as Social Status and Industrial Zone. The importance of social status or acceptance and site location appears to be a strong element of the cultural environment in Kisumu. Onyemelukwe's (1974) states that social recognition and success tend to decrease with distance from the entrepreneur's community. The other two variables (availability of local capital for investment and prohibitive regulations and high standards in other areas) have been explained in the first-level interpretation.

Factor 3, which is interpreted as Infrastructure (Table 5:8), shows the importance of the urban industrial infrastructure provided by the

municipal council for the formal sector. Although this sector has comparatively larger capital input than the informal sector, it still relies on the council to provide facilities such as roads, water and electricity. Sites without these facilities are rarely considered, nearly all the formal sector firms are located on sites, which have water, electricity and roads. Infact only one fish filleting and freezing establishment in the formal sector is situated where there is no water, and it has to rely on water brought in tanks from the town centre.

FIG. 5:4 *Scree Slope Graph For Informal Industries*

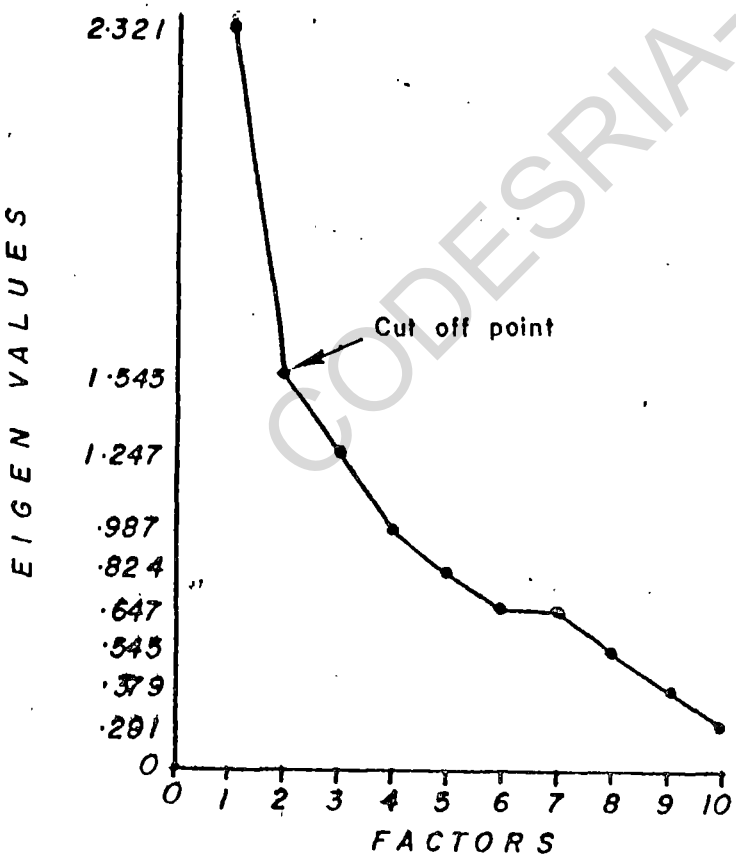


TABLE 5:8 FACTOR ANALYSIS RESULTS FOR FORMAL INDUSTRIES

Factors	Personal Considerations (1)	Social Status, Industrial Zone (2)	Infrastructure (3)
Percentage of additonal variance explained	36.9	13.5	11.9
Variables with significant positive loadings	Psychic preference (0.90645) Nearness to home and hence familiarity of area (0.84909) Personal contacts for business information (0.75210)	Social status/ prestige (0.77722) Lack of alternative planned zone for industries (0.72800) Availability of local capital for investment (0.66112) Prohibitive regulations and high standards in other areas (0.59219)	local authority incentives (0.90045)

Source: Author's Fieldwork, 1988

TABLE 5:9 FACTOR ANALYSIS RESULTS FOR INFORMAL INDUSTRIES

Factors	Industrial Zones, Resource(1)	Personal Considerations(2)
Percentage of additonal variance explained	28.2	15.4
Variables with significant positive loadings	Lack of alternative planned zone for industries (0.76980) Prohibitive regulations and high standards in other areas (0.69833) Availability of local capital for investment (0.69719)	Psychic preferences (0.81102) Personal contacts for business information (0.71601) Nearness to home and hence familiarity of area (0.68403)

Source: Author's Fieldwork, 1988.

Table 5:9 shows the factor analysis results for the informal industrial units. The ten factors generated (Appendix 16) are subjected to an orthogonal rotation employing the varimax criterion (Appendix 17). The number of factors to be interpreted is determined, through an examination of the `scree-slope' graph (Figure 5:4). The graph shows a distinctive break in slope after two factors. The two factors (industrial zone and resource, and personal considerations) which accounted for 43.6 per cent of the total variance, have already been explained in the first-level analysis.

TABLE 5:10 IMPORTANT SITE VARIABLES

Variable	Regression Analysis	Factor Analyis
Nearness to home and hence familiarity of area	ALL	ALL
Proprietor lives here	ALL	
Psychic preferences		ALL
Personal contacts for business information		ALL
Social status/prestige	IS	ALL
Availability of local capital for investment	ALL	
Local authority incentives	ALL	FS
Proximity to market	ALL	
Enterprise already at present site	IS	
Prohibitive regulations and high standards in other areas	FS	ALL
Lack of alternative planned zone for industries		ALL
General environmental features	FS	

ALL = All Industries
IS = Informal Sector Industries
FS = Formal Sector Industries

Source: Author's Fieldwork, 1988

5:5 Summary of the Findings

A summary of the findings appears in table 5:10. The table shows that there are 12 important site variables determining the intra-urban spatial pattern of small scale industries in Kisumu. Personal preferences appear to have an overriding influence on the spatial distribution of industries. This is because the closer the entrepreneur is to his home the greater the personal contacts which enable him to acquire land easily, market his products through face-to-face relations and get credit facilities from raw material suppliers and transporters who live nearby.

The factor considered important in the spatial distribution of the formal sector enterprises only is general environmental features. This factor has a negative influence on the spatial distribution of these firms.

This implies that due to the excessive noise and lack of disposal facilities, the metal works and wooden furniture and fixtures formal sector enterprises have to be located away from the residential areas. When ideally their personal preferences would lead them to sites closer to their homes.

The factor considered important in the spatial distribution of informal sector firms only is enterprise already at present site. The informal industrial units usually locate in premises previously occupied by another enterprise. This is because industrial premises for the new entrepreneurs are often scarce and expensive. Therefore an older entrepreneur who has already acquired a substantial amount of capital may move to `better' premises leaving the original premises for a friend or a relative. Another reason, is the belief that the premises previously occupied by a successful entrepreneur will also be successful for the new owner.

The hypothesis which proposes that, economic factors are relatively unimportant in the location of small scale industries in Kisumu municipality has partly been validated. The reason for this, is that although from the analysis the personal factors clearly dominate the intra-urban spatial pattern, there are some economic factors such as availability of local capital for investment, local authority incentives and proximity to market that play an influential though not determinant role.

5:6. Footnotes

1 Some of the use and application of these techniques in geography are discussed by Thomas (1960), Yeates (1965) and Obara (1983).

[2]GROW01 :Percentage change in employment in manufacturing industry, 1960 - 1966.

EMPU07 :Absolute change in manufacturing employment per sq. km of urban area, 1960 - 1966.

FLOO14 :Total new manufacturing floorspace, 1960 - 1967.

SPAC15 :New manufacturing floorspace, 1960 - 1967, per sq. km urban area.

Chapter 6: INDUSTRIAL LINKAGES

6:0. Introduction

The study of industrial linkages is not an end in itself. Industrial linkages, long distinguished as important determinants of industrial location, are suggested as defining the spatial context within which a firm operates and the area within which location decisions are made (Taylor, 1975:313). In essence, then the preceding chapters four and five may be termed the prologue to this chapter.

Various analytical methods have been utilized in the study of industrial linkages. Lever (1973) uses input-output tables to measure the importance of functional linkages between pairs of industries. The functional linkages which are measured in terms of the value of goods flowing directly between pairs of industries, are defined as those in which one or both of the industries conducts at least one sixth of their total trade with each other. The analysis reveals that there is a significant relationship between functional linkage and spatial association. Whilst this significant relationship suggests that there is some level of inertia in British industry tying industries to their suppliers and customers in a general way, there is no means of knowing whether this inertia affects all industries similarly.

Wood and Taylor (1972) use ordination employing the Principal Components Analysis (P.C.A.) to classify industrial plants according to their pattern of involvement in a system of local linkage and integration in the West Midlands conurbation. Their analysis reveals that the level of explanation provided by the first two components in each of the analyses are not very high. The proportion of total variance for the iron foundry industry is 30.8, 36.6 and 37.6 per cent for the drop forgings, lock and latch industries respectively. Some of the reasons for the relative inefficiency of the first two components extracted are the use of data describing simply

the presence or absence of local links and the linear assumptions of the P.C.A. model. Inspite of these shortcomings, the results of the ordination analysis facilitate the comparative analysis of industrial organizations. It also gives a classification of industrial plants which could provide a basis for much more detailed work on manufacturing spatial systems.

Taylor (1978) utilizes simple interaction and linear transport models to assess the strength of material linkages between Auckland manufacturers and their consumers. The pattern of sales linkage and sales decay-curves generated by these models are compared with equivalent patterns and curves constructed from the empirical survey data for Auckland manufacturers. He also uses an input-output table in part of his analysis to estimate relative sectoral demand for each industry's production. However, the models and data used in his study may have many limitations for researchers in the developing countries. For instance, the detailed statistics on transport costs, employment and inter-industry patterns required may not be readily available.

Barr and Fairbairn (1978) in their study on the provincial inter-industry linkages of manufacturing firms in Alberta compute spearman rank-order correlation coefficients for 90 pairs of economic and perceptual variables extracted from an attitude-scaling survey. Although this technique (attitude-scaling) is efficient in time and processing costs, when related to firm or linkage it cannot be analysed in terms of cause and effect.

In Africa, empirical studies on linkages have mainly employed limited input-output analysis to assess the economy. These include the works of Darkoh (1973), Ikiara (1977), Mureithi and Sharma (1984), and Kinyanjui (1987). Although limited input-output tables are used, the analysis cannot be done exhaustively due to paucity of relevant information. For example, Ikiara (1977) admits that he is unable to compare Kenya's economic structure with that of Tanzania for three

reasons. First, there was only one issue of an input-output table for Tanzania for 1969. Second, the classification of sectors used in the Tanzanian input-output table is different from that used for the Kenyan tables. Finally, the Tanzanian table does not have full input coefficients. Similarly, Kinyanjui (1987) is unable to calculate the technical coefficients for capital equipment linkages, due to lack of data. Nevertheless, the use of limited input-output analysis is adequate to indicate broad aspects of linkages within the African economies.

6:1. Data Collection

The data used in analysing the inter-firm and spatial linkages of small scale manufacturing industries are obtained from a sample of 197 firms through the field research undertaken. The data describes only the capital equipment (which includes handtools predominantly utilized in the informal sector), raw material, market linkages and subcontracting arrangements both on an areal and firm to firm basis. The values of which are indicated in Kenyan shillings and percentage proportions. Since it was not possible to obtain the original source (that is where it is manufactured) of the capital equipment for the informal industrial units, the place of purchase is used as a surrogate.

6:2. Data Analysis and Interpretation

The hypothesis examined in this section is, there are strong linkages between the small scale manufacturing industries and Kisumu's urban industrial economy. This hypothesis attempts to investigate the degree of integration of small scale industries in Kisumu. The data collected is analysed at a two-stage level. In the first stage analysis, the proportion of entrepreneurs who get their training from the modern sector; the number of establishments that have subcontracting arrangements; and obtain their raw material or sell their products to other firms in Kisumu are examined. In the second stage, these inter-firm linkages are given a spatial dimension

in order to trace their source and destination regions. A sample of the Input-Output Model is given in Appendix 18. A simplified input-output system is used to establish these spatial linkages. An input-output table is useful here since it provides a convenient framework for measuring and tracing these spatial relationships. The main thrust of input-output research has been geared to the needs of the developed countries; much of this work is inappropriate for application to the Third World countries, at least not without considerable modification (Bulmer-Thomas, 1982).

This study utilizes a simplified input-output system because the available data does not allow a finer breakdown and in any case the table would be unmanageable. In the simplified input-output model the linkages are expressed as follows:

(i) Capital Equipment Linkage (CL)

$$CL = \frac{xij}{xi}$$

where CL = the capital equipment linkage.

xij = the proportion of capital equipment purchased from region j

xi = the gross output of a given industry i

(ii) Raw Material Linkage (RL)

$$RL = \frac{xij}{xi}$$

where RL = raw material linkage

xij = the proportion of raw material purchases from region j

xi = the gross output of a given industry i

(iii) Market linkage: It was not possible to calculate the technical coefficients for market linkages because, it was not easy to obtain the proportion of sales, particularly from the informal industrial units. Generally, firms have comparatively little knowledge of the sectoral

distribution of sales even in the developed countries; for instance, Bulmer-Thomas (1982) in carrying out a survey of manufacturing firms in Scotland, was forced to abandon questions on the distribution of sales, although questions on purchases are satisfactorily answered. The technical coefficients CL, RL are expressed as a percentage.

6:3. Inter-firm Linkages

One of the most important sources of technical knowledge is through the links the informal sector maintains with the modern sector. Thus in terms of technological linkage between the informal and formal sector only 9.9 per cent of the entrepreneurs received their training from modern small scale firms (Figure 6:1). A much smaller percentage when compared to the findings of Aboagye (1986) where over 60 per cent of the entrepreneurs in the wood products and metal fabrication were at one time or another employees in large scale firms. However, the study also included the informal service activities. This small percentage can be explained by the fact that most of the informal sector entrepreneurs receive their training through apprenticeship. In fact 51.4 per cent of them are trained as apprentices (Table 3:2). At the same time access to the formal sector firms is not usually possible, because the employment in these firms has not been able to keep pace with the supply of labour (Table 4:6). One of the most enterprising entrepreneurs in this study had previously been employed by a multinational corporation (mnc) dealing in refrigerators, quit formal employment to set up his own enterprise. This enterprise is now engaged in the manufacture of jua-kali refrigerators and has now found a large market in the low-income areas.

Subcontracting is an arrangement whereby a firm requests another independent firm to undertake the whole or part of an order it has received instead of doing the work itself. In Kisumu, two types of subcontracting arrangments exists. One involves the processing of certain

parts of products by one firm to enable the subcontracting firm to complete the manufacturing process. While in the other one, formal sector firms give contracts to the informal firms to produce for them goods. The former arrangement is much more common than the latter, for instance, most of the carpenters in Kibuye open air market take parts of beds, chairs and tables for curving and patterning to other firms. This is because the market does not have electricity and so these carpenters have to rely on the electrical lathe machines of other firmsThe wooden furniture and fixtures firms recorded the highest (42.9 per cent) in this type of subcontracting arrangement. It is followed by the metal works at 16.3, 4.1 for the publishing firms and 2.0 per cent for machinery and equipment (Figure 6:2). The subcontracting arrangements in the publishing industry takes place with industries in Nairobi.

The other form of subcontracting is not commonly practiced, it forms only 34.7 per cent whilst the former is 65.3 per cent (Figure 6:2). This type of arrangement takes place in the wooden furniture and fixtures, metal works, and machinery and equipment firms. In this type of arrangement, the formal firms give the informal industrial units a contract to make some goods for them and pay them. This kind of arrangement benefits both parties, although the informal sector entrepreneurs felt that the formal firms pay very little for the products they make, and yet they sell them for a high profit. But at the same time they said that this type of arrangement is useful during the low demand seasons.

