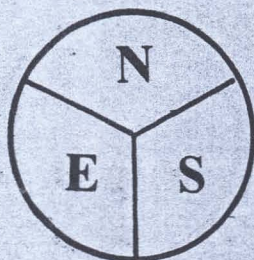


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INDUSTRIAL SUBCONTRACTING LINKAGES IN THE LAGOS REGION, NIGERIA

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ABSTRACT

This paper analyses the pattern of subcontracting linkages in the Lagos region within the contemporary held views of integration and industrial linkages. The paper shows that whether in terms of the number or volume, the spatial distribution of subcontracting varied markedly amongst the industrial estates/areas. Whereas subcontractors and subcontracting were found to be concentrated in just a few of the industrial estates/areas, subcontracting was identified in both intra- and inter-estates/areas. Considerable variation in production subcontracting linkages in terms of the number of flows became more complex in successive years.

JEL classification: L00, L33, R12

1. Introduction

INDUSTRIAL linkages continue to be a central theme in the literature on industrial geography. This is because contemporary thinking in industrial geography places a lot of emphasis on understanding the networks of inter-firm relationships (Christensen et al., 1990). It is argued that the choice of a network of relationships with its spatial pattern is germane to the strategic positioning of the firm (Yeung, 1994). This paper analyses production subcontracting, a major aspect of industrial linkages. Empirical evidence on the geographical foundation of subcontracting linkages at the regional level remains unclear. Indeed, Dicken and Lloyd (1990: 301) noted that 'geographers have tended to ignore collaborative ventures between firms, yet they are enormously important'. This paper therefore elaborates on this controversial issue within the Lagos region. The major concern pertains to the nature of the distribution of subcontractors, and the volume (calculated in monetary terms) of the items subcontracted. The nature of intra- and inter-estates/areas subcontracting flows is also analyzed.

The Lagos region covers metropolitan Lagos and the outlying districts of Agbara, Sango/Ota and Ojodu/Isheri industrial estates/areas, in neighbouring

Ogun State. This region, located along the southwest of Nigeria, is situated approximately between latitudes $6^{\circ}27'$ and $6^{\circ}37'$ North of the equator and longitudes $4^{\circ}15'$ and $3^{\circ}47'$ East of the Greenwich Meridian (see figure 1). The region, with an area of about 1,088km², covers about 32 per cent of the land area of Lagos State. About 20 per cent of this area is made up of lagoons and mangrove swamps. Apart from being the industrial nerve centre of Nigeria, the Lagos region is also the leading centre of commerce since some 60 to 70 per cent of all commercial transactions in Nigeria are carried out or finalized there. About 70 per cent of the total value of industrial investments in Nigeria is also in the Lagos region while over 65 per cent of the country's industrial employment is concentrated in this region (Ajayi, 1998; 2000; forthcoming).

2. Conceptual Framework

The relevant concepts are integration, industrial linkage, and production subcontracting. Integration involves all forms of collaborative and co-operative ventures among industrial organizations over space. There are two forms of integration, namely vertical and horizontal. Vertical integration is 'a process which refers to the extent to which successive stages in production and distribution are placed under a single firm shaped by internal economies of scope' (Lee, 1994: 292). This involves the amalgamation of productive units at different stages of production. By contrast, horizontal integration is a production system whereby 'firms producing related products (competitive, complementary or by-products) operate under central control' (Lee, 1994: 292). Here, the firm moves into activities that are very closely related to its current activities (Ajayi, 1998; 2000).

Linkage is possible over a wide range of distances. Strong or complex linkage ties, however, usually operate only over short distances. On a national scale, 'the systematic ties of a plant to others have locational significance. Plants located primarily in relation to raw materials or markets form a small proportion of total industrial activity. On the local scale, connections to adjacent or nearby plants do exist, but such connections do not account for the concentration of heavy industrial areas' (Wood, 1969: 34). The foregoing suggests that linkages reflect a distance decay function. Inter-industry linkage may be facilitated by the existence of relatively well-developed infrastructures, such as highways, railroad lines and termini, airports, utilities, commercial facilities, research organizations, etc. (Scott and Bergman, 1995).