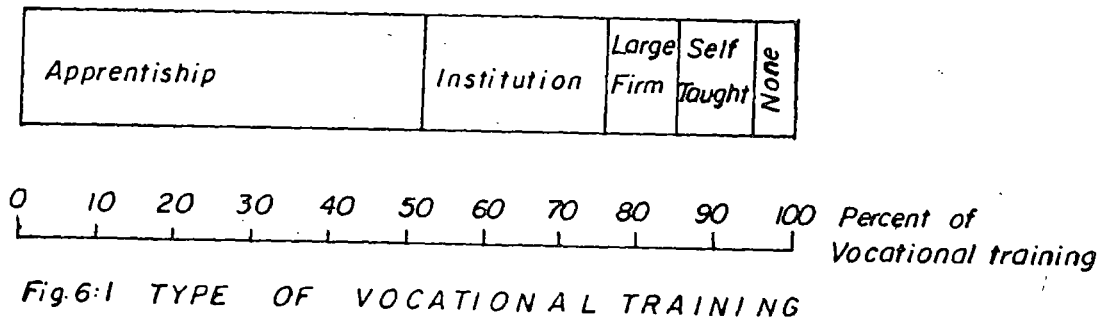


Fig.6:1 TYPE OF VOCATIONAL TRAINING

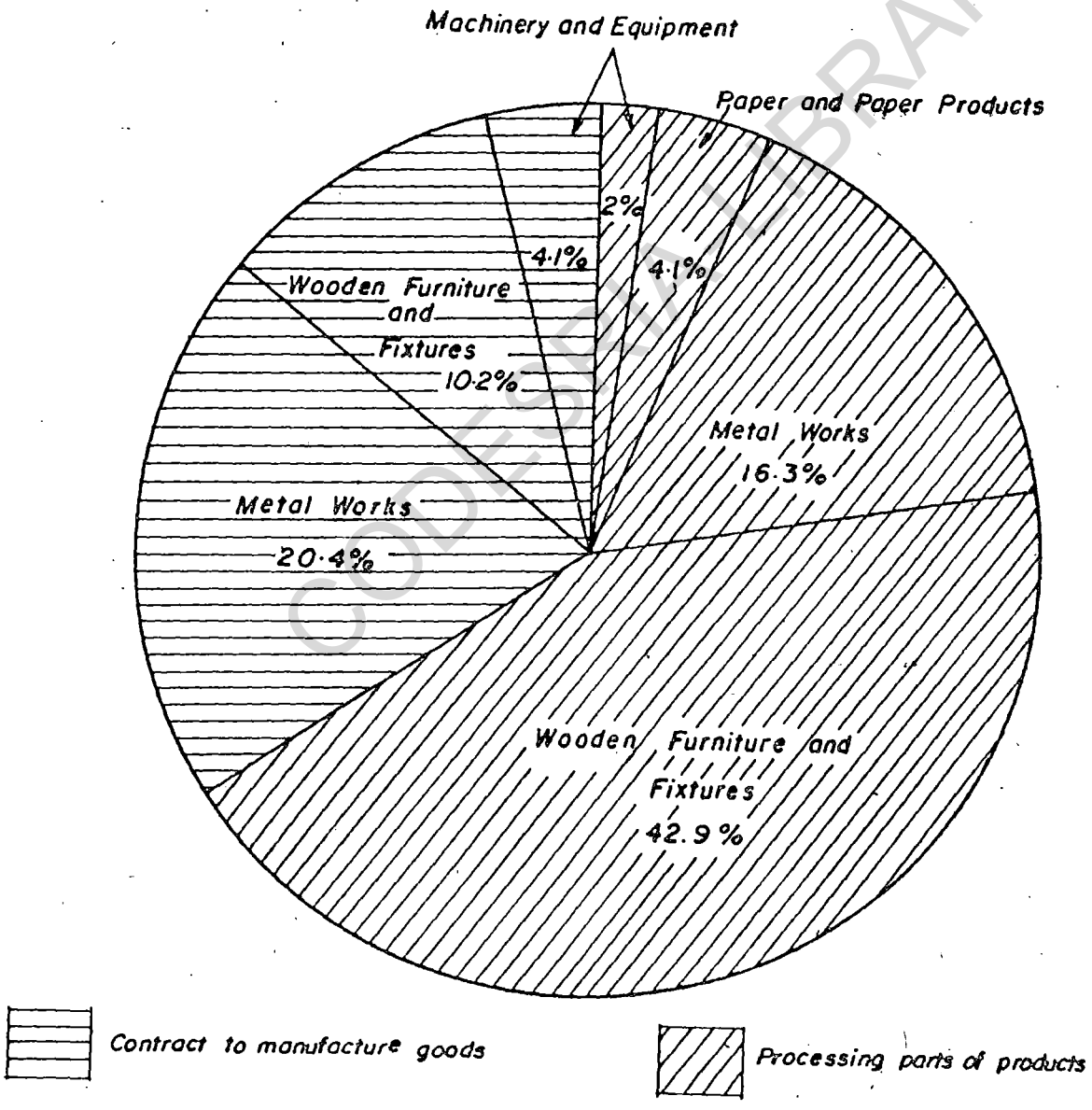


Fig. 6:2 Subcontracting Arrangements of Small Scale Industries

Subcontracting demands close contact between supplier and purchaser, since the latter must conform to specifications, materials and completion dates necessitated by the purchasers overall production schedule. All the firms that have this type of arrangement in Kisumu are found only in the Old Town, Nyalenda and Manyatta which are in close geographical proximity.

Local subcontracting arrangements have almost certainly encouraged the development of informal industrial units in the wooden furniture and fixtures, and metal works. One important aspect of the contribution which subcontracting linkages have made to local industrial growth lies in the foothold which they afford small, new firms within the industrial activity of the area.

There are also significant raw material and market inter-firm linkages in Kisumu. About 40 per cent of the wooden furniture and fixtures firms obtain their raw materials from other firms in Kisumu. There is a large number of saw mills and timber suppliers in the municipality. This is because wood is easily obtainable from its hinterland. This is followed by the metal works firms at 22.1 per cent. Although ironsheets and other related raw material are not locally produced, a number of the hardware shops stock imported iron-based raw material. Next is the food products firms at 12.4 per cent, the two main raw materials are fish and maize which is readily fulfilled by an abundant local supply. Wholesalers and/or middlemen buy fish and maize from the producers and sell to manufacturing firms. The wearing apparel (9.7 per cent) and leather firms (7.1 per cent) are the last two with significant inter-firm linkages.

TABLE 6:1. INTER-FIRM LINKAGES FOR ALL INDUSTRIES

Industry	Raw Material (%)	Market (%)	Total Linkages (%)
Food Products	12.4	24.3	15.3
Wearing Apparel	9.7	10.8	10.0
Weaving Industries	0.9	5.4	2.0
Leather Industries	7.1		5.3
Wooden Furniture and Fixtures	43.4	13.5	36.0
Paper and Paper Products	0.9	2.7	1.3
Chemicals and Plastic Products		5.4	1.3
Non-Metallic Mineral Products	0.9		0.8
Metal Works	22.1	27	23.3
Machinery and Equipment	1.8	8.1	3.3
Other Industries	0.9	2.7	1.3
TOTAL	100.1	99.9	99.9

Source: Author's Fieldwork, 1988.

Generally, the informal industrial units rely heavily on other firms for the supply of raw materials (Table 6:2). This is because these establishments do not have the financial ability of obtaining large quantities of raw materials directly from the suppliers or producers, but have to be content with the daily or weekly purchases of small quantities of raw material. Whereas the formal firms are able to obtain large quantities at comparatively cheaper wholesale prices. This puts most of the informal industrial units in a poor bargaining position, indeed they complained of the high cost of raw materials.

Market inter-firm linkages are not as strong as the raw material, they form only 27.4 per cent of the total inter-firm linkages compared to 72.7 per cent for the raw material (Table 6:2). The significance of the market linkage is clearly demonstrated by the metal works informal industrial units, of which 6.7 per cent sell their products to firms in the formal sector. This is particularly true for the jua-kali tinsmiths who sell products such as frying pans and water buckets to hardware shops, who in turn sell them to individuals.

TABLE 6:2. INTER-FIRM LINKAGES:FORMAL AND INFORMAL

Industry	Raw Material(%)		Market(%)		Total	
	F.S	I.S	F.S	I.S	F.S	I.S
Food Products	6.7	2.7	4.0	2.0	10.7	4.7
Wearing Apparel	1.3	6.0	1.3	1.3	2.6	7.3
Weaving Industries		0.7	0.7	0.7	0.7	1.4
Leather Industries		5.3				5.3
Wooden Furniture and Fixtures	4.6	28	2.0	1.3	6.6	29.3
Paper and Paper Products	0.7		0.7		1.4	
Chemical and Plastic Products			1.3		1.3	
Non-Metallic Mineral Products		0.7				0.7
Metal Works	2.0	14.7		6.7	2.0	21.4
Machinery and Equipment		1.3	0.7	1.3	0.7	2.6
Other Industries	0.7		0.7		1.4	
TOTAL	16	58.7	11.4	13.3	27.4	72.7

F.S = Formal Sector I.S = Informal Sector

Source: Author's Fieldwork, 1988.

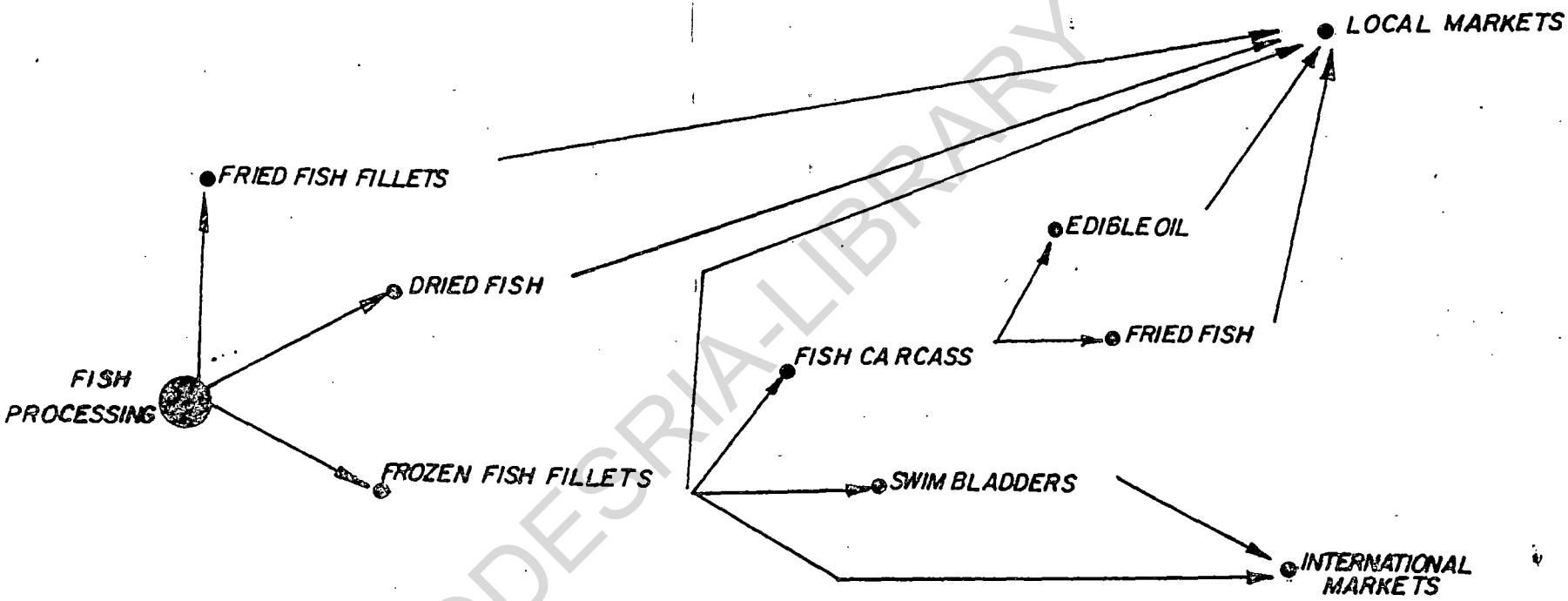
The wooden furniture and fixtures firms show weaker-than-expected market inter-firm linkages with only 2.0 per cent of them selling their products to other firms. Although, there appears to be significant forward and backward inter-firm linkages in Kisumu, these firms are still not well intergrated in the urban industrial economy. For example, the observed fish linkages (Figure 6:3) clearly illustrate this phenomena. The proposed fish linkages (Figure 6:4) on the other hand show how this industry can be spread in order to ensure that intersectoral linkages are forged.

Generally then, it appears that apart from the wooden furniture and fixtures and metal works firms, the subcontracting arrangement among the firms in Kisumu are very poorly developed. This could be attributed to the fact that the benefits of this type of arrangements are not well understood by the small scale entrepreneurs.The raw material linkages, although strong seem to reinforce the view that greater investments in the formal sector is usually at the expense of the informal sector (Santos, 1979). Since the firms in the formal sector have monopolised the raw

material sources, they are able to charge exorbitant prices for them to the disadvantage of the informal sector.As was shown earlier in chapter three, the formal sector firms not only appear to have greater access to institutional credit facilities, but also invest comparatively greater capital inputs than the informal ones. Finally, the low inter-firm market linkages imply that the small scale production of most of the firms necessitates that they sell to individual customers to make a profit. According to Logan (1966: 460) local linkages may well be an indication of areal industrial maturity.Thus, in comparison to other major urban areas, Kisumu is still not industrially mature, since it exhibits a weakly-developed structure. This is exemplified by the type of industries found in Kisumu's urban industrial economy. As was illustrated in the section on historical development (chapter 2) Kisumu still has very few agro-industries and also lacks a capital goods industry.

6:4. Capital Equipment Spatial Linkages

Table 6:3 shows the capital equipment spatial linkages for all the industries. In particular the chemical and plastic products, the category termed `other' industries and paper and paper products have high linkages, whereas the food products and metal works have moderate and the remaining have low linkages.The high linkages can be explained by the fact that these industries utilize large and complex machinery which are imported from countries like West Germany, Britain, United States of America (USA), India and France. The moderate linkages exist because some of the machinery utilized by these firms such as posho(maize) milling and electrical lathe machines are now being manufactured or assembled in Kenya.However, the leather, and machinery and



Source: Authors Fieldwork, 1988.

Fig. 6:3 Observed Forward Linkages of the Fish Industry

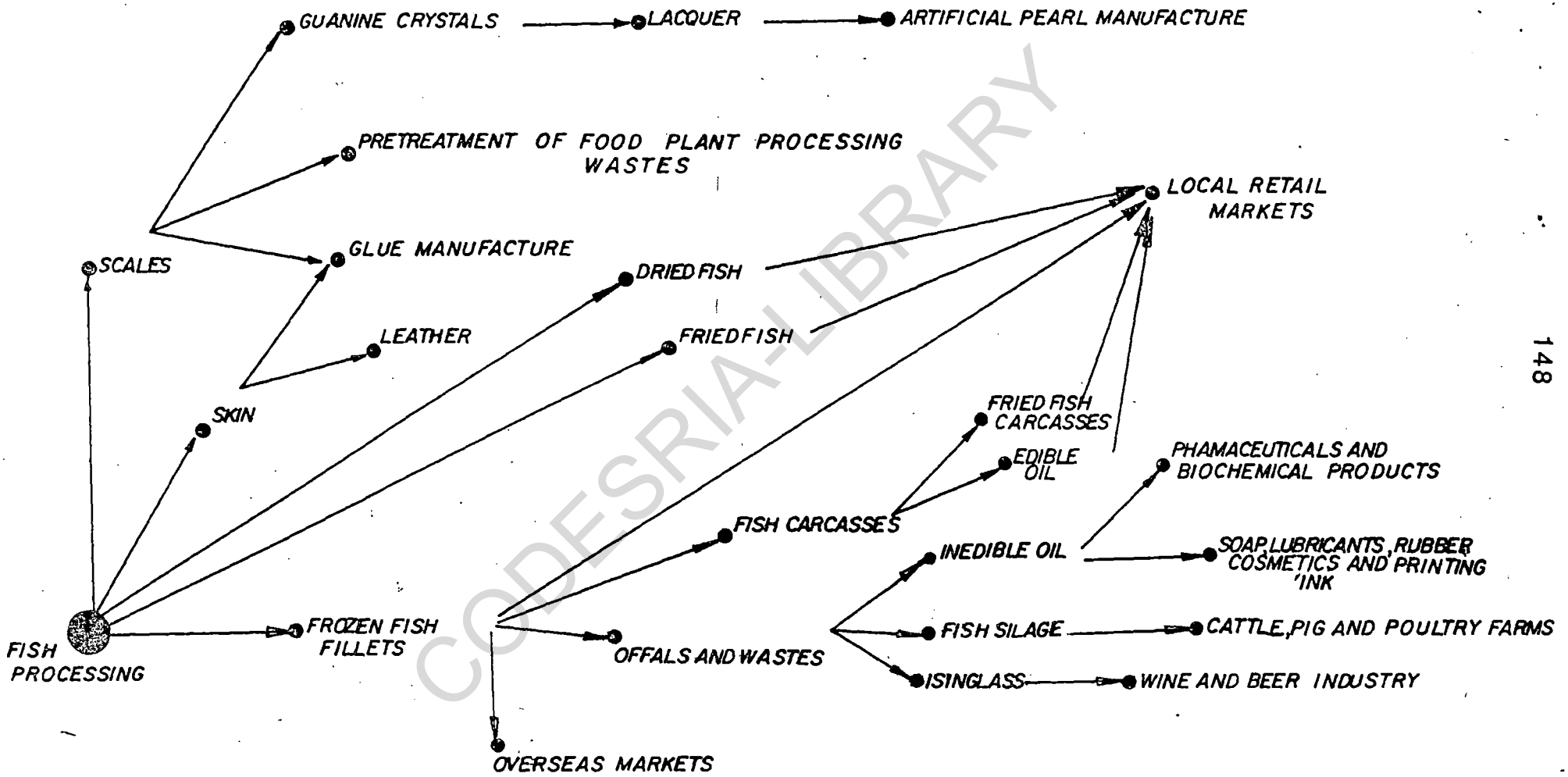


Fig. 6.4 Suggested Forward Linkages of the Fish Industry

equipment firms rely mainly on handtools which are easily obtainable from the Local Area. The latter industrial category which consists of the manufacture of refrigerators and the assembly of bicycles obtains all its capital equipment solely from the Local Area since the processing stage consists mainly of assembling ready-made imported components.The wearing apparel, weaving, wooden furniture and fixtures and non-metallic mineral products firms obtain almost all their machinery from the Rest of the Country. Their equipment is mainly derived from Nairobi and Mombasa. Table 6:4 shows the capital equipment linkages for the formal sector firms. Apart from the omission of the non-metallic (which is an informal sector industry) there is no significant difference between tables 6:3 and 6:4.

TABLE 6:3. CAPITAL EQUIPMENT LINKAGE FOR ALL INDUSTRIES

Industrial Category	Local Area	Rest of the Country	Rest of the World
Food Products	0.0614	0.3480	0.5906
Wearing Apparel	0.0960	0.5786	0.3253
Weaving Industries	0.0103	0.6423	0.3472
Leather Industries	0.8000	0.2000	0.0000
Wooden Furniture and Fixtures	0.4725	0.3974	0.1300
Paper and Paper Products	0.0035	0.2448	0.7517
Chemicals and Plastic Products	0.0168	0.1195	0.9712
Non-Metallic Mineral Products	0.0020	0.9980	0.0000
Metal Works	0.2320	0.3094	0.4141
Machinery and Equipment	1.0000	0.0000	0.0000
Other Industries	0.0007	0.0000	0.9993

Source: Author's Fieldwork, 1988.

In contrast table 6:5 shows that the informal industrial units have very high links with the Local Area; moderate and very low links with the Rest of the Country and the Rest of the World

TABLE 6:4. CAPITAL EQUIPMENT LINKAGE - FORMAL SECTOR

Industrial Category	Local Area	Rest of the Country	Rest of the World
Food Products	0.0487	0.3451	0.6063
Wearing Apparel	0.0079	0.6316	0.3605
Weaving Industries	0.0033	0.6111	0.3856
Leather Industries	0.7273	0.2727	0.0000
Wooden Furniture and Fixtures	0.3665	0.4449	0.1886
Paper and Paper Products	0.0035	0.2448	0.7517
Chemical and Plastic Products	0.0168	0.1195	0.9712
Metal Works	0.1731	0.3574	0.4696
Machinery and Equipment	1.0000	0.0000	0.0000
Other Industries	0.0007	0.0000	0.9993

Source: Author's Fieldwork, 1988.

TABLE 6:5. CAPITAL EQUIPMENT LINKAGE - INFORMAL SECTOR

Industrial Category	Local Area	Rest of the Country	Rest of the World
Food Products	0.5434	0.4566	0.0000
Wearing Apparel	0.9123	0.0877	0.0000
Weaving Industries	0.0425	0.7834	0.1741
Leather Industries	1.0000	0.0000	0.0000
Wooden Furniture and Fixtures	0.7025	0.2945	0.0292
Non-Metallic Mineral Products	0.0020	0.9980	0.0000
Metal Works	0.6132	0.3307	0.0561
Machinery and Equipment	1.0000	0.0000	0.0000

Source: Author's Fieldwork, 1988.

respectively. This is because the informal industrial units have limited capital resources which would not enable them to import machinery. Instead, they make use of locally available machinery for which they are often given hire purchase terms. Generally, the food products, wearing apparel, leather, wooden furniture and fixtures, metal works, and machinery and equipment firms have strong linkages with the Local Area.

Whereas the weaving and non-metallic mineral products firms have strong links with the Rest of the Country.

6:5. Raw Material Spatial Linkages

Table 6:6 depicts the raw material spatial linkages of manufacturing establishments in Kisumu. The table exhibits very strong local backward linkages for 63.6 per cent of the establishments. These are the non-metallic mineral products, weaving, food products, leather, wooden furniture and fixtures, metal works, and machinery and equipment firms. The non-metallic

TABLE 6:6. RAW MATERIAL LINKAGE FOR ALL INDUSTRIES

Industrial Category	Local Area	Rest of the Country	Rest of the World
Food Products	0.8014	0.0058	0.1927
Wearing Apparel	0.2352	0.7124	0.0523
Weaving Industries	0.9650	0.0350	0.0000
Leather Industries	0.7078	0.2922	0.0000
Wooden Furniture and Fixtures	0.5757	0.4243	0.0000
Paper and Paper Products	0.1429	0.7143	0.1429
Chemicals and Plastic Products	0.0000	0.0051	0.9949
Non-Metallic Mineral Products	1.0000	0.0000	0.0000
Metal Works	0.5287	0.3525	0.1137
Machinery and Equipment	0.5265	0.4735	0.0000
Other Industries	0.1240	0.0000	0.8760

Source: Author's Fieldwork, 1988.

mineral products and weaving industries purchase 100 and 97 per cent of their raw materials from Kisumu. These consist of soil, sand, papyrus reeds and palms which are in abundant supply. The food products firms namely fish filleting and maize milling obtain their raw material either directly from the producers or through the middlemen who bring fish and maize to the firms.The high coefficient of the leather firms (0.7078) is

mainly accounted for by the informal industrial units (Tables 6:7 and 6:8) which buy leather (processed in Nairobi) from the formal sector firms in Kisumu. The metal works informal industrial units obtain 93 per cent of their raw material locally. They buy empty metal drums from the large scale firms such as Kisumu Cotton Mills (KICOMI) and Cussons Soap Factory.

Firms with strong backward linkages with the Rest of the Country are the wearing apparel and paper and paper products. The former obtain 71.4 per cent of their raw material from Eldoret, Nairobi and Thika. This is because the local cotton mill (KICOMI) had been placed under receivership due to mismanagement and has only just began operations. The paper and paper products firms purchase their raw material from Webuye and Nairobi, since there is no local paper mill in Kisumu.Finally, only the chemical and plastics and the category termed `other' industries have strong links with the Rest of the World. The former utilize PVC materials, granules, aromatic compounds and dyes which are imported from Europe and Saudi Arabia, and are not locally available. The category termed `other' industries which engage in the manufacture of electric cables and artificial fishing fliers use raw material mainly from Britain. These comprise copper, PVC materials, coloured florescence, white deer hair, seal's fur, mustered hooks, lead wire and white duck and hen pheasant quills.

A comparison of tables 6:7 and 6:8 reveals that there are significant differences in the leather, wooden furniture and fixtures, and machinery and equipment firms. The formal leather industries have no backward linkages with neither the Local Area nor the Rest of the World. The strong backward linkage with the Rest of the Country is surprising because Kisumu has an adequate supply of hides and skins.There are about three formal sector firms which collect the hides and skins and latter send them

to Nairobi for processing. Once they have been processed they are sold back to other firms in Kisumu who in turn supply the manufacturing firms. The high (100 per cent) backward linkage of machinery and equipment with the Rest of the Country is due to the fact that, the raw materials utilized which include copper wire, cotton tape, varnish, silver solder and bicycle component parts are obtained from Nairobi and Mombasa. The formal wooden furniture and fixtures firms derive 84.8 per cent of their raw materials from the Rest of the Country. Due to the comparatively easier capital mobilization by these firms, they are able to transport raw materials from distant (often cheaper and of different varieties) places such as Elburgon, Kakamega and Mount Elgon.

The informal industrial units once again have very strong backward linkages with the Local Area; a few with the Rest of the Country and none with the Rest of the World. Those industries with high backward local linkages include: food products, wearing apparel, leather, wooden furniture and fixtures, non-metallic mineral products, metal works and machinery and equipment. The weaving firms derive 51.8 per cent of their raw materials from the Rest of the Country. These consist of cloth, thread, dyes, sodium hydroxide, hydrosulfide, fibre wood, towels, T-shirts, wool and silk from Nakuru, Nairobi and Thika.

TABLE 6:7. RAW MATERIAL LINKAGE - FORMAL SECTOR

Industrial Category	Local Area	Rest of the Country	Rest of the World
Food Products	0.7958	0.0060	0.1982
Wearing Apparel	0.1462	0.7953	0.0585
Weaving Industries	0.9939	0.0061	0.0000
Leather Industries	0.0000	1.0000	0.0000
Wooden Furniture and Fixtures	0.1519	0.8481	0.0000
Paper and Paper Products	0.1429	0.7143	0.1429
Chemical and Plastic Products	0.0000	0.0051	0.9949
Metal Works	0.4957	0.3813	0.1230
Machinery and Equipment	0.0000	1.0000	0.0000
Other Industries	0.1240	0.0000	0.8760

Source: Author's Fieldwork, 1988.

6:6. Market Spatial Linkages

TABLE 6:8. RAW MATERIAL LINKAGE - INFORMAL SECTOR

Industrial Category	Local Area	Rest of the Country	Rest of the World
Food Products	1.0000	0.0000	0.0000
Wearing Apparel	0.9901	0.0099	0.0000
Weaving Industries	0.4818	0.5182	0.0000
Leather Industries	0.9881	0.0119	0.0000
Wooden Furniture and Fixtures	0.9813	0.0187	0.0000
Non-Metallic Mineral Products	1.0000	0.0000	0.0000
Metal Works	0.9320	0.0680	0.0000
Machinery and Equipment	0.5265	0.4735	0.0000

Source: Author's Fieldwork, 1988.

TABLE 6:9. MARKET LINKAGES FOR ALL INDUSTRIES

Industry Category	Local Area	Rest of the Country	Rest of the World
Food Products	ALL	ALL	FS
Wearing Apparel	ALL	ALL	NONE
Weaving Industries	ALL	ALL	NONE
Leather Industries	ALL	IF	NONE
Wooden Furniture and Fixtures	ALL	ALL	NONE
Paper and Paper Products	FS	FS	NONE
Chemicals and Plastic Products	FS	FS	FS
Non-Metallic Mineral Products	IF	IF	NONE
Metal Works	ALL	ALL	NONE
Machinery and Equipment	ALL	FS	NONE
Other Industries	FS	FS	FS

FS = Formal Sector IF = Informal Sector

Source: Author's Fieldwork, 1988.

Table 6:9 shows the spatial market linkages of the manufacturing firms. From the table it is observed that only the food products, chemical and plastic products, and the category termed `other' industries formal firms have forward linkages with the Rest of the World. Afro Meat

Company, Bright Light cosmetics, Polycapes, Ramason Exporters and Lakeside Fly Tyers produce goods for export. Afro Meat Company and Ramason Exporters export frozen fish fillets and swim bladders to Israel, France, Holland and Britain. Lakeside Fly Tyers sell artificial fishing fliers to the U.S.A., Britain, Italy and Northern Ireland while Polycapes and Bright Light cosmetics export their products to the PTA (Preferential Trade Area) countries. None of the informal industrial units export their products. The forward linkages of the manufacturing industries with Local Area and the Rest of the Country are fairly well developed.

6:7. Summary of the Findings

The foregoing industrial linkage analysis reveals that, the technological and subcontracting inter-firm linkages are not very significant among the small scale industries in Kisumu. It is only the wooden furniture and fixtures, metal works, and paper and paper products enterprises that have significant arrangements. On the other hand, there are strong raw material inter-firm linkages among the industries. Overall, the informal industrial units rely heavily on the other firms for the supply of raw materials. There are weak forward inter-firm linkages among the industries.

The analysis of the spatial linkages reveals that the small scale industries have greater capital equipment linkages with the Rest of the World in general, and especially for the food products, paper and paper products, chemical and plastic products, metal works and the category termed `other' industries. For the informal industrial units there are strong linkages with the Local Area.

With the exception of the paper and paper products, and the category termed `other' industries, the spatial raw material linkages with the Local Area are generally strong. Forward linkages with the Local Area and the Rest of the World are weak. Therefore the hypothesis that, there

are strong linkages between the small scale manufacturing industries and Kisumu's urban industrial economy has been only partly validated.

Chapter 7: SUMMARY AND CONCLUSIONS

7:0. Introduction

This chapter starts by reiterating the aims and pointing out the limitations of this study. It proceeds to recapitulate the major research findings and point out their implications for policy before making recommendations for future research.

The stimulus for this study arose from the need for studies of spatial economic behaviour to offer guidelines on the general rules that determine industrial location behaviour at the firm level. In particular the study sought to:

(i) analyze the structure of small scale manufacturing firms, this involved studying all those factors that influence the type, ownership and employment characteristics of the firm;

(ii) determine the factors which motivate small scale entrepreneurs to establish enterprises in Kisumu;

(iii) examine the factors influencing the intra-urban spatial pattern of small scale manufacturing enterprises in Kisumu and;

(iv) investigate the inter-firm and spatial linkages of small scale manufacturing firms in Kisumu.

7:1. Limitations of the Study

Available secondary data on small scale industries, particularly for the informal sector is scanty and the study had to rely heavily on primary data. However, the availability of primary data was limited by the fact that some of the owners were reluctant to divulge information about their enterprises. This is especially true of the financial aspects of their businesses. For example, it was very difficult to obtain data on the amount of initial capital input, sales and cost of labour. Because of this, it was not possible to calculate or estimate the capital-labour ratios, gross-value-added and also the technical coefficients for the industries surveyed. In order to ascertain the correctness of the other

financial data obtained, the enterprises which were willing to give this information were interviewed on several different occasions.

Finally, taken in the broad perspective, spatial and structural linkage analysis should be conducted between all urban and rural economic activities in Kisumu and its hinterland, in order to determine whether there are any significant inter-relationships. At the same time, the planning aspects of small scale industries should have been tackled in greater detail because they are closely related to the location of these industries. However, given the limited financial resources and time it was not possible to study these aspects.

7:2. Summary of the Findings

The data used in the analysis was obtained from both primary and secondary sources. The primary data was collected through a detailed questionnaire and personal observations and interviewing. The secondary data was obtained from maps of Kisumu, Provincial and Annual reports of the Kenya government ministries. The information obtained was analysed in four stages.

First, a descriptive analysis was undertaken in order to identify the structure of the small scale industries. The analysis shows that there are distinct structural characteristics between the formal and informal enterprises. There are also significant differences among the industry sub-groups. On the whole the informal industrial units are more numerous than the formal sector ones. The formal small scale firms are mainly limited liability companies and/or family-owned. They are comparatively highly mechanized, make greater capital investments and higher profits. On the other hand the informal industrial units are mainly privately-owned and 'self-help' projects. They are labour-intensive; they utilize mainly hand-tools; and they invest relatively less capital thus, making lower profits. Therefore, the research premise that, significant variations exist in the type, ownership

and employment characteristics of small scale industries in Kisumu has been validated.

Second, factor analysis employing the Principal Components technique was used to identify the most significant factors that motivate entrepreneurs to establish industries in Kisumu. This investigation reveals that at the aggregate level, the factors include agglomeration, industrial infrastructure, business information and personal considerations. The location factors unique to the formal sector firms are personal considerations and energy while for the informal industrial units they are non-skilled labour, raw material linkage and production. Therefore, the hypothesis that, there is a significant relationship between entrepreneurial perception and the location of small scale industries has been validated.

Third, multiple linear regression and factor analysis were performed to determine which factors strongly influence the intra-urban spatial pattern. The analysis shows that there are twelve important variables which determine this pattern. These include local authority incentives, nearness to home and hence familiarity of area, proprietor lives here, proximity to market, prohibitive regulations and high standards in other areas, social status or prestige, lack of alternative planned zone for industries, availability of local capital for investment, psychic preferences, and personal contacts for business information. General environmental features and enterprise already at present site are found to be unique to the formal and informal sector firms respectively. Thus, the hypothesis which proposes that, economic factors are relatively unimportant in the location of small scale industries has only partially been validated.

Finally, a simplified input-output system was utilized to establish the linkages between the small scale industries and Kisumu's urban industrial economy. The analysis reveals that the subcontracting arrangements are not very significant among the small scale industries in Kisumu. It is only the

wooden furniture and fixtures, metal works, and paper and paper products enterprises that have significant subcontracting arrangements. There are strong raw material inter-firm linkages among these industries. Generally, the informal industrial units rely heavily on the formal firms for the supply of raw materials, which puts the former in a poor bargaining position. There are weak forward inter-firm linkages among the industries.