Industrial linkage finds expression in growth centre strategy, one of the earliest strategies for regional development in many developing countries. The notion of a growth centre implies deliberately concentrated investments at chosen points (growth centres) that would reap scale and agglomeration economies (Hansen, 1972). In the long run, these centres have industrial activities that will be capable of rapid and self-sustaining growth and are therefore envisaged to

generate spread effects, thus promoting the growth of outlying districts. Whereas, Hirschman (1958) and Rostow (1963) stressed the importance of industries with strong backward (purchasing) linkages, Yotopoulos and Nugent (1973), and Weiss (1991) emphasized that manufacturing industries are important in regional development since they induce the growth of other linked industries through an increased demand for inputs. Where industries have strong forward (sales) linkages they will be twice as important in regional development because of their role as supporting industries (Norhaslina, 1999).

Production subcontracting is the arrangement of the production process wherein firms externalize their manufacturing activities to other independent firms. The contractor provides the orders and the subcontractor furnishes the work or services for the processing of materials, the production of parts/components or the subassembly or assembly of products according to the production specifications and the marketing arrangements of the contractor (UNIDO, 1974; Leung, 1993). Production subcontracting is thus a form of industrial linkage and a major aspect of the post-Fordist flexible specialization of production, and the emergent 'marked' spatial division of labour. Several post-Fordist writers (Storper and Scott, 1989, 1992; Gertler, 1994; Storper, 1992; Martinelli and Schoenberger 1991; Ernste and Meier 1992; Rowley, 1996) have given accounts of the emergence of flexible specialization of production .

3. Data Collection Procedure

Both primary and secondary data were required in this study. While primary data were collected from contracting firms, secondary data were collected from published sources. Since no publication on the location and operation of production subcontracting activities in the country is available, information on these had to be collected from relevant firms. The collection of data from the primary source was done in two different stages: a reconnaissance survey and the administration of questionnaires. The reconnaissance survey was carried out during the months of November and December 1995. It covered all the fifteen industrial estates/areas and outlying firms in the Lagos region. In each of the industrial estates/areas, all the industrial establishments were visited to determine whether or not they were involved in production subcontracting and to ensure that none of the industrial establishments was left uncovered during the survey. During the visits, personal interviews were held with the industrialists or their designated officers.

The result of the reconnaissance survey indicated that 68(10.7%) of the operating firms in the Lagos region were involved in production subcontracting (see Ajayi, 1998; 2000, 2001, forthcoming for details). Two of the estates (Gbagada and Yaba) had no contracting firms, while Ilupeju estate alone had 12 (representing 17.6% of the total). Ikeja/Ogba/Isheri industrial estate/area

accounted for 9(13.2%), while Oregun, Iganmu and Agbara estates/areas had 7(10.3%) firms each. Other industrial estates had numbers ranging from 1(1.5%) to 5(7.4%). All the sixty-eight contracting firms identified during the reconnaissance survey were covered in the questionnaire administration carried out from January to August 1996. The questionnaire sought information on such issues as the location (address/industrial estate/area) and activities relating to production subcontracting such as the location of subcontracting partners and the number and volume of items subcontracted over the years.

The Industrial Directory of Nigeria (1993 edition), published by the Manufacturers' Association of Nigeria (MAN), served as the basic source of secondary data. The 1993 edition was the most recent and up-to-date at the beginning of the fieldwork for the study. The directory contains a list of manufacturing establishments employing at least 10 workers. Other publications used to supplement the directory included: *Nigerian Vanguard Yellow Pages* (1991 edition), a publication of the Vanguard Newspapers, which is a directory of business enterprises in Nigeria; *Nigeria Yearbook* (1992 edition); and *Directory of Incorporated Companies* (1993 edition). Information pertaining to the name, location, and addresses of these firms were obtained from these sources. These sources of secondary data (publications) were the most recent and comprehensive editions available at the time of the fieldwork.