The results of the spatial linkage analysis indicate that the small scale industries have greater capital equipment linkages with the Rest of the World in general. This is especially true of the food, paper and paper products, chemical and plastic products, metal works and the category termed 'other' industries.

The spatial raw material linkages with the Local Area are generally strong in all industries with the exception of paper and paper products and the group termed 'other industries'. Forward linkages with the Local Area and the Rest of the World are weak. The hypothesis that, there are strong linkages between the small scale industries and Kisumu's urban industrial economy has also been only partially validated.

7:3. Implications of Research Findings

From the analysis it has been observed that the small scale industry sector of Kisumu municipality plays an important role in the urban industrial economy. This sector not only provides employment at a cost much lower than similar activities in the large scale sector, but it also provides incomes and basic practical skills to the large low-income urban population. Unfortunately, for a number of reasons it appears, that unless special effort is made to promote and support activities in this sector the significant contribution that it has made to the economic development of the municipality may decline.

Several problems affect the establishment of new enterprises in Kisumu. These include lack of adequate financial and physical capital,

technical knowledge and lack of suitable industrial premises. Institutional credit facilities are not often made available for the small scale industries, forcing them to rely on informal sources of capital. This has severely affected the growth and development of this sector, especially the informal sector. Government support in the form of loans has not been very effective. The Kenya Industrial Estates (KIE) which is supposed to promote small scale enterprises has not been particularly active in propagating information and disbursing its loan facilities. Few entrepreneurs in the informal sector in Kisumu are even aware of its industrial promotion activities.

Other problems which affect industrial development in Kisumu include lack of demand, limited managerial and technical skills, and inadequate supply of raw materials. Small scale entrepreneurs in Kisumu complain of the high cost of licences and heavy taxes imposed on them. Another factor which affects their operations is the non-payment of goods bought on credit by customers.

Other problems relate to the structures in which they carry out their operations. Most of the informal industrial units carry out their work in the open air or in temporary structures. In the rainy season it is almost impossible for the workers to continue working under such conditions and are forced to take refuge elsewhere, loosing a lot of man hours in the process; and sometimes sustaining heavy losses as a result of the improper industrial premises and poor storage facilities.

The implication here is that, the removal of these constraints would result in a fuller utilization of the capacities of these industries. Therefore, programmes for assistance to the small scale industries should be reorganized and co-ordinated to meet their needs, and exploit to full benefit the major role of this sector in promoting employment. At present the Kenya government has gone a long way in accommodating and encouraging economic activities

in this sector. For example, amenities such as water and electricity have been made available to this sector.

However, these industries particularly the informal industrial units should be reorganized into co-operative and business associations so as to enhance the agglomeration effects in production and marketing. In this way, programmes could be organized to assist the artisans since their problems or difficulties tend to be similar. Through these co-operatives and associations, loans and courses on managerial and technical skills can be affected. More emphasis should be laid on equipment and raw material assistance. Finally, there is also a need to establish an information dissemination centre.

The spatial analysis shows that when the entrepreneurs establish small scale industries in Kisumu, they shy away from those areas (such as the rural parts of the municipality) which lack industrial infrastructure such as cheap and efficient transport networks. This has resulted in over-concentration of industries in areas which have these facilities like in the Old Town. Therefore, industrial infrastructure should be spread to all other parts of the municipality to avoid over-crowding of industries in particular areas.

The planning of industrial zones for small scale industries should also take into consideration, the effect of personal factors such as nearness of place of work to place of residence. If these zones are located in areas which are very far from most of the entrepreneurs' homes, they may not be fully utilized. Instead, the entrepreneurs will continue to locate in or near their residential areas, causing environmental pollution and technological hazards. For example, the waste products emitted into the air during the manufacturing process of the metal works industries have discoloured many of the residential houses closeby.

At the same time most of the industrial zones in Kisumu are occupied by the large scale industries because they are the ones which can meet the high standards and regulations required in these zones. The small scale industries

particularly the informal industrial units are left with no choice but to establish in areas where the regulations and requirements are more relaxed, resulting in a haphazard location of industries.

Apart from the KIE and the newly established jua-kali zone, there is no other area that has been officially set aside for the small scale industries in Kisumu. Therefore, there is a need to set aside industrial zones for these industries. The planning of these zones should consider, among other things, the standards and regulations conducive to these industries and the possible subdivision of these zones according to the type of manufacturing activities.

The analysis of the industrial linkages seems to suggest that efforts should be made to initiate industrial strategies which would ensure that intersectorial (inter-firm) and inter-regional (spatial) linkages are intensified in order to strengthen the space economy of Kisumu. For instance, sub-contracting arrangements should be encouraged between large and small scale firms, and also among the small scale industries, to enable them to make better use of their production capacities. At the same time informal industrial units should be encouraged to produce raw material inputs for the large scale industries. For example, enterprises could be set up to process the waste products from the fishing industry. These enterprises could produce goods such as oil, fish sillage and isinglass for use in the chemical, meat processing industry and alcoholic beverage manufacture respectively.

Kisumu commands a rich agricultural hinterland which produces crops such as cotton, sugar cane, rice, fruits, groundnuts, and also supports animal husbandry. Kisumu, therefore, has great potential for agro-based industries. Unfortunately, this potential has not been fully exploited. For example, there is no leather tannery in the municipality. This forces the leather industries to buy their raw materials from other parts of the country, although there is an abundant supply of hides and skins. Kisumu also has a potential for the development of food processing industries. In the long run, the

establishments of such industries could lead to greater inter-regional linkages because Kisumu's hinterland includes a number of regions.

These recommendations can be effectively implemented by reforming policies concerning the small scale industry sector. Emphasis should be placed on policies which reduce restrictions on the availability of raw material directly to the sector, instead of purchasing them through unscrupulous middlemen. Government activities should endeavour to utilize goods from the small scale industry sector (which are usually cheaper) in order to promote its sales.

There is also a need to have a definite policy on the location of these industries, since most of the available industrial zones are dominated by the large scale industries. More specifically, the sector should be given greater official recognition, and be integrated into official plans.

7:4. Future Research Recommendations

This study only confined itself to the defined scope as set out in the introduction. It is, however, recognized that there are significant aspects of this subject that warrant a more detailed examination if a complete knowledge of the problem is to be achieved. It is, therefore, suggested that the following areas be given special attention in future research:-

(i) For purposes of comparison similar studies could be carried out in other urban centres such as Mombasa, Nakuru, Nyeri and Kakamega.

(ii) A study of the planning aspects of the small scale industries could be undertaken to see how they relate to policy-formulation.

(iii) Case studies of the different types of small scale manufacturing activities could be carried out to see how they conform to the general characteristics and pattern.

Selected References

`A Basic Needs Strategy for Development'. 1977. Report of the Director-General, ILO. Development Digest. Vol. XV. No.1. January.

Aboagye, A.A. 1986. ILO Report: Informal Sector Employment in Kenya.

Alonzo, W. 1968. `Urban and Regional Imbalances in Economic Development'. J. of Economic Development and Cultural Change, Vol.17. pp.1-14.

Awuor, R.O. 1979. `Relationship of Kisumu's Industrial Sector to the Resource Hinterland: A Case Study of Kisumu's Cotton Mills'. Unpublished M.A. Thesis, U.O. Nairobi.

Barker, E.E. 1958. A Short History of Nyanza. Nairobi: East African Literature Bureau.

Barr, B.M. and K.J. Fairbain. 1978. `Linkage and Manufacturers' Perception of Spatial Economic Opportunity' in F.E.I. Hamilton. ed. Contemporary Industrialization and Regional Development. London: Longman. pp.122-143.

Bassi-Zambelli, D. 1982. `Technical Report: Small Industries Sector - its present situation and prospects for development'. UNIDO. Vienna.

Bater, J.H. and D.F. Walker. 1970. `Further Comments on Industrial Location and Linkage'. Area. Vol.4. pp 59-63.

Berry, B.J.L. 1960. `An Inductive Approach to Regionalization of Economic Development' in N. Ginsburg. ed. Essays on Geography and Economic Development. Chicago: University of Chicago.

----------1961. `City Size Distributions and Economic Development'. J. of Economic Development and Cultural Change, Vol.9. pp.573-88.

----------1966. `Essays on Commodity Flows and Spatial Structure of the Indian Economy'. Research Paper No.111. U.O.Chicago.

Blalock, H.M. 1985. Social Statistics. Auckland: McGraw-Hill Book Co.

Boeke, J.H. et al. 1961. Indonesian Economics. The Hague: W. Van Hoeve.

Bookman, A.E. 1973. `The Changing Economic Role of Luo Women: An Historical and Ethnographic Approach'. Harvard University.

Bradburn, M.N. and S. Sudman et al. 1981. Improving Interview Method and Questionnaire Design. San Francisco: Jossey-Bass Publishers.

Bromley, R. 1982. `Small may be Beautiful, but it takes more than Beauty to ensure Success' in R. Bromley. ed. Planning For Small Enterprises in Third World Cities. Oxford: Pergamon Press.

Bulmer-Thomas. 1982. Input - Output Analysis in Developing Countries. Chichester: J. Wiley and Sons.

Cattell, R.B. 1978. The Scientific Use of Factor Analysis. New York: Plenum Press.

Chatterjee, S. and B. Price. 1977. Regression Analysis By Example. New York: J. Wiley and Sons.

Child, F.C. 1973. `An Empirical Study of Small Scale Rural Industry in Kenya'. I.D.S. Working Paper No. 127, U.O. Nairobi.

Colony and Protectorate of Kenya. 1938. `Nyanza Province : Its Progress and Development'. Kisumu: Nyanza Printing Works.

----------1944. `Nyanza Province : Five Year Development Plan'. Nairobi: Government Printer.

----------1956. `Industry in Kenya'. Ministry of Commerce and Industry : 1955 - 56. Nairobi: Government Printer.

----------1963. `Kenya Census of Manufacturing 1961' Nairobi: Government Printer.

Collins, L. and D.F. Walker. ed. 1975. Locational Dynamics of Manufacturing Activity. New York: Wiley and Sons.

Darkoh, M.B.K. 1970. `A Preliminary Study of the Spatial Arrangement of Manufacturing in Ghana'. Sierra Leone Geographical Journal, No. 14.

----------1973. `Industrial Strategy and Rural Development in Africa with Special Reference to Ghana'. Geoforum, Vol. 16.pp. 7-24.

----------1974. `Towards a Planned Industrial Reallocation Pattern in Ghana' in R.A. Obudho and S.EL Shakhs. ed.Urbanization, National Development and Regional Planning in Africa. New York: Prager Publishers.

----------1984. Tanzania's Industrial Strategy. Kisumu : Anyange Press Ltd.

----------1986. `Tanzania's Long-term Industrial Strategy: The Basic Industry Strategy BIS'. African Urban Quarterly, Vol.1. No.3 & 4. pp.235-245.

Dickson, D. and R. Gichira. 1987. `Problems Facing Entrepreneurs in Kenya', in Paper Presented at the Workshop of Kenya's Industrial and Agricultural Strategies Towards the Year 2000, Nairobi, 21-25th September, 1987.

Dillon, W.R. 1984. Multivariate Analysis. New York : J. Wiley and Sons.

Dixon, C. and B. Leach. 1978. `Sampling Methods for Geographical Analysis'. Catmog. No. 17. Norwich: Geo. Abstracts.

Downs, R.M. 1970. `Geographic Space Perception'. Progress in Geography, Vol.2. pp. 65-108.

Draper, N. and H. Smith. 1966. Applied Regression Analysis. New York: J. Wiley and Sons.

Dwyer, D.J. ed. 1971. Asian Urbanization : A Hong Kong Casebook. Hong Kong: Hong Kong University Press.

Elkan, W. 1987: `Policy For Small Scale Industry: A Critique'. Discussion Papers in Economics, No. 8701. The University of West London.

Eysenck, H. J. 1953: `The Logical Basis of Factor Analysis'. The American Psychologist. Vol. 8. pp.105-144.

Fearn, H. 1961. An African Economy: A Study of the Economic Development of the Nyanza Province of Kenya, 1903-1953. London : Oxford University Press.

Fei, D.J.H. and G. Ranis. 1964. Development of the Labour Surplus Economy Theory and Policy. Illinois: Homewood.

Freeman, D.B. and G.B. Norcliffe. 1985. Rural Enterprise in Kenya. Chicago: The University of Chicago.

Friedmann, J. 1964. `Cities in Social Transformation' in J. Friedmann and W. Alonzo. ed. Regional Development and Planning. Massachusetts : M.I.T. Press.

Geertz, C. 1963. Peddlers and Princes : Social Change and Economic Modernization in Two Indonesia Towns. Chicago: The University of Chicago

Gilmour, J.M. 1974. `External Economies of Scale, Inter-Industrial Linkages and Decision-Making in Manufacturing' in F.E.I. Hamilton.

ed. Spatial Perspectives on Industrial Organization and Decision-Making. London : J. Wiley and Sons.

Gitao, T.K. 1970. `Location of Industry and Policies for Location in Kenya' in M. Safier. ed. The Role of Urban and Regional Planning in National Development for East Africa. Kampala: M. Obote Foundation. pp. 132 - 145.

Goddard, J. and A. Kirby. 1976. `An Introduction to Factor Analysis' Catmog. No.7. Norwich: GEO Abstracts.

Greenhut, M.L. 1956. Plant Location in Theory and Practice. Chapel Hill : North Carolina Press.

----------and M. L. Colberg. 1962. Factors in the Location of Florida Industry. Florida: Florida State University.

----------1967. `Interregional Programming and the Demand Factor of Location'. J. of Regional Science, Vol.7, pp.151-60.

Griffin, J.I. 1956. Industrial Location in the New York Area. New York: City College Press.

Gudgin, G. 1978. Industrial Location Processes and Regional Employment Growth. Farnborough: Saxon House.

Gulhati, R. and U. Sekhar. 1981. `Industrial Strategy for Late Starters : The Experience of Kenya, Tanzania and Uganda'. World Bank Staff Working Paper No. 457. Washington D.C.

Hamilton, F.E.I. 1974. `A View of Spatial Behaviour, Industrial Organizations and Decision-Making' in F.E.I. Hamilton. ed. Spatial Perspectives on Industrial Organization and Decision-Making London: J. Wiley and Sons. pp. 3 -43.

Hansen, W. and B. Schultz. 1981. `Imperialism, Dependency and Social Class'. Africa Today, Vol. 28. No.3.

Haring, L.L. and J.F. Lounsbury. 1975. Introduction to Scientific Geographic Research. Iowa: Wm. C. Brown Co. Publishers.

Harper, M. 1984. Small Business in the Third World. New York :J. Wiley and Sons.

Harriss, J. 1985. `Our Socialism and Subsistence Engineering : the Role of Small Enterprises in the Engineering Industry of Combatore, South India' in R. Bromley. ed. Planning for Small Enterprises in Third World Cities. New York: Pergamon Press.

Hauser, D.P. 1974. `Some Problems in the Use of Stepwise Regression Techniques in Geographical Research'. Canadian Geographer, Vol. 18. pp.148-158.

Henrysson, S. 1957. Applicability of Factor Analysis in the Behavioural Sciences: A Methodological Study. Stockholm: Almquist and Wiksell.

Herrick, O.W. 1973. `Delimiting Regional Sub-Areas for Studies of Timber-Resource-Based Activity in the Northeast'. Forest Science, Vol.19. No.3. pp.180-189.

Hofmann, M. 1986. `The Informal Sector in an Intermediate City: A Case in Egypt'. J. of Economic Development and Cultural Change, Vol.34 No.2. pp.263-277.

Hoover, E.M. 1948. The Location of Economic Activity. New York: McGraw-Hill Book.

Hoselitz, B.F. 1959. `Small Industry in Underdeveloped Countries'. J. of Economic History, Vol.19.

House, W.J. 1978. `Nairobi's Informal Sector : A Reservoir of Dynamic Entrepreneurs or a Residual Surplus Labour?' I.D.S. Working Paper No. 347, U.O. Nairobi.

Hunker, and Wright. 1963. Factors of Industrial Location in Ohio. Bureau of Business Research, College of Commerce and Administration. Ohio State University.

Ikiara, G.K. 1977. `Structural Changes in Kenya's Economy, 1953 -1973'. Unpublished M.A. Thesis, U.O. Nairobi.

----------1981. `Identification of High Linkage Sectors Using Input - Output Analysis'. Paper prepared for the National Symposium on Industrial Research and Development, 7th - 11th December 1981. U.O. Nairobi.