4. Analyses and Discussion

4.1 Spatial pattern of subcontracting linkages

The spatial distribution (number and volume) and the intra- and inter-estate/area linkages are analyzed. While proportional circles are used to depict the spatial distribution (number and volume), the flow diagrams are used to show the inter-estate/area links. The choice of these types of maps became necessary given the advantage of their visual clarity over and above other types of maps.

4.1.1 Spatial distribution (by number) of production subcontractors

The spatial distribution of production subcontractors from 1990 to 1994 indicates that the number of subcontractors varied markedly amongst the industrial estates/areas over the years. Subcontractors are concentrated in Ikeja/Ogba/Isheri, Ilupeju, Sango/Ota, Oshodi/Agege, Agbara and Isolo industrial estates/areas in that order. For instance, the number of subcontractors in Ikeja/Ogba/Isheri industrial estates/areas increased from 30 in 1990 to 35 in 1994. The corresponding figures for Ilupeju industrial estate/area are 19 in 1990 and 17 in 1994. Agbara industrial estate/area had 11 in 1990 and 14 in 1994. Sango/Ota industrial estate/area, which had 18 subcontractors in 1990, had 19 by 1994.

Iganmu industrial estate/area's share of production subcontractors increased from 8 in 1990 to 13 in 1994.

Ikorodu/Ojota industrial estate/area had no subcontractor in any of the years and Ijora industrial estate/area had 1 subcontractor representing only 0.7 per cent in 1994. Other industrial estates/areas had between 1 and 4 subcontractors in any of the years. For example, Oregon industrial estate/area, which had only 1 subcontractor in 1990, had 4 by 1994. Matori industrial estate/area had 2 subcontractors in 1990. The figure increased to 3 by 1994. Yaba industrial estate/area had 4 subcontractors in each of the years except in 1993 when it had 3 subcontractors. The situation in 1994 is depicted in figure 1.

4.1.2 *Spatial distribution (by volume) of production subcontracting*

The spatial distribution of the volume of production subcontracting amongst the industrial estates/areas from 1990 to 1994 shows that Ikeja/Ogba/Isheri, Ilupeju, Sango/Ota, Oshodi/Agege and Mushin/Surulere industrial estates/areas, in that order, have the largest concentration of production subcontracting in each of the years.

For instance, the volume of production subcontracting in Ikeja/Ogba/Isheri industrial estate/area was not less than 23 per cent of the total volume of subcontracting in the Lagos region. The volume of production subcontracting in Mushin/Surulere industrial estate/area was not less than 13 per cent of the total volume in any of the years. Matori industrial estate/area accounted for not more than one per cent of the total volume of production subcontracting in any of the years. The pattern in 1994 is shown in figure 2.

4.2 **Intra- and inter-estate/area subcontracting linkages**

There are both intra- and inter-estate/area subcontracting linkages within the Lagos region. These are discussed in turn.

4.2.1 *Intra-estate/area subcontracting*

The nature of intra-estate/area subcontracting within the Lagos region is shown in table 1. There are intra-estate/area subcontracting linkages in seven of the industrial estates/areas. These are Ikeja/Ogba/Isheri, Oshodi/Agege, Matori, Ilupeju, Iganmu, Sango/Ota, and Agbara industrial estates/areas.

Considerable variations in production subcontracting linkages also exist between industrial estates/areas in these linkages. Whereas, the relative share of Ikeja/Ogba/Isheri and Ilupeju industrial estates/areas is not less than 7 per cent, the share of the total volume of production subcontracting in any of the years.

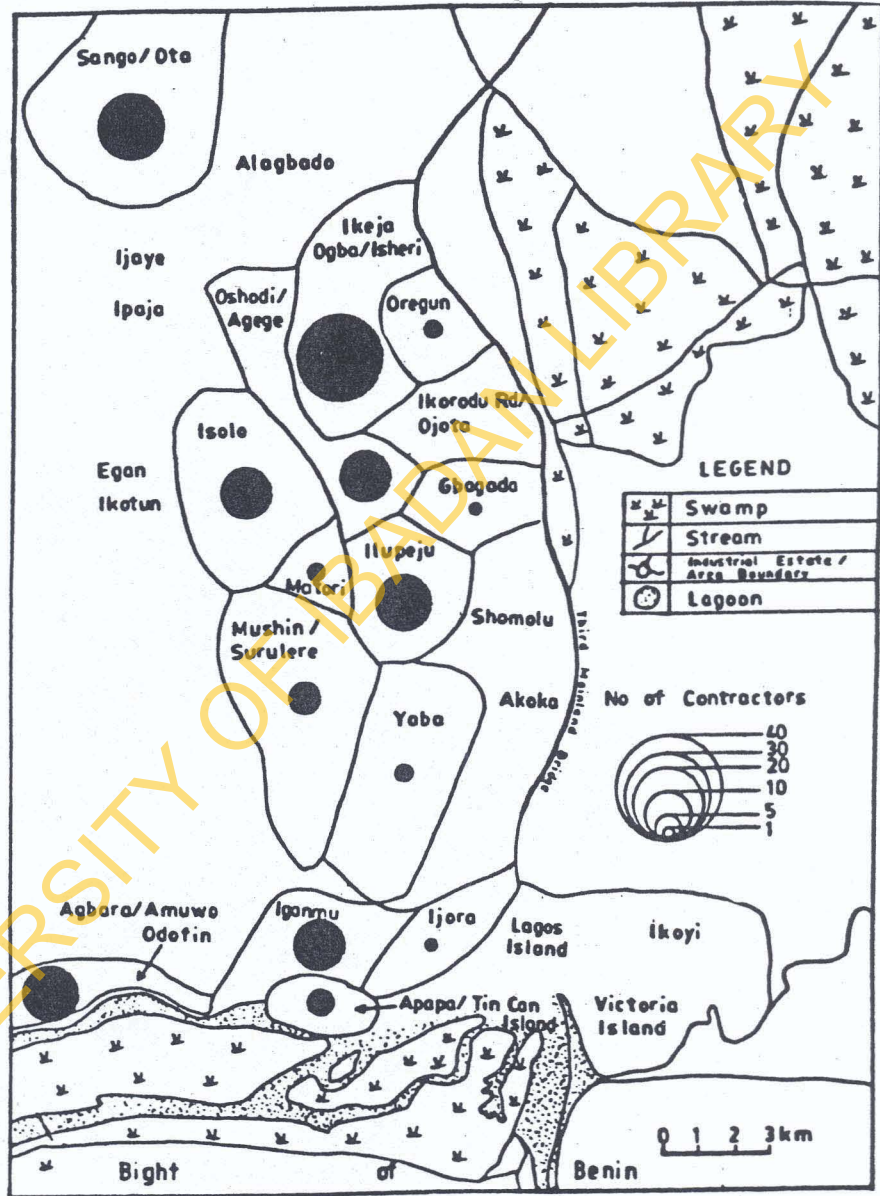


Figure 1. Spatial Distribution of Production Subcontractors in Lagos Region, 1990