----------1987. `An Evaluation of Policy Measures and Incentives for Industry and Agriculture Contained in Sessional Paper No.1 of 1986'. Paper presented at the Workshop of Kenya's Industrial and Agricultural Strategies Towards the year 2000, Nairobi, 21 - 25th September 1987.

International Labour Organization Report. 1972. Employment, Incomes and Equality.

Johnston, R. J. 1977. `Principal Component Analysis and Factor Analysis in Geographical Research: Some Problems and Issues'. South African Geographical Journal, Vol.59. No.1. pp.30-44.

----------1980. Multivariate Statistical Analysis in Geography. London: Longman.

Kabagambe, D.M. 1975. `The Role of Small Scale Industries in Developing Urban Economies: A Case Study of Kisumu Peri-Urban Areas'. Unpublished M.A. Thesis, U.O. Nairobi.

Katona, G. and J.N. Morgan. 1952. `The Quantitative Study of Factors Determining Business Decisions'. Quarterly J. of Economics, Vol. 66: 67 -90.

Kaplinsky, R. ed. 1978. Readings on the Multinational Corporation in Kenya. Nairobi: Oxford University Press.

Keeble, D.E. 1969. `Local Industrial Linkage and Manufacturing Growth in Outer London'. Town Planning Review, Vol.40. No.2. pp.163-188.

----------and D.P. Hauser, 1971. `Spatial Analysis of Manufacturing Growth in Outer South-East England 1960 - 1967. I. Hypotheses and Variables'. Regional Studies, Vol.5. No.4. pp.229-262.

----------1972. `Spatial Analysis of Manufacturing Growth in Outer South-East England 1960 - 1967. II. Method and Results'. Regional Studies, Vol.6. pp.11-36.

Killick, A. 1986. `Twenty-five Years of Development: the Rise and Impending Decline of Market Solutions'. Development Policy Review, Vol.4, No.2.

Kim, K.S. 1973. `The Balance of Payments and Employment-Creation Effects of Import Substitution in Kenya - An Input - Output Approach'. I.D.S. Working Paper No.108, U.O. Nairobi.

King, L.J. 1969. Statistical Analysis in Geography: New Jersey : Englewood Cliffs.

Kinyanjui, N.M. 1987 `The Location and Structure of Industries in Thika Town'. Unpublished M.A. Thesis. Kenyatta University.

Kisumu, Municipality 1967. Kisumu Guide. Kisumu: Municipality of Kisumu.

Kitching, G. 1977. `Modes of Production and Kenyan Dependency'. Review of African Political Economy, No.8. pp.56-74.

Leung, H.L. 1979. `Location of Manufacturing Industries in Hong Kong'. Urban Studies, Vol.16, pp.205-211.

Lever, W.F. 1972.a. `The Intra-Urban Movement of Manufacturing: A Markov Approach'. Institute of British Geographers Transactions, Vol.56. pp.21-38.

----------1972.b. `Industrial Movement, Spatial Association and Functional Linkages'. Regional Studies, Vol.6. No.4. pp.371-383.

Leys, C. 1973. `Interpreting African Under-development: Reflections on the ILO Report on Employment, Incomes and Equality in Kenya'. African Affairs, Vol.72, No.289 pp.419-429.

Little, I.M.D. 1987. `Small Manufacturing Enterprises in Developing Countries'. The World Bank Economic Review, Vol.1, No.20. pp.203-235.

Livingstone, I. 1982. `Alternative Approaches to Small Industry Development' in M. Fransman. ed. Industry and Accumulation in Africa. London: Heinemann.

Logan, M.I. 1964. `Manufacturing Decentralization in the Sydney Metropolitan Area'. Economic Geography, Vol.40. pp.151-162.

----------1966.a. `Capital City Manufacturing in Australia'. Economic Geography, Vol.42. pp.139 - 151.

----------1966.b. `Locational Behaviour of Manufacturing Firms in Urban Areas'. Annals of the Association of American Geographers, Vol.56. pp.451-466.

Losch, A. (1954). The Economics of Location. New Haven: Yale University Press

Macoloo, G.C. 1984. `Housing in Kisumu Town'. Unpublished M.A. Thesis, U.O. Nairobi.

Mandelbaum, K. 1961. The Industrialization of Backward Areas. Oxford: Blackwell

Marenya, A.1988. `Where Best Things are in Plenty'. The Standard, 15th April, 1988. p.17-28, Nairobi.

Marris, P and A. Somerset. 1974. African Businessmen. Nairobi: East African Publishing House.

Matson, A.T. 1958. `The Early History of Kisumu'. Kisumu Guide: Municipality of Kisumu Monograph. Nairobi: United Africa Press. p.19.

Mbwesa, D. N. 1988. `A Study of Some Socio-Economic Factors Affecting Roadside Farming in Kiambu and Limuru Divisions'. Unpublished M.A. Thesis, Kenyatta University.

McDermott, P.J. and M.J. Taylor. 1976: `Attitudes, Images and Location: The Subjective Context of Decision- Making in New Zealand Manufacturing'. Economic Geography, Vol.52.

----------1974: `Market Linkage and Spatial Monopoly in New Zealand Manufacturing'. New Zealand Geographer, Vol.30.

Mc Gee, T. G. 1971. The Urbanization Process in the Third World. London: Bell and Hyman Ltd.

----------1976. `The Persistence of the Proto-Proletariat'. Progress in Geography, Vol.9.

----------1977. `Conservation and Dissolution in the Third World City: The `Shanty Town' as an element of Conservation'. Seminar Paper Presented to a Symposium on `Shanty Towns' held in Berg Wartenstein, Austria from July 1 to 10 1977.

Mghweno,S.M. 1977. `The Role of Small Scale Industry in the Low Income Housing Communities: A Case Study of Morogoro Urban'. Unpublished M.A. Thesis. U.O. Nairobi.

Missen, G.I. and M.I. Logan. 1977. `National and Local Distribution Systems and Regional Development'. Antipode. Vol.9. pp.60-74.

Mochache, J.M.H. 1985. `A Study of Cottage Industries in the Urban Informal Sector: A Case Study of Gikomba Belt Neighbourhood, Kenya'. Unpublished M.A. Thesis, U.O. Nairobi.

Morrison, J.L. et al. 1968. `Basic Measures of Manufacturing in the United States, 1958'. Economic Geography, Vol.44. No.4. pp.296-311.

Mueller, E. and J.N. Morgan. 1962. `Location Decisions of Manufacturers'. American Economic Review, Papers and Proceedings, Vol.52, pp.204-17.

Mureithi, L.P. 1975. `Elasticity of Substitution, Returns to Scale and Firm Size: An Analysis of Kenyan Data'. I.D.S. Discussion Paper No.221, U.O. Nairobi.

----------and K.L. Sharma. 1984. `Growth Linkages Between Agriculture and Industry in Kenya'. J. of East Africa Research and Development, Vol.14.

Nie, N. et.al. 1970. Statistical Package for the Social Sciences. London: Mc Graw Hill Book Co.

Nixson, F.I. 1973. Economic Integration and Industrial Location. London: Longman.

Norcliffe, G.B. 1972. Inferential Statistics for Geographers. New York: J. Wiley and Sons.

----------1975. `A Theory of Manufacturing Places' in L. Collins and D.F. Walker. ed. Locational Dynamics of Manufacturing Activity. New York: J. Wiley and Sons.

North, D.J. 1974. `The Process of Locational Change in Different Manufacturing Organizations' in F.E.I. Hamilton. ed. Spatial Perspectives on Industrial Organization and Decision-Making. New York :J. Wiley and Sons.

Norusis, M.J. 1985.a. SPSSX: Introductory Statistics Guide. New York: Mc Graw-Hill Book Co.

----------1985.b. SPSSX: Advanced Statistical Guide. New York: MC Graw-Hill Book Co.

Obara, D.A. 1983. `Environmental and Agronomic Factors Influencing Variations in Small Holder Cotton Yields in the Kano Plains, Kisumu District, Western Kenya'. Unpublished Ph.D. Thesis, U.O. Nairobi.

Obudho, R.A. and P.P. Waller. 1976. Periodic Markets, Urbanization, and Regional Planning. Connecticut: Greenwood Press.

----------1981. `Historical Perspective of Urbanization' in R.A. Obudho.ed. Urbanization and Development Planning in Kenya. Nairobi. Kenya Literature Bureau. pp.5-36.

----------1986. `Multivariate Analysis of Kenya's Urban System'. Geo Journal, Vol.13. No.4. pp.385-399.

Ochieng, W. 1979. People Round the Lake. London: Evans Brothers Ltd.

Ogendo, R. B. 1966.`Industrial Significance of the Kenya Forests: A Geographical Study in Location and Structure of the Forest-Based Industries'. Cahiers d'Etude Africaines, Vol.6 No.23. pp.504-521.

----------1967.a. `The Location and Structure of Kenya's Agricultural Processing Industries'. U.O. London. Unpublished Ph.D. Thesis.

----------1967.b. `The Significance of Industrial Zoning to Rural Industrial Development in Kenya: A Study of the Facts and Methodology'. Cahier d'Etudes Africaine, Vol.7. pp. 444 - 484.

----------1969. `Industrial Role of Main Towns of Kenya'. Proceedings of the University of East Africa Social Science Council Fifth Annual Conference. Nairobi, December 8 - 12, pp. 836 - 853.

----------1972. Industrial Geography of Kenya. Nairobi: East African Publishing House.

Ogunja, J. 1986. `Alternative Utilization of the Nile Perch of Lake Victoria'. Kisumu: Fisheries Dept.

Olsson, G. 1965. `Distance and Human Interaction'. Geografiska Annaler, Vol.47B. pp.3-43.

Ominde, S.H. 1968. Land and Population Movements in Kenya. Illinois: Northwestern University Press.

Onyemelukwe, C.C. 1974. `Industrial Location in Nigeria' in F.E.I. Hamilton. ed. Spatial Perspectives in Industrial Organization and Decision-Making. London: J. Wiley and Sons.

Onyemelukwe, J.O.C. 1974. Economic Underdevelopment. London: Longman Group Ltd.

Oppenheim, A.N. 1982. Questionnaire Design and Attitude Measurement. London: Heinneman.

Oucho, J.O. 1974. `Migration Survey in Kisumu'. Unpublished M.A. Thesis U.O. Nairobi.

----------1979. `Population and Its Implication for Resource Development in the Lake Victoria Basin'. I.D.S. Working Paper No.288, U.O. Nairobi.

----------1980. The Port of Kisumu in the Lake Victoria Trade. Nairobi: Kenya Literature Bureau.

Pred, A. 1967. Behaviour and Location. Part 1. Lund Studies in Geography, Series B, No.27.

----------1974. `Industry, Information and City-System Interdependencies' in F.E.I. Hamilton. ed. Spatial Perspectives on Industrial Organization and Decision - Making. London: J. Wiley and Sons.

Rees, J. 1974. `Decision-Making, the Growth of the Firm and the Business Environment' in F.E.I. Hamilton. ed. Spatial Perspectives on

Industrial Organization and Decision-Making. New York: J. Wiley and Sons.

Republic of Kenya. 1969. `Kisumu Short Term Physical Development Plan'. Nairobi: Town Planning Department, Ministry of Lands and Settlements.

----------1977. `Census of Industrial Production'. Ministry of Planning and National Development: Central Bureau of Statistics.

----------1979.a. `Industrial Survey and Promotion Centre -Annual Report'. Ministry of Industry. Nairobi: Government Printer.

----------1979.b. `1979 Population Census Report'. Ministry of Planning and National Development. Nairobi: Central Bureau of Statistics.

----------1979.c. `Development Plan: 1979-1983'. Nairobi: Government Printer.

----------1983. `District Focus for Rural Development Circular'. Nairobi: Office of the President.

----------1984.a. `Kisumu District Development Plan: 1984-1988'. Nairobi: Government Printer.

----------1984.b. `Kisumu Municipality Draft Structure Plan 1984-2013'. Nairobi: Government Printer.

----------1984.c. `Kenya Development Plan: 1984-1988'. Nairobi: Government Printer.

----------1985. Kisumu Water Supply and Sanitation. Ministry of Local Government. Nairobi: H.P. Gauff and Co.

----------1986 .a. `Report on Small Scale Enterprises in Rural and Urban Areas of Kenya: 1973 - 82'. Nairobi: Central Bureau of Statistics.

----------1986 .b. `Sessional Paper No.1. Economic Management for Renewed Growth'. Nairobi: Government Printer.

----------1988. `1979 Population Census Report Vol.3 - Urban Population'. Ministry of Planning and National Development. Nairobi: Central Bureau of Statistics.

Rosenstein-Rodan, P. ed. 1964. Capital Formation and Economic Development. Cambridge: M.I.T. Press.

Rostow, W.W. 1980. The Stages of Economic Growth: A Non-Communist Manifesto. Cambridge: Cambridge University Press.

Rummel, R.J. 1967. `Understanding Factor Analysis'. J. of Conflict Resolution, Vol.11. No.4. pp.444-480.

----------1970. Applied Factor Analysis. Evanston: North Western University Press.

Rweyemamu, J.F. 1973. Underdevelopment and Industrialization in Tanzania: A Study of Pervasive Capitalism Industrial Development. London: Oxford University Press.

Santos, M. 1977. `Spatial Dialectics: The Two Circuits of Urban Economy in Underdeveloped Countries'. Antipode, Vol.9. pp.49-60.

----------1979. The Shared Space. London: Methuen.

Schnore, L.F. 1961. `The Statistical Measurement of Urbanization and Economic Development'. Land Economics, Vol.37. pp.229-45.

Schumacher, E.F. 1974. Small is Beautiful. London: Sphere Books Ltd.

----------1983. `Issues of Size and Technology' in R. Bromley. ed. Planning For Small Enterprises in Third World Cities. Oxford. Pergamon Press. pp.7-14.

Scott, A.J. 1982. `Location Patterns and Dynamics of Industrial Activity in Modern Metropolis'. Urban Studies, Vol.19. pp.111-135.

Smith, D.M. 1966. `A Theoretical Framework for Geographical Studies of Industrial Location'. Economic Geography, Vol.42. pp.95-113.

----------1971. Industrial Location. New York: J. Wiley and Sons.

----------1979. `Modelling Industrial Location: Towards a Broader View of the Space Economy' in F.E.I. Hamilton. ed. Spatial Analysis, Industry and the Industrial Environment. New York: J. Wiley and Sons.

Smith, W. 1955. `The Location of Industry'. Transactions of the Institute of British Geographers, Vol. pp.1-18.

Soja, E.W. 1968. The Geography of Modernization in Kenya: A Spatial Analysis of Social Economic and Political Change. Syracuse: Syracuse University Press.

Stafford, H.A. 1974. `The Anatomy of the Location Decision: Content of Analysis of Case Studies' in F.E.I. Hamilton. ed. Spatial Perspectives on Industrial Organization and Decision-Making. New York: J. Wiley and Sons.

Staley, E. and R, Morse. 1965. Modern Small Industry for Developing Countries. New York: Mc Graw-Hill Book Co.

Storey, D.J. 1983. `Small Firms Policies: A Critique'. J. of General Management, Vol.8. No.4. pp.5-19.

Summer, G.F. 1970. Attitude Measurement. New York: Rand McNally.

Swainson, N. 1980. The Development of Corporate Capitalism in Kenya: 1918-1977. London: Heinemann.

The Economic Development of Kenya: Report of an Economic Survey Mission, 1963. International Bank for Reconstruction and Development. Baltimore: The John Hopkins Press.

Taylor, M.J. and P.A. Wood. 1973. `Industrial Linkage and Local Agglomeration in the West Midlands Metal Industries'. Transactions of the Institute of British Geographers, Vol. 59. pp.129-154.

----------1975. `Organizational Growth, Spatial Interaction and Location Decision-Making'. Regional Studies, Vol.9. pp.313-323.

----------1978. `Spatial Competition and the Sales Linkages of Auckland Manufacturers' in F.E.I. Hamilton. ed. Contemporary Industrialization and Regional Development. London: Longman. pp.144-157.

Thomas, E.N. 1960. `Areal Associations Between Population Growth and Selected Factors'. Economic Geography, Vol.36. pp.158-170.

Tornquist, G. 1968. `Flows of Information and the Location of Economic Activity. Geografiska Annaler, Vol.50 B. pp.99-107.

Townroe, P.M. 1969. `Locational Choice and the Individual Firm'. Regional Studies, Vol.3. No.1. pp.15-24.

----------1972 `Some Behavioural Considerations in the Industrial Location Decision'. Regional Studies, Vol.6. No.3. pp.261-272.

Walker, D.F. 1975. `Governmental Influence on Manufacturing Location: Canadian Experience with Special Reference to the Provinces'. Regional Studies, Vol.9. pp.203-217.

Webber, M.J. 1972. Impact of Uncertainity on Location. Cambridge: The M.I.T. Press.

Weber, A. 1929. Theory of the Location of Industry. (trans. C. Friedrich). University of Chicago Press: Chicago.

Wegulo, F.N. 1984. `Location, Structure and Impact of Manufacturing Industries: A Study of Nyanza Province, Kenya'. Unpublished M.A. Thesis, U.O. Nairobi.

Westcott, C.G. 1976. `Industrial Location and Public Policy: The Case of Kenya's Textile Industry'. I.D.S. Working Paper No.288. U.O. Nairobi.

----------and G. Norcliffe. 1981. `Towards a Locational Policy For Manufacturing Industry in Kenya' in G. Norcliffe and T. Pinfold. ed. Planning African Development. New York: Praeger Publishers.

Wheeler, J.O. and P.O. Muller. 1981. Economic Geography. New York: J. Wiley and Sons.

Wood, P.A. 1969. `Industrial Location and Linkage'. Area. Vol.2. pp.32-39.

Wolpert, J. 1964. `The Decision Process in a Spatial Context'. Annals of the Association of American Geographers. Vol.54. No.4. pp.537-558.

World Bank. 1978. Employment and Development of Small Enterprises. Washington D.C.

Wubneh, M. 1982. `A Spatial Analysis of Urban - Industrial Development in Ethiopia'. Foreign and Comparative Studies/African Series XXXIX. New York: Maxwell School of Citizenship and Public Affairs.

Yeates, M.H. 1965. `Some factors Affecting the Spatial Distribution of Chicago Land Values, 1910-1960'. Economic Geography, Vol.41. No.1. pp.57-70.

van Zwanenberg, R.M.A. and A. King. 1975. An Economic History of Kenya and Uganda 1800-1900. London: The Macmillan Press Ltd.

APPENDIX 1: INDUSTRIES VISITED

Nyanza Blacksmith
Farm Engineering Industries
Classic Engineering Industries
Bhamra Motors Ltd
Kiboswa Engineering Works
Tovisas Steelworks
Wapapa MetalWorks
Nyabera Engineering
Siandha Steelworks
Nora Owiro welding Services
Watta Engineering works
Ohawo Factory
Odera Onyango Athanja
Mumias Tinsmith Factory
Oyugis Tinsmith
Ugenya Tinsmith
Hamisi Bilali Workshop
Owila Nyandwat Body Builders
New Achola Engineering Works
Sabaku Body Building Workshop
Kaloleni Sheet Metal Works
New Maendeleo Welders
JuaKali Tinsmith
Karume Engineering Workshop
J.A. and Sons Welders
Kondiek Metal Works
Mocho Engineering (I)
Metal Furniture Workshop
Oposho Metal shop
Kanyololo Metal Plant
Kogelo Workshop
Mamba Tinsmith
Kochieng Tinsmiths
New Manyatta Tinsmiths
Kaachonjo Tinsmiths
Mbuta Tinsmiths

Chemsha Bongo Wood Makers
Yahya Carpentry
Kopany Company and Sons (Carpenters)
Aswekra Carpenters
Cinema Carpenters
Kibuye Wood Workshop
Kotieno Workshop
Kiloworkshop
Kaloleni Furniture Works
Masinde Group
Kamiyawa Furniture Shop
Hilton International Furniture
Jackie Furniture Mart (1983) Ltd
New Sunset Furniture
Ayodo Furniture
Otiato Furniture Workshop
Harambee Furniture
Otong'lo Furniture Workshop
Usoma Beach Boatmakers
Wananchi Crafts Shop (NCCK Ksm)
Toworo Industries
Pendeza Weavers
Makutex Youth Group
Jubilee Market Mats Shop
Buoye Basket Weavers
Reed Mat Makers
Lake Mat Makers
Nyalunya Basket Weavers
Kokongo Reed Mat Makers
Usare Reed Mats
Charles Bore Mat Making
Kowuor Mat Making
M/s Kasuku
Wilver Textiles Ltd
Jubilee Mat Knitter
Lydya General Store
Tailoring Shop
J and J fashions

Orembo Furniture Works
Oriang' Furniture Shops
Kondiek Furniture
Manyatta Libya Furniture Works
Josiah Furniture Works
Olwa Furniture Works
Ariana Furniture
Ojola Furniture Workshop
Moriss Onyango Furniture Workshop
Konya Furniture
Onyango Furniture
Opo-nono Market Furniture
Opo-nono Market Workshop
James Chengo Workshop
Wood Workshop
Migori Workshop
Jakomwa Furniture Shop
Mocho Engineering (II)
Kowuo Furniture Workshop
Embassy Furniture Shop
Kondele Furniture Workshop
Nyalenda Woodwork
Konyo/Welo Mani Road Workshop
Nyalenda Furniture Shop
Israel Furniture Workshop
Owango Furniture Workshop
Maseno Furniture
Migori Wood Works
Chapachapa Carpenters
Wood Cutters (1986) Ltd
Manyatta Carpenters
Okore Carpenters
Village Carpentry
Fastworks Carpentry
Gor Mahia Carpentry
Kogony Carpenters
Adote Wood Works
Dudi Carpentry

Kisumu Tinsmiths
Ujenzi Tinsmiths
Siaya Tinsmiths
Nyalgunga Tinsmiths Ltd
Ambira Tincutters
Hongera Tinsmiths
Dunga Tinmakers
Okwera Tinsmiths
Okello Tinsmiths
Toyota Rollers (Tinsmiths)
Kiboswa Tinsmiths
Jonbi Tinsmiths
CapeTown (1981) Tinsmiths Ltd
Ramason Exporters Ltd
Kisumu Sweet Mart
Kibuye Posho Mills (I)
Nyanza Mattress Manufacturers Ltd
Kisumu Bakery Ltd
New Victoria Bakery
Afro Meat Co. Ltd
Kimble Food Distributors Ltd
Bandani Mbuta Processing
Chuth Ber Posho Mill
Nyabendi Posho Mill
Nyangiri Posho Mill
Gayatry Joinery Works
Design and Furniture
Jagit Joinery Works, Ltd
Ramogi Furniture and Building Co. Ltd
Modern Furniture Works
Sulwe Furniture Works
Rajini Sundra Furniture Shops
B.S. Sandhu Furniture Shops
Oywa Furniture
Jugnu Furniture Shop
Kanyakwar Furniture Workshop
Wathorego Furniture
Kadero Market Furniture Works

New Kumi Kumi Tailoring
Songa Tailoring Shop
Nyar Agak Enterprises
Tailoring Shop
Miyawa Tailoring Shop
Absalom Owila Tailors
Achieng Fashions
Kendu-Bay Fashions
Nangina Tailors
Nyalenda Tailoring Group
Nyaloka Tailoring Group
Okew Fundi Tailors
Dhaki Ber Tailoring Shop
S.A. Bhimani & Sons Ltd
P. Abon Ojwang Shoe Makers
Kinda Shoe Maker Shop
Samuel Midumbi Shoes Shop
Wananchi Craft (Shoe Makers) Shop
Nyandwar Shoeshop
Omondi Owila Shoemakers
Osiepe Shoeshop
Akamba Drum Makers
Osiepe Shoemakers
Rafiki Shoe Fitters
Diazo Industries
Anyange Press
Bhamra Lampshades
Polycapes Ltd
Bright Light Cosmetics
Bukna Tile Making Group
Maselina Otiendes Home
Pottery Ojola Market (1)
Pottery Ojola Market (2)
Benadette Odimas Home
Risper Okelos Home
Serphine Oukos Home
Wilkister Akados Home
Rose Ojwang Pot Making

Shamshuddin Bhimani and Sons Ltd
New Friends Workshop
Gem Electrical Specialist
Lakeside Fly Tyers
Kenby Cables
Kibuye Posho Mills II
Kibuye Posho Mills III
Nyanza Jaggery Wholesalers Ltd
Nyanduta Furniture Works

APPENDIX 2: QUESTIONNAIRE

This is a study being carried out on the small scale manufacturing industries in Kisumu town. The study aims at obtaining information on: the mode of ownership, the capital-labour ratios, types and organization of industries. It also seeks to obtain information on the factors that influenced your decision to locate in Kisumu town and the spatial distribution of raw materials and markets for your products.

The information acquired in this survey will be treated as strictly confidential and will be used for academic research purposes only.

Your cooperation will be highly appreciated.

QUESTIONNAIRE NUMBER _____

DATE OF (INTERVIEW) _____

(Tick or fill in as required)

A. INTRODUCTION

1.0 Name of enterprise _____

1.1 Sublocation _____

1.2 Road/Street _____

1.3 Position of Respondent:_____ Proprietor Other (please specify)

_____

1.4 Sex:_____Male_____Female_____

1.5 Home Area _____

1.6 Place of Residence_____
(within Kisumu Municipality)

1.6.1 Length of time (years) in the above residence

_____

1.7 Proprietors responsibilities and qualifications

Type of work_____

1.8 Number of years of formal education_____

Level:

Primary _____

Secondary/Technical_____

Higher_____

College/University_____

1.8.1 Where did you learn your trade?_____

At an institution_____

As an apprentice_____

As an employee in a large firm_____

Self taught_____

1.8.2 Would you like to have further training?

Yes_____

No_____

1.8.3 If yes, which type of training?

GeneralEducation_____

Accountancy_____

Managerial Skills_____

Use of Modern Machines_____

1.8.4 If no, why _____

_____

B. STRUCTURE

1.9 Type

What type of manufacturing enterprise is this?

Food products_____

Wearing apparel_____

Weaving industries_____

Leather industries_____

Wooden furniture_____

Paper and paper products_____

Chemical and plastic products_____

Non-metallic mineral products_____

Metal works _____

Machinery and equipment_____

Other industries_____

1.9.1 Mode of ownership and organization

What is the nature of ownership?_____

Sole (private)_____

Partnership_____

Co-operative_____

Family_____

Foreign_____

Parastatal_____

Other (please specify)_____

1.9.2 Is the structure where enterprise is located

Fully owned by the enterprise_____

Partially owned by the enterprise_____

Rented_____

Neither owned nor rented_____

2.2.1 If not rented

Given by municipal council_____

Given by private owner_____

Allowed by private owner_____

Other (please specify)_____

2.2.2 If rented how much does the enterprise pay per month?

_____K.Shs

2.3 Type of Structure

Under what type of structure is the enterprise operating?

Open air_____

Corrugated iron sheds_____

Wooden shed_____

Modern permanent structure_____

2.4 Date of origin

When did the enterprise begin to operate?

(year) _____

2.5 Problems in setting up enterprise

What were the important difficulties in setting up this enterprise?

Lack of/or inadequate capital or credit_____

Technical know how/skilled workers_____

Finding suitable premises_____

High licence fee_____

Others (please specify)_____

2.6 Records

Do you keep written records of your business?

Yes_____

No_____

2.6.1 If yes, why?

To keep note of creditors/debtors_____

For tax purposes_____

2.6.2 If no, why?_____

I have mental knowledge of performance of business_____

Records are not necessary_____

I can neither read nor write_____

2.7 Infrastructure

Indicate what forms of energy you utilized in production plus the total cost in 1987

	Cost (K.Shs)
Electricity Wind Diesel Solar	
TOTAL	

2.71 What is the total cost of water utilized in production in 1987?

_____(K.Shs)

2.8 Is the supply of water enough for your requirements?_____

2.81 What type of facilities are available at this site?

Water and electricity_____

Electricity only_____

Neither water nor electricity_____

Garbage disposal_____

2.9 Transport

What mode of transport do you use for raw materials and finished products?

Mode of Transport	Cost (K.Shs)
Own Vehicle Public Vehicle(s) Hired Vehicle(s) Bicycle(s) Cart(s) Head	
TOTAL	

3.0 Services

Please indicate which of the following services yourenterprise utilizes and also the total cost you paid for each of these services in 1987.

Service Type	Cost (K.Shs)
Legal	
Banking	
Accounting/Banking	
Postal	
Residential	
Health	
Education	
Transport	
TOTAL	

4.0 If your enterprise possess any of the following services, please indicate the service, type(s) it possess and the amount of capital spent in providing for each of the service named.

Service Type	Cost (K.Shs)

TOTAL

4.1 Production

List the type(s) of products that you produce in this enterprise and also show the amount(s).

Product(s)	Cost (K.Shs)	Weight/Volume
1		
2		
3		
4		
TOTAL		

Year	Cost (K.Shs)	Weight/Volume
1986		
1985		

1984_____

1983_____

4.2 Subcontracting

Do you make the whole product here or is it started or finished by someone else?

All made here_____

Started by someone else not working for me_____

What person or firm is it?_____

What do they do _____

Finished by someone else not working for me_____

What person or firm finishes it?_____

What do they do?_____

C. LABOUR

4.3 Workforce

How many people are engaged in this enterprise?

Total_____

Male_____

Female_____

4.31 How many of these people are engaged as:

	Male	Female

Paid employees	
Working proprietors	
Unpaid family workers	
Apprentices or learners	
Casual labourers	

4.32 What are the ages of the people engaged in this enterprise?

	Male	Female
10 - 14 years		
15 - 34 years		
35 - 54 years		
above 55 years		

4.4 Geographical source of labour

Indicate where you get your labour from showing the amount too

Source Region	Total
Kisumu Town	
Kisumu Rural	
Nyanza and Western Provinces	

Other parts of Kenya_____

(please specify, the Province (s) or town (s)_____

International_____

4.5 Problems of recruiting labour

Does the enterprise experience any difficulty in recruiting labour?

Yes, always _ _ _ _ _ _ _ _

Yes, sometimes _ _ _ _ _ _ _

No, never _ _ _ _ _ _ _ _

4.5.1 If yes, it is/was difficult to recruit

Skilled labour only_____

Unskilled labour only_____

Both_____

4.52 What form does the difficulty take?

Financial_____

Shortage_____

4.6 Training of Employees

Do you have a training programme for your employees?

Yes_____

No_____

4.61 If yes, describe the training programme fully

_____

_____

_____

4.62 If no, where are they trained?

Apprenticeship_____

Village _____

Polytechnic_____

Government Industrial Training Institute_____

University_____

Other (please specify)_____

4.7 Labour costs

What is/was your total labour costs in

1987 ---------- K.Shs

1986 ---------- K.Shs

1985 ---------- K.Shs

1984 ---------- K.Shs

1983 ---------- H.Shs

D CAPITAL

4.8 Recurrent Overheads

How much money did you require to start this enterprise?

_____K.Shs.

4.81 What was the initial source of finance for the enterprise?

	Amount	Proportion
Own saving		
Borrowed from friends/relatives		
Commercial Banks/Building Society		
Government Lending Agency		
Contribution from others i.e. Joint ownership		

Other (please specify)_____

4.9 Does your business have a licence?

Yes_____

No_____

4.91 If yes, how much does this cost?---------- K.Shs

4.92 How frequently must you renew it?

Renewal every ----------

5.0 Do you pay taxes (other than a licence fee)?

Yes_____

No_____

5.0.1 If yes, how much did you pay last year?---------- K.Shs.

5.1 Equipment

Do you use any machinery in the manufacturing process?

Yes_____

No_____

5.1.1 If yes, list the type(s) of machinery in use and the cost

Type	Cost (K.Shs).
1	
2	
3	
4	
Total	

5.12 Where do you buy your machinery from?

Source Region	Cost (K.Shs).
Kisumu Town	
Kisumu Rural	

Nyanza and Western Provinces	
Other parts of Kenya	
(please specify the province(s) or towns	
International (please specify the country)	

5.13 How is the machinery run?

By hand_____

By electricity_____

5.14 Do you use handtools

Yes_____

No_____

5.21 If yes, list the type(s) of handtool(s) in use and the cost

	Cost (K.Shs)
1	
2	
3	
4	
Total	

5.22 Where do you buy your handtools from?

Source Region Cost (K.Shs)

Kisumu Town

Kisumu Rural

Nyanza and Western Provinces

Other parts of Kenya

(please specify the province(s) or town(s)

International (please specify the country)

5.3 Business Expansion

In which order of importance from most to least difficult are the major obstacles that now prevent your business from further expansion? (Rank in order of importance)

Lack of loan facilities

Not enough customers(lack of demand)

Non-payments of debts

Unfair competition from large enterprises

Lack of management skills

Heavy taxes, licences

Lack of skilled personnel

Lack of adequate or irregular

supply of raw materials_____

Lack of capital equipment_____

Other (please specify)_____

5.31 What are you currently doing to improve this business?

Purchasing new equipment_____

Employing more skilled workers_____

Obtaining bank loans_____

Seeking assistance from another enterprise_____

Seeking assistance from relatives/friends_____

Nothing_____

Other(s) (please specify)_____

5.4. Government Role

Have you heard of any government programmes to assist small enterprises?