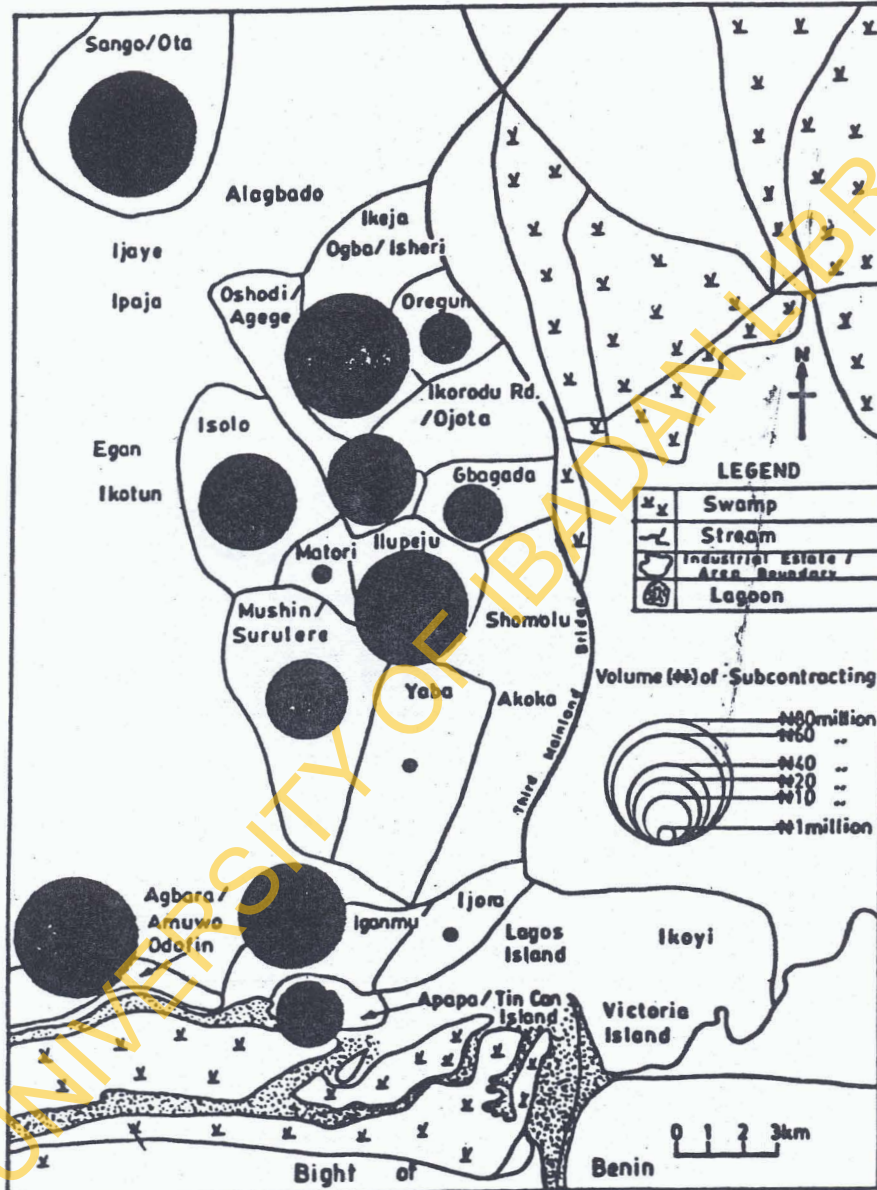


Figure 2. Spatial Distribution of the Volume of Production Subcontracting in the Lagos Region, 1994