Yes_____

No_____

5.41. If yes have you tried to benefit from any such programmes?

Yes, successfully _ _ _ _ _ _ _ _ _ _ _ _ _

No, unsuccessfully_ _ _ _ _ _ _ _ _ _ _ _

No _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

5.42. If yes, what type of assistance did you get?

Loans_____

Technical advice_____

Raw material_____

Market_____

Other(s) (please specify)_____

5.43. If no why have you not taken advantage of the assistance provided? (Explain)

_____

_____

_____

_____

5.5. Have you ever been `harassed' by any representative of the Kenyan government?

Yes_____

No_____

5.51 If yes, please describe the circumstances

_____

_____

_____

_____

5.6 If assistance if provided or restrictions removed in what ways can this assist in your production and employment?

		Proportion	Amount(K.Shs)
(i)	production		
	Increase		
	output		

ii) Employment Proportion Total

No increase at all _

Increase in Employment _

E. **LOCATION**

5.7 Entrepreneur's Perception

Below is a list of factors which influence decisions to establish an enterprise. Consider your decision to establish this firm, and please indicate the level of importance of each factor that influenced your decision to establish your enterprise in Kisumu town, by indicating: very important (I), fairly important (FI) and least important (LI)

	VI	I	FI	LI
1. Availability of cheap non-skilled labour				
2. Social status/prestige				
3. Availability of local capital for investment				
4. Nearness to home and hence familiarity of area				
5. Governmental policy				
6. Efficient transport to and from other centres				
7. Psychic preferences				

8. Availability of residential facilities

9. Suitable climate

10. Low transport costs

11. Influence of local politics

12. Adequate supply of raw materials from local area

13. Lack of alternative planned zone for industries

14. Access to local market

15. General environmental features

16. Availability of water

17. Availability of land for industrial expansion

18. Local authority incentives

19. Access to internal business information

20. Access to supply of raw materials from other areas

21. Possible evasion of taxation

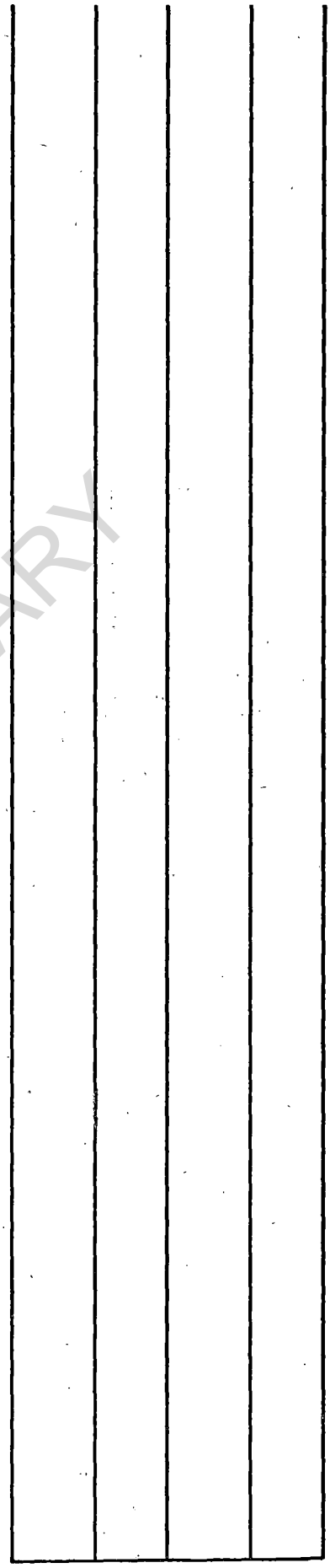
22. Lower land prices and rent

23. Proximity to other enterprises

24. Low labour costs

25. Personal contacts for business information

26. Availability of health services



27. Presence of urban economies (professional services, roads, banking, insurance, security etc).

28. Access to regional market

29. Availability of skilled labour

30. Suitable topography for siting of buildings and movement of machinery

31. Access to external business information

32. Availability of education facilitie

33. Prohibitive regulations and high standard requirements in other areas

34. Access to international market

35. Availability of energy

36. Others

37

38

39

5.8 From the above list rank in order of importance the factors that influenced your decision to locate in Kisumu

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

5.81 If the TEN factors you have identified above were found in the towns listed below, indicate which town you would choose to establish your enterprise?

Siaya _____

Kakamega_____

Kisii_____

Homa Bay_____

Busia_____

Chemelil_____

Mumias_____

5.9 Site Factors

Approximately what is the distance from the site of your enterprise to the town centre?

0 - 2 Km _____

3 - 5 Km_____

6 - 8 Km_____

More than 9 Km_____

6.0 Why is the enterprise located at its present site (Rank in order of importance)

Adequate Land for industrial expansion _____

Lower land prices and rents_____

Availability of transport_____

Access to major street_____

Availability of electricity_____

Accessibility to source of water_____

Nearness to town centre_____

Nearness to residential unit_____

Proprietor lives here_____

Proximity to market_____

Industrial estate_____

Social status/prestige _____

Personal contacts for business information_____

Psychic preference_____

Influence of local politics_____

Lack of alternative planned zone for industries_____

Possible evasion of taxation _____

Availability of raw materials_____

Prohibitive regulations and high standards _____

Requirements in other areas

6.1 Below is a list of factors which influence decisions to establish an enterprise. Consider your decision to establish this firm, and please indicate the level of importance of each factor that influenced your decision to your enterprise at its present site, by indicating: very important (VI), important (I), fairly important (FI) and least important (LI VI I FI LI)

	VI	I	FI	LI
1. Availability of local capital for investment				
2. Government policy				
3. Local Authority incentives				
4. General environmental features				
5. Suitable climate				
6. Social status/prestige				
7. Personal contacts for business information				
8. Psychic preferences				
9. Influence of local politics				

10. Nearness to home and hence familiarity of area

11. Lack of alternative planned zone for

12. Possible evasion of taxation

13. Prohibitive regulations and high standard requirements in other areas

14. Others

15.

16.

17.

18.

19.

20.

6.2 Approximately, what is the distance of the enterprise to the nearest road (RD) or (RW).

0 - 3 Km_____

4 - 7 Km_____

8 - 11 Km_____

12 - 15 Km_____

More than 16 Km_____

6.21 What are the most common type of roads in area where the enterprise is located?

Tarmac roads_____

Murram roads_____

Dry weather roads _____

Footpaths roads_____

F SPATIAL INTERRELATIONSHIPS

6.3 Raw Materials

List the raw materials utilized in production in 1987, indicating the cost and weight/volume

Raw Material	Cost (K.Shs)	Weight/Volume
1987		
1		
2		
3		
4		
5		
Total		

Year		
1986		

1985		
1984		
1983		

6.4 Spatial Distribution of Sources of Raw Materials

Indicate the geographical distribution of sources of raw materials by showing the total costs and weight/volume purchases from the following source region in 1987

Source Region	Cost Weight/ (K.Shs)	Volume
Kisumu Town		
Kisumu Rural		
Nyanza and Western Provinces		
Other parts of Kenya		
(please specify, the province(s) or town(s)		
International		
Total		

6.5 Inter-firm Linkages: Raw Materials

If you buy any of your raw materials from other industries within Kisumu town, please fill in the table below.

Firm's	Raw Materials	Cost(K.Shs)	Weight/

Name			Volume

6.51 If you buy any of your raw materials from any of the following, please indicate in the table below

Source of Raw materials	Cost (K.Shs)	Weight or Volume
Individuals		
Agents		
Parastatals		
(please name them)		
Government		
Instituitions		
(please name them)		
TOTAL		

6.6 Spatial Distribution of Market/Sales

Indicate where you sell your products specifying the total sales and weight/volume of each

Market Region	Cost(K.Shs)	Weight or Volume
Kisumu Town Kisumu Rural Nyanza and Western Provinces Other parts of Kenya (please specify, the province(s) or town(s) International		
TOTAL		

6.7 Inter-firm Linkages Market/Sales

If you sell any of your product(s) to other industries within Kisumu Town, please fill in the table below

Firm's Name	Product(s)	Sales Value (K.Shs)	Weight/Volume

6.71 If you sell your products to any of the following, please indicate sales value and weight or volume

Market	Sales Value (K.Shs)	Weight/Volume
Individuals		
Agents		
Parastatals		
(please name them)		
Government		
Institutions		
(please name them)		
TOTAL		

6.72 How do your buyers pay for your products?

Cash_____

Credit_____

Both_____

6.8 Sales Promotion

Do any institutions help in selling your products

Yes_____

No_____

6.81 If yes, please name them

1_____

2_____

3_____

4_____

6.9 Does your enterprise advertise its products?

Yes_____

No_____

6.91 If yes, what is the approximate cost used in advertising

annually? ----------K.Shs

6.92 How do you advertise your products?

Have a sign on the road_____

Call out to people_____

Tell customers to bring their friends/relatives_____

Take samples to potential customers_____

7.0 What problems do you experience in selling your products?

None_____

Transportation_____

Competition from other enterprise _____

Lack of demand/market_____

7.01 How do you try to solve these problems?

_____

_____

7.02 Information

Does your enterprise use the following sources of information?

Annual Trade Reports_____

The Kenya Gazette_____

International and Local Journals _____

Daily Newspapers _____

Personal Contacts_____

Economic Surveys _____

Other(s) (please specify)_____

7.03 How often do you use these sources of information?

Source	Everyday	Once a Week	Monthly/Yearly	Other specify
Annual Trade Reports				
The Kenya Gazette				
International or Local Journals				
Daily Newspapers				
Personal Contacts				

7.1 What are the main difficulties your enterprise experiences in receiving

(i) Internal business information _____

_____

(ii) External business information _____

_____

APPENDIX 3:
CLASSIFICATION OF SMALL SCALE MANUFACTURING INDUSTRIES IN KISUMU

Category (Component Industries Described According to Industrial Code Classification)	Description _Category	I.S.I.C Number _the International Standard
1	Food and Beverages Industries	
	Preserving and processing fish	3114
	Manufacture of animal fats	3115
	Grain mill products	3116
	Manufacture of bakery products	3117
	Sugar factories and refineries	3118
	Manufacture of sugar confectioneries	3119
	Manufacture of food products, n.e.c.	3121
	Manufacture of prepared animal feeds	3122
	Distilling, rectifying and blending spirits	3131
2	Textile, Weaving, Wearing Apparel and Leather Industries	
	Spinning, weaving and finishing textiles	3211
	Manufacture of made-up textile goods except wearing apparel	3212
	Cordage, rope and twine industries	3215
	Manufacture of wearing apparel except footwear	3220
	Tanneries and leather finishing	3231
	Manufacture of products of leather, except footwear and wearing apparel	3233
	Manufacture of footwear except plastic footwear	3240
3	Manufacture of Wood Products Including Furniture	
	Sawmills	3311
	Manufacture of furniture and fixtures, except primarily of metal or plastic	3320
4.	Manufacture of Paper and Paper Products, Printing and Publishing	
	Manufacture of paper	3411
	Manufacture of paper-board articles n.e.c.	3419
	Printing, publishing and allied industries	3420
5.	Manufacture of Chemicals and Plastic Products	

Manufacture of drugs and medicines	3522
Manufacture of soap and cleaning preparations cosmetics and other toilet preparations	3523
Manufacture of plastic products	3560
6. Manufacture of Non-Metallic Mineral Products, except Products of Petroleum	
Manufacture of pottery	3610
Manufacture of non-metallic mineral products, n.e.c.	
7. Manufacture of Fabricated Metal Products, Machinery and Equipment	
Manufacture of handtools and general hardware	3811
Manufacture of furniture and fixtures primarily of metal	3812
Manufacture of structural steel products	3813
Manufacture of machinery except electrical	3820
Manufacture of electrical machinery	3830
Assembly of bicycles	3844
8. Other Manufacturing Industries	3900
Manufacture of electric wire cables	
Manufacture of fish fliers/hooks	

APPENDIX 4: CORRELATION MATRIX FOR ALL INDUSTRIES I

	V01	V02	V03	V04	V06	V07	V08	V09	V11	V12	V13	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28
V01	1.00000																						
V02	.15209	1.00000																					
V03	.14363	.06674	1.00000																				
V04	-.01377	.18076	.13654	1.00000																			
V06	.34509	.08473	.33144	-.03927	1.00000																		
V07	-.15215	-.06461	-.02649	.24933	-.14940	1.00000																	
V08	-.16163	-.25255	-.15059	-.12851	-.23819	-.03326	1.00000																
V09	.37684	.05067	.09722	-.07736	.60183	-.07081	-.15712	1.00000															
V11	.15810	.04036	.28136	.09739	.16636	.08252	-.09337	.31964	1.00000														
V12	.00812	.03461	.12574	.22786	.01157	.10504	.02487	-.13407	-.12034	1.00000													
V13	.11288	.09625	.29303	.22466	.24501	.24931	-.15858	.22609	.25601	.06911	1.00000												
V17	.24466	.16510	.06025	.06511	.21039	-.01800	-.19837	.33217	.15797	.07840	.30234	1.00000											
V18	.12941	.22151	.27109	.13115	.23997	.05051	-.13503	.03943	.04365	.05167	.34396	.22308	1.00000										
V19	.17436	.11557	.38289	.01479	.21600	-.04047	-.12852	.26300	.27368	.10315	.29547	.24735	.33865	1.00000									
V20	.14389	.01186	.27095	.08924	.07679	.08355	-.07731	.03774	.04315	.24475	.28820	.27768	.37359	.30853	1.00000								
V21	.23085	.35118	-.03376	.10923	.22888	.02340	-.18062	.19299	.14843	.05641	.27068	.35004	.29629	.21172	.06344	1.00000							
V22	.29230	.07797	.02781	-.03243	.19930	-.20641	-.07901	.31155	.14298	-.08502	.14922	.17258	.17715	.20398	.25208	.16948	1.00000						
V23	.11220	.17861	.24719	.27953	.21799	.16412	-.18556	.07354	.16118	.19600	.42376	.34287	.61071	.41057	.30959	.34609	.11731	1.00000					
V24	.22266	.32678	.21329	-.01296	.41000	-.03629	-.25402	.38634	.24859	.09764	.39682	.45730	.40915	.40257	.12396	.45309	.10583	.60472	1.00000				
V25	.05243	.13519	.11248	.13604	.10231	.06724	-.05861	.09754	-.05184	.02292	.19093	.26148	.23638	.13756	.18934	.18318	.23703	.28917	.21406	1.00000			
V26	.01524	.11419	.17328	.15014	.02404	-.13761	-.03954	-.11401	.14371	.22248	.04156	-.10296	.01275	.01656	.23603	.05425	.10885	-.02312	.07194	.02052	1.00000		
V27	-.14710	.10462	.17347	.04421	.00764	.05593	-.03954	-.30897	-.11670	.10790	.13447	.03356	.45169	-.02563	.13340	.22331	-.15044	.36410	.21131	.03270	.10141	1.00000	
V28	-.09138	.13692	.07044	.12288	-.09256	.00409	.03684	-.25407	-.14961	.07919	.08905	.19677	.40588	.03084	.22023	.25232	-.04272	.28583	.20904	.18249	.27298	.41883	1.00000
V30	-.03913	-.02918	.04822	-.13792	.11601	-.17660	.02832	.14834	.19787	-.09383	-.00583	-.10450	.00052	.00938	.06505	-.04088	.01089	-.07202	.04428	.07283	.16139	.02774	-.01600

Source: Author's Fieldwork, 1988.

APPENDIX 5: EIGEN VALUES FOR ALL INDUSTRIES I

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
V01	1.00000	*	1	4.81825	20.1	20.1
V02	1.00000	*	2	2.65087	11.0	31.1
V03	1.00000	*	3	1.61623	6.7	37.9
V04	1.00000	*	4	1.57419	6.6	44.4
V06	1.00000	*	5	1.34583	5.6	50.0
V07	1.00000	*	6	1.29259	5.4	55.4
V08	1.00000	*	7	1.11931	4.7	60.1
V09	1.00000	*	8	1.03191	4.3	64.4
V11	1.00000	*	9	.95126	4.0	68.3
V12	1.00000	*	10	.86107	3.6	71.9
V13	1.00000	*	11	.78086	3.3	75.2
V17	1.00000	*	12	.71746	3.0	78.2
V18	1.00000	*	13	.67853	2.8	81.0
V19	1.00000	*	14	.62588	2.6	83.6
V20	1.00000	*	15	.61018	2.5	86.1
V21	1.00000	*	16	.55195	2.3	88.4
V22	1.00000	*	17	.51872	2.2	90.6
V23	1.00000	*	18	.50822	2.1	92.7
V24	1.00000	*	19	.41420	1.7	94.4
V25	1.00000	*	20	.34045	1.4	95.9
V26	1.00000	*	21	.30804	1.3	97.1
V27	1.00000	*	22	.25912	1.1	98.2
V28	1.00000	*	23	.24459	1.0	99.2
V30	1.00000	*	24	.18030	.8	100.0

Source: Author's Fieldwork, 1988.

APPENDIX 6: VARIMAX ROTATED MATRIX FOR ALL INDUSTRIES I

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8
V01	.36186	.31698	-.32995	-.28651	.16689	.10287	.15516	-.18002
V02	.37712	-.07967	.12664	-.05694	-.02392	.18407	.60978	.00212
V03	-.17623	.77295	.13332	.06980	-.00055	.19275	.15580	.09509
V04	.00952	.00073	-.00450	.57764	.06015	.38000	.35937	-.11761
V06	.28240	.61920	-.13098	-.26036	-.00002	-.12677	.24947	.06554
V07	-.01332	-.03987	.02228	.79545	-.05308	-.10086	-.05471	-.10907
V08	-.05256	-.22725	.03043	-.07262	-.12832	.07850	-.72448	.03451
V09	.45628	.39356	-.48810	-.11928	.13118	-.22998	.05590	.17613
V11	.29493	.31447	-.29975	.30030	-.10692	.11860	-.03550	.56896
V12	.06041	.16510	.10373	.11304	-.07171	.61630	-.11046	-.40450
V13	.33269	.40141	.09125	.47326	.18514	-.00096	.01436	.11947
V17	.64860	.12854	.00378	.07693	.29626	-.03990	-.02702	-.16079
V18	.26554	.39684	.60550	.06007	.27870	-.06455	.07606	-.02736
V19	.28199	.58976	.02535	.06890	.17908	.05536	-.11479	.01607
V20	.02618	.36598	.18992	.10326	.55835	.34435	-.22076	-.06461
V21	.75521	-.06234	.18008	.02729	.03342	.07386	.21344	.04277
V22	.21463	.09426	-.23349	-.21035	.67651	.06379	.00561	.08328
V23	.42981	.40823	.45551	.31745	.17408	-.01909	.06941	-.09221
V24	.69442	.38898	.23525	-.00269	-.01903	-.04296	.16030	.10086
V25	.07371	-.00515	.17350	.15706	.68673	-.12540	.30216	.04837
V26	-.04964	.01463	.08922	-.11504	.07660	.77518	.13194	.33771
V27	.05350	.10842	.81218	.00346	-.14665	.01542	.06879	.02465
V28	.22424	-.13662	.67643	-.02580	.15546	.31324	-.04221	-.01615
V30	-.08350	.05510	.06608	-.17767	.08063	.01406	-.04666	.76632

Source: Author's Fieldwork, 1988.

APPENDIX 7: EIGEN VALUES FOR FORMAL INDUSTRIES I

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
V01	1.00000	*	1	4.95512	21.5	21.5
V02	1.00000	*	2	2.87106	12.5	34.0
V03	1.00000	*	3	2.22463	9.7	43.7
V04	1.00000	*	4	2.03337	8.8	52.5
V06	1.00000	*	5	1.59084	6.9	59.5
V07	1.00000	*	6	1.35649	5.9	65.4
V08	1.00000	*	7	1.21535	5.3	70.6
V09	1.00000	*	8	1.10163	4.8	75.4
V11	1.00000	*	9	.93789	4.1	79.5
V12	1.00000	*	10	.75074	3.3	82.8
V13	1.00000	*	11	.71017	3.1	85.9
V17	1.00000	*	12	.64628	2.8	88.7
V18	1.00000	*	13	.56183	2.4	91.1
V19	1.00000	*	14	.49906	2.2	93.3
V20	1.00000	*	15	.39996	1.7	95.0
V21	1.00000	*	16	.33158	1.4	96.5
V22	1.00000	*	17	.21212	.9	97.4
V23	1.00000	*	18	.18560	.8	98.2
V24	1.00000	*	19	.13981	.6	98.8
V25	1.00000	*	20	.12758	.6	99.4
V26	1.00000	*	21	.07253	.3	99.7
V27	1.00000	*	22	.05833	.3	99.9
V30	1.00000	*	23	.01801	.1	100.0

Source: Author's Fieldwork, 1988

APPENDIX 8: VARIMAX ROTATED MATRIX FOR FORMAL INDUSTRIES I

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8
V01	.10698	.40053	.12632	-.17735	.54827	-.15964	.01445	-.27275
V02	.28173	.02337	.11682	.59577	-.13320	-.56021	-.20219	.01004
V03	.58448	.45253	.35577	.25891	.17398	-.15334	-.10617	-.20433
V04	.15053	.09931	.79952	.23019	-.12786	-.11989	-.04363	.19599
V06	.34503	.62076	.24664	-.22721	.29851	-.13061	-.17185	.20651
V07	.03683	-.17048	.71131	-.14308	-.56222	.05581	.02317	-.05053
V08	-.11378	-.14447	-.11034	.06937	-.15020	.86023	.00834	.14679
V09	-.09491	.79772	.08328	-.12966	.22699	-.17838	.07126	.18233
V11	-.28803	.36215	.07492	.53233	-.16472	.07717	.15446	-.42994
V12	-.07080	-.00169	.14122	-.00729	-.03751	.12004	.07033	.86622
V13	.11876	.10635	.58618	.01813	-.01959	.07455	.47590	-.03465
V17	-.00980	.77266	-.08202	.03824	-.01535	.14376	.04389	-.13996
V18	.82911	.17037	.10462	.06392	.14776	-.05748	.04154	-.16734
V19	.08872	.61842	-.01456	.11067	.04613	.15808	.34709	-.08197
V20	.52043	-.00808	.20268	.09893	.31402	.55599	-.31162	-.06092
V21	.14700	.15185	.15035	.03240	.15264	.01237	.78465	.07649
V22	-.04481	.11301	-.14895	.14415	.85260	.03489	.17235	.05852
V23	.42844	.16397	.66751	.05306	.12824	-.12149	.25339	.23242
V24	.25942	.47786	.10420	.48729	.07488	-.17404	.39211	-.01893
V25	.67917	.02252	-.08743	-.32665	-.13858	-.12706	.15265	.20353
V26	-.05262	-.17811	-.00234	.86073	.18097	.11129	.07103	.01973
V27	.73745	-.13389	.13442	.07911	-.14002	.01482	.17831	.01220
V30	.31999	.14110	-.58524	.42106	-.31240	.05253	-.08186	.18890

Source: Author's Fieldwork, 1988.

APPENDIX 9: EIGEN VALUES FOR INFORMAL INDUSTRIES I

Variable	Communality	*	Factor	Eigen Value	Pct of Var	Cum Pct
V01	1.00000	*	1	5.03324	21.0	21.0
V02	1.00000	*	2	2.64834	11.0	32.0
V03	1.00000	*	3	1.85136	7.7	39.7
V04	1.00000	*	4	1.67386	7.0	46.7
V05	1.00000	*	5	1.56340	6.5	53.2
V06	1.00000	*	6	1.26990	5.3	58.5
V07	1.00000	*	7	1.07557	4.5	63.0
V08	1.00000	*	8	1.01879	4.2	67.2
V09	1.00000	*	9	.97891	4.1	71.3
V11	1.00000	*	10	.86711	3.6	74.9
V12	1.00000	*	11	.75581	3.1	78.1
V13	1.00000	*	12	.69342	2.9	81.0
V17	1.00000	*	13	.64005	2.7	83.6
V18	1.00000	*	14	.58526	2.4	86.1
V19	1.00000	*	15	.53858	2.2	88.3
V20	1.00000	*	16	.50231	2.1	90.4
V21	1.00000	*	17	.45217	1.9	92.3
V22	1.00000	*	18	.40606	1.7	94.0
V23	1.00000	*	19	.34927	1.5	95.4
V24	1.00000	*	20	.30299	1.3	96.7
V25	1.00000	*	21	.25498	1.1	97.8
V26	1.00000	*	22	.23356	1.0	98.7
V27	1.00000	*	23	.18931	.8	99.5
V28	1.00000	*	24	.11575	.5	100.0

Source: Author's Fieldwork, 1988

APPENDIX 10: VARIMAX ROTATED MATRIX FOR INFORMAL INDUSTRIES I

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8
V01	-.16231	.50175	.07555	.26115	.41803	.20196	-.02331	-.26357
V02	.13396	.05640	-.01207	.10447	.76630	-.03738	-.20624	.09211
V03	.06369	.02327	.71488	-.03311	-.20072	.32669	-.21232	.12624
V04	-.08361	-.39578	.15153	.05270	.48212	.29768	.21090	.29141
V05	.01533	-.11245	.16335	-.07059	.05884	-.18235	-.80605	-.03542
V06	.07383	.79225	.20546	-.03893	-.02679	.14238	-.16160	.20820
V07	.02819	-.16114	.14620	.00350	-.04911	-.15583	.76426	.04058
V08	-.08125	-.16834	-.08889	-.07621	-.17781	-.07744	-.05533	-.68882
V09	-.21473	.77229	.16315	.25676	.03534	-.17131	.08166	.08204
V11	-.16657	.32639	.60127	-.01608	.07447	-.05129	.16720	.20576
V12	.17029	-.06074	.17719	-.16420	.22673	.64547	.20136	-.30300
V13	.32528	.21296	.50095	.25118	.01946	-.07994	.10656	.33320
V17	.38605	.43428	.03600	.34634	.27117	-.13995	.06945	.05064
V18	.72732	.05272	.26093	.20240	.08332	.00083	.01826	.01594
V19	.24650	.10673	.70147	.24225	.13243	-.01495	-.02756	-.23215
V20	.30737	.05299	.33902	.52072	-.13435	.35686	.09016	-.13082
V21	.37867	.35855	-.08630	.06772	.55523	.00675	.08822	.16883
V22	-.04615	.20035	.07181	.74769	.05373	-.03812	-.01353	-.04748
V23	.72142	.10138	.38799	.12862	.21041	-.06431	.20548	-.00986
V24	.55062	.54280	.23944	.02298	.30773	-.09841	.01507	.09979
V25	.12843	-.03485	.03209	.70225	.18293	.05063	.05933	.27915
V26	.03679	.00895	-.01513	.12464	-.06449	.83078	-.09535	.23942
V27	.74706	-.12476	-.06080	-.29599	-.06191	.11457	-.07811	.06425
V28	.68177	-.16563	-.20794	.14407	.05102	.26108	-.11031	.02910

Source: Author's Fieldwork, 1988.

APPENDIX 11: CORRELATION MATRIX FOR ALL INDUSTRIES II

	V09	V12	V13	V14	V16	V19	V23	V27	V33
V09	1.00000								
V12	.05447	1.00000							
V13	.06341	.27673	1.00000						
V14	.08853	.11040	.61123	1.00000					
V16	-.07479	.28575	.28579	.12517	1.00000				
V19	-.03182	.36174	.48126	.24761	.56117	1.00000			
V23	-.06035	.37425	.18153	.20178	.42015	.37108	1.00000		
V27	.03748	.17402	.39708	.22521	.21166	.35880	.08724	1.00000	
V33	.00911	.09223	.38914	.55290	.25996	.35021	.16349	.10188	1.00000

Source: Author's Fieldwork, 1988.

APPENDIX 12: EIGEN VALUES FOR ALL INDUSTRIES II

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
V09	1.00000	*	1	3.12850	34.8	34.8
V12	1.00000	*	2	1.39372	15.5	50.2
V13	1.00000	*	3	1.04547	11.6	61.9
V14	1.00000	*	4	.95070	10.6	72.4
V16	1.00000	*	5	.74081	8.2	80.7
V19	1.00000	*	6	.59926	6.7	87.3
V23	1.00000	*	7	.48515	5.4	92.7
V27	1.00000	*	8	.39596	4.4	97.1
V33	1.00000	*	9	.26042	2.9	100.0

Source: Author's Fieldwork, 1988

APPENDIX 13: VARIMAX ROTATION FOR ALL INDUSTRIES II

	FACTOR 1	FACTOR 2	FACTOR 3
V09	-.16524	-.01576	.79868
V12	.66594	-.04262	.30848
V13	.30846	.70913	.31829
V14	.03573	.86855	.13214
V16	.76002	.16801	-.10601
V19	.72279	.35152	.10259
V23	.71293	.07585	-.12263
V27	.31843	.25717	.48904
V33	.12239	.80210	-.14716

Source: Author's Fieldwork, 1988.

APPENDIX 14: EIGEN VALUES FOR FORMAL INDUSTRIES II

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
V12	1.00000	*	1	3.68544	36.9	36.9
V13	1.00000	*	2	1.34922	13.5	50.3
V14	1.00000	*	3	1.19182	11.9	62.3
V16	1.00000	*	4	1.05075	10.5	72.8
V17	1.00000	*	5	.79341	7.9	80.7
V19	1.00000	*	6	.63404	6.3	87.0
V22	1.00000	*	7	.50427	5.0	92.1
V23	1.00000	*	8	.43718	4.4	96.5
V27	1.00000	*	9	.27503	2.8	99.2
V34	1.00000	*	10	.07883	.8	100.0

Source: Author's Fieldwork, 1988

APPENDIX 15: VARIMAX ROTATED MATRIX FOR FORMAL INDUSTRIES II

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
V12	.27331	.77722	-.12199	.02704
V13	.75210	.17649	.43944	-.17738
V14	.90645	.12674	.15812	-.21382
V16	.01503	.72800	.02294	-.25345
V17	.02184	-.16358	-.30342	.74042
V19	.06544	.59219	.53933	.05021
V22	-.19955	-.05845	.14493	.79147
V23	.33854	.66112	.11348	-.11641
V27	.21899	-.06587	.90045	-.08565
V33	.84909	.27563	-.02428	.07354

Source: Author's Fieldwork, 1988.

APPENDIX 16: EIGEN VALUES FOR INFORMAL INDUSTRIES II

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
V08	1.00000	*	1	2.82108	28.2	28.2
V09	1.00000	*	2	1.54456	15.4	43.7
V12	1.00000	*	3	1.24671	12.5	56.1
V13	1.00000	*	4	.98681	9.9	66.0
V14	1.00000	*	5	.82359	8.2	74.2
V16	1.00000	*	6	.71525	7.2	81.4
V19	1.00000	*	7	.64739	6.5	87.9
V23	1.00000	*	8	.54467	5.4	93.3
V27	1.00000	*	9	.37935	3.8	97.1
V34	1.00000	*	10	.29060	2.9	100.0

Source: Author's Fieldwork, 1988

APPENDIX 17: VARIMAX ROTATED MATRIX FOR INFORMAL INDUSTRIES II

	FACTOR 1	FACTOR 2	FACTOR 3
V08	-.18802	.10280	-.62658
V09	-.42576	.15876	.48468
V12	.42904	-.08863	.53088
V13	.17248	.71601	.36335
V14	-.10638	.81102	.05104
V16	.76980	.19535	.09450
V19	.69833	.39648	.24648
V23	.69719	-.04898	.15400
V27	.12076	.19928	.61500
V33	.25556	.68403	-.29887

Source: Author's Fieldwork, 1988.

APPENDIX 18: AN INPUT-OUTPUT MODEL

Using Sectors (Inputs) / Producing Sectors (Outputs)	Intermediate Use Columns (1) Sector	(2) Sector	.....N Sector	Total Intermediate Production	Final Use (Demand) Columns: Private Consumption Investment	Government Consumption Investment Exports	Total Final Demand	Total Output (Sales)
1. Sector 1								
2. Sector 2			Outputs Produced for Intermediate Use	+	Outputs produced for Final Use		=	Total Output Sector 2
Rows		Inputs of Materials Purchased	Interindustry Transactions Quadrant (II)		Final Use Quadrant (I)			Total Output of Sector N
N. Sector N								
Total Intermediate Use		+						
Rows: Labour, Capital, Land, Natural resources		Primary Inputs Purchased and Used	Value Added Quadrant (Primary Inputs) (III)		Direct Factor Purchase Quadrant (IV)			
Value Added								
Total Inputs (Purchases)		Total Inputs Sector 2						Gross Output

Total Output of Sector i=Total Input of Sector i, where i=1,2, ...n.