Table 1. Intra-Estate/Area Subcontracting Linkages in the Lagos Region

S/No.	Industrial Estate/Area	Value (₦) of sub-contract 1990	(%)	Value (₦) of sub-contract 1991	(%)	Value (₦) of sub-contract 1992	(%)	Value (₦) of sub-contract 1993	(%)	Value (₦) of sub-contract 1994	(%)
1.	Ikeja/Ogba/Isheri	10,686,674	(8.40)	11,312,957	(7.57)	18,437,537	(7.01)	28,715,570	(8.04)	43,220,616	(8.20)
2.	Oregun	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)
3.	Gbagada	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)
4.	Ikorodu Rd/Ojota	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)
5.	Oshodi/ Agege	429,094	(0.34)	454,907	(0.30)	610,214	(0.23)	761,979	(0.21)	804,558	(0.15)
6.	Matori	7,628,336	(6.0)	727,851	(0.50)	1,220,428	(0.46)	4,094	(0.001)	1,709,686	(0.32)
7.	Isolo	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	41,565,493	(0.0)
8.	Ilupeju	9,714,686	(7.6)	11,508,238	(7.70)	22,054,153	(8.39)	29,508,920	(8.26)	-	(7.88)
9.	Mushin/ Surulere	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)
10.	Yaba	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)
11.	Ijora	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)
12.	Iganmu/ CBD	715,768	(0.56)	486,065	(0.33)	821,423	(0.31)	8,251,085	(2.31)	9,510,154	(1.80)
13.	Sango/Ota	3,086,577	(2.43)	3,203,637	(2.14)	4,245,056	(1.61)	5,425,293	(1.52)	6,637,606	(1.26)
14.	Agbara	133,496	(0.10)	142,841	(0.10)	1,628,254	(0.62)	408,421	(0.11)	5,601,737	(1.06)
15.	Apapa/Tin Can Is.	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)	-	(0.0)
	Total	32,394,631	(25.43)	27,836,496	(18.64)	49,017,065	(18.63)	73,075,362	(20.45)	109,049,850	(20.67)

4.2.2 *Inter-estates/areas subcontracting*

The nature of inter-estates/areas subcontracting linkages from 1990 to 1994 shows that the major flows were from Ikeja/Ogba/Isheri, Agbara and Isolo industrial estates/areas to Sango/Ota, Oregun Industrial estates/areas to Agbara, Iganmu industrial estates/areas. Others were from the Ilupeju industrial estate/area to Mushin/Surulere; Oshodi/Agege industrial estates/areas to Agbara; and Sango/Ota to Ilupeju industrial estate/area. The pattern of flow is most obvious in 1994 (see figures 3 and 4).

Inter-estate/area subcontracting linkages increased over the years. For instance, the flow from Ikeja/Ogba/Isheri to Sango/Ota increased from ₦3,623,460 in 1990 to ₦34,178,339 by 1994. The flow from Agbara industrial estate/area to Sango/Ota industrial estate/area, which was ₦2,669,918 in 1990, increased to ₦4,223,931 by 1994. Similarly, the flow from Mushin/Surulere industrial estate/area to Ilupeju industrial estate/area increased from ₦8,295,816 in 1990 to ₦25,303,359 by 1994. Subcontracting linkages from the Ikeja/Ogba/Isheri estate/area to the Apapa/Tin Can Island industrial estate/area increased from ₦2,574,564 in 1990 to ₦9,654,700 by 1994. While Apapa/Tin Can Island industrial estate received no subcontracting linkage from Isolo industrial estate/area in 1990, subcontracting linkages between these two estates/areas amounted to as much as ₦3,721,082 in 1994. Also, Ijora industrial estate/area, which had no subcontracting linkage from any industrial estate/area from 1990 to 1993, had a subcontracting linkage worth ₦111,773 from Ilupeju industrial estate/area in 1994.

Apart from the general increase in the volume of inter-estates subcontracting linkages, one other feature of subcontracting linkages within the Lagos region has been the increasing complexity of these linkages over the years. This complexity is explained in terms of the increase in the number of flows over the years. For instance, the number of industrial estates/areas that had subcontracting linkages with Ikeja/Ogba/Isheri industrial estate/area increased from 8 in 1990 to 11 by 1994, while the number of industrial estates/areas receiving subcontracting linkages from Ikeja/Ogba/Isheri industrial estate/area increased from 6 in 1990 to 7 by 1994. The number of estates/areas that had subcontracting linkages with Yaba industrial estate/area increased from 3 in 1990 to 4 by 1994. Iganmu industrial estate/area had subcontracting linkages from 5 other industrial estates/areas in 1990 and from 7 industrial estates/areas by 1994. Indeed, subcontracting linkages within the Lagos region became more complex in succeeding years.

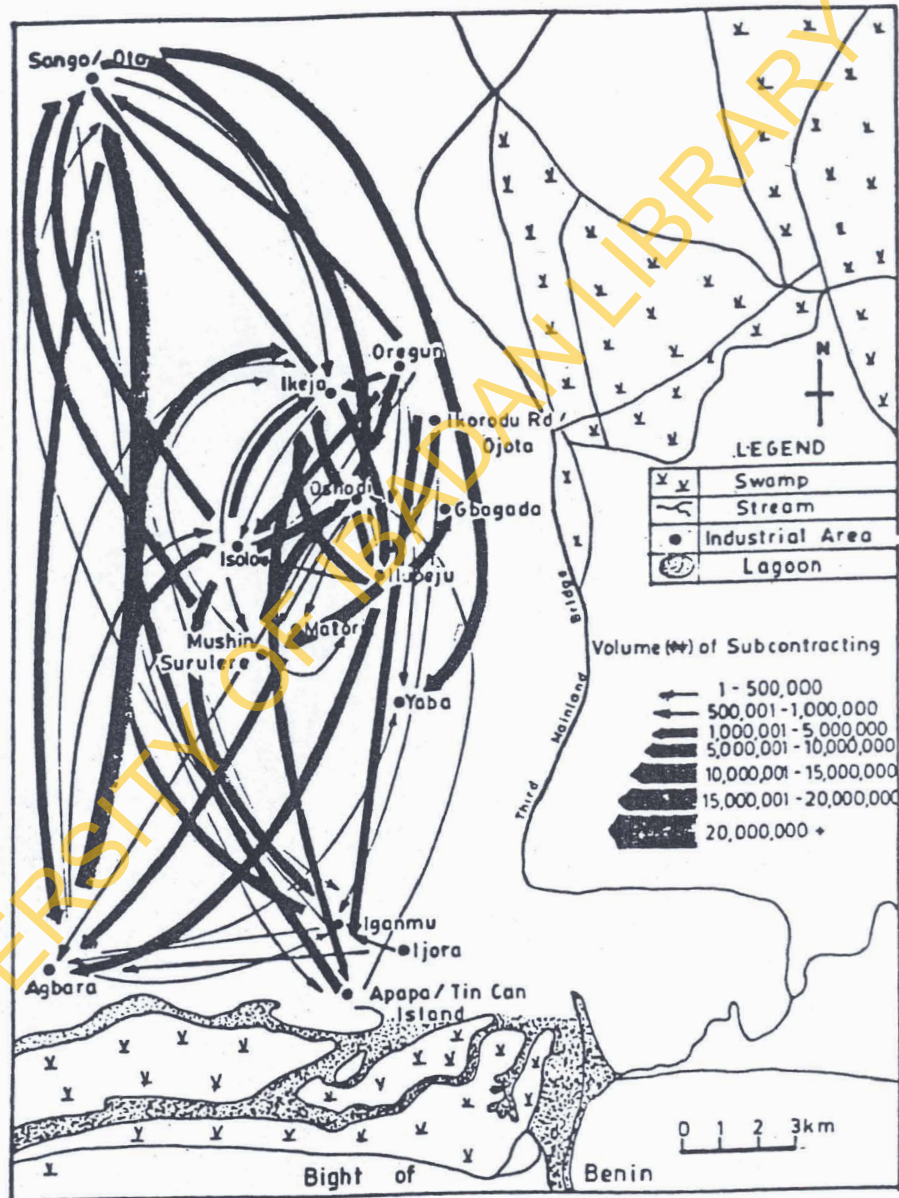


Figure 3. Inter-estates/areas Subcontracting Linkages in the Lagos Region, 1990

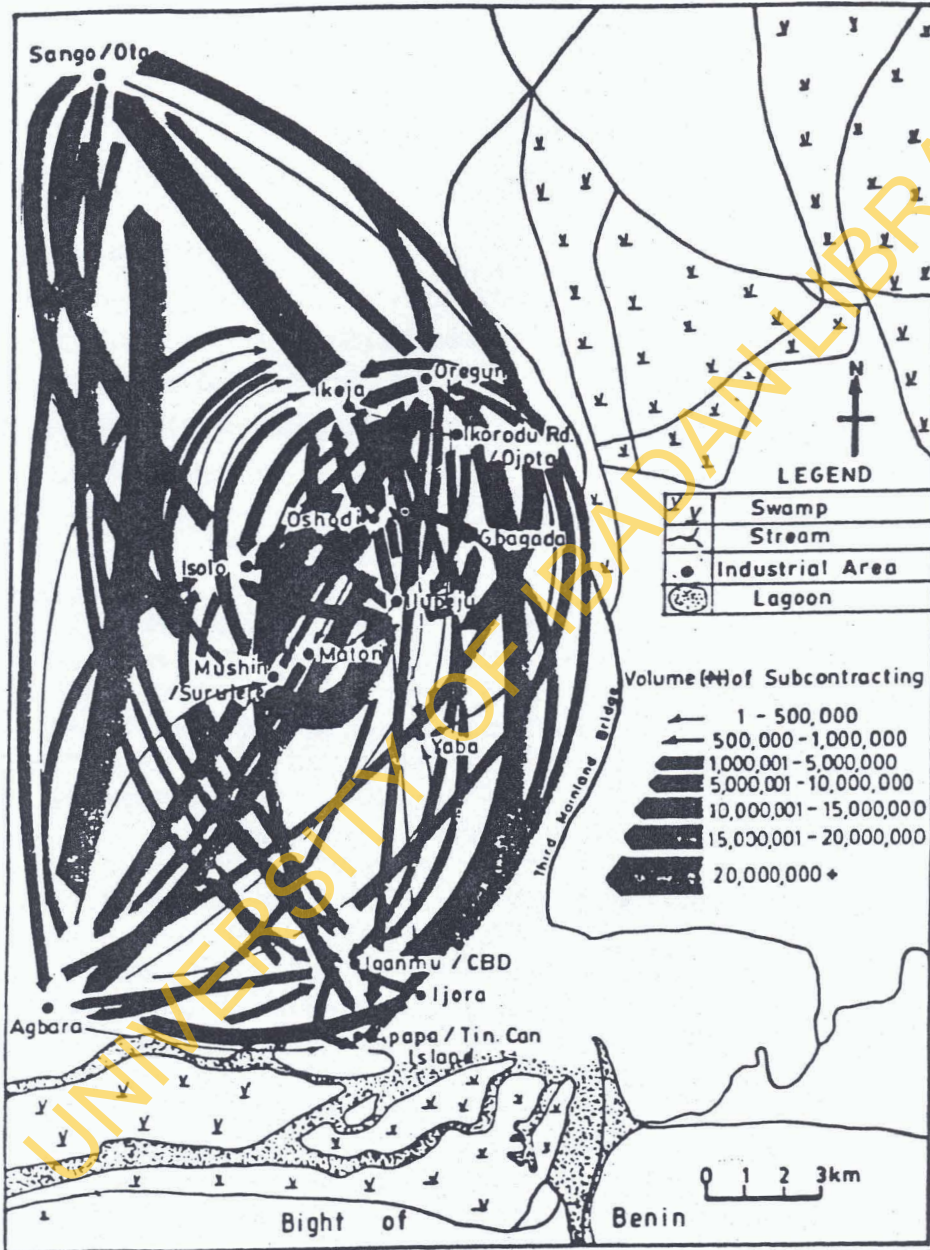


Figure 4. Inter-estates/areas Subcontracting Linkages in the Lagos Region, 1994

5. Summary

This paper has shown that both in terms of the number of subcontractors and volume, production subcontracting increased over the years. Intra-estate/area subcontracting was identified in seven of the industrial estates/areas. Inter-estates/areas subcontracting links grew and became more complex in successive years. The existence of these subcontracting linkages suggests that subcontracting could be encouraged to enhance the industrial development of this region especially if basic infrastructures are developed to further facilitate subcontracting links amongst the industrial establishments.

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