



The Changing Location of Service Activities in the Copenhagen Region

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Abstract

The location of services in the Copenhagen region is described and analyzed. Six types of services are distinguished:

Local private and public services, serving the daily needs of the population, e.g. retailing, have suburbanized, closely following the distribution of population, though with a time-lag. The same goes for services which serve more special needs, e.g. hospitals.

Among producer services, some remain in the centre of Copenhagen, e.g. lawyer firms, partly for historical reasons, partly to minimize costs of face-to-face contacts with business partners. But contrary to traditional theory, most producer services are suburbanizing, mainly in order to find large sites and to improve their accessibility for cars. Some have shifted to the western suburbs to reduce costs (back offices) or to be close to the traffic arteries which

connect Copenhagen with the rest of Denmark (wholesaling). Business services, e.g. engineering consultants, have primarily moved to the northern, amenity-rich suburbs, for reasons of prestige and of proximity to their high-status labour force. Still other services have located in a more hap-hazard way where they could find large areas, e.g. the airport and military establishments.

Keywords

Service location, Copenhagen, suburbanisation, proximity to customers, accessibility, land requirements.

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In most literature on the intra-urban location of service activities, it is assumed that they - or at least the producer services - are and remain highly concentrated in the city centre. The reasons given for this concentration are: First, in this way service firms can minimize their transaction costs - the costs of the many face-to-face meetings required to obtain (especially unprogrammed) information, and of selling and delivering services. And second, since the city centre is where accessibility for public transport is highest, firms located here can make best use of the large labour market and other externalities of large cities. Gottmann (1961) and Goddard & Morris (1976) are examples of the many authors presenting this argument. It is usually admitted that household services have gradually suburbanized, following the population they serve.

There are rather few empirical studies of the changing distribution of service activities inside large western city regions; far fewer than the number of studies on the location of manufacturing industries, though service activities typically provide about 80 % of the jobs.

On this background, the purpose of the present paper is

to describe recent changes in the intra-urban distribution of service activities in the Copenhagen region, and to discuss the forces behind the changes observed. The paper is primarily empirical: Statistical data on the location of jobs in various types of services are presented. They show that most types of service activities actually are decentralizing. For each subsector, explanations of these developments are discussed, drawing on Fich (1990), Maskell (1993), and the author's own work. However, since I have recently published a general discussion of the factors of intra-urban location of services, I refer the reader to this discussion and its references (chapter 11 in Illeris 1996). I shall only mention that the present empirical study indicates that the influence of historical factors should be emphasized more. As a conclusion, six types of services are defined, showing different locational processes.

It should be mentioned that in an inter-urban context, Copenhagen is the paramount centre of service activities in Denmark. Over the 1980s, a slight inter-urban decentralisation of service employment has taken place, primarily of household services (Illeris 1996).

The data

The area studied in this paper is the officially recognized "Capital Region", comprising the central municipalities of Copenhagen and Frederiksberg, as well as the counties of Copenhagen, Frederiksborg, and Roskilde. (Fig. 1). The central municipalities cover the area up to 5 kilometres from the city centre, while the whole region includes the area up to about 50 kilometres from the city centre and is more or less identical with the area from which there is substantial commuting into the city. While the area up to about 20 kilometres from the city centre is largely built-up, the peripheral parts of the region include both suburban areas, rural areas, and old provincial towns. Generally, the attractive landscapes in the northern part of the region are dominated by detached ownership housing and a well-to-do population, while the western part is characterized by multi-storey social housing and a less well-to-do population.

Comprehensive data on the distribution of jobs were first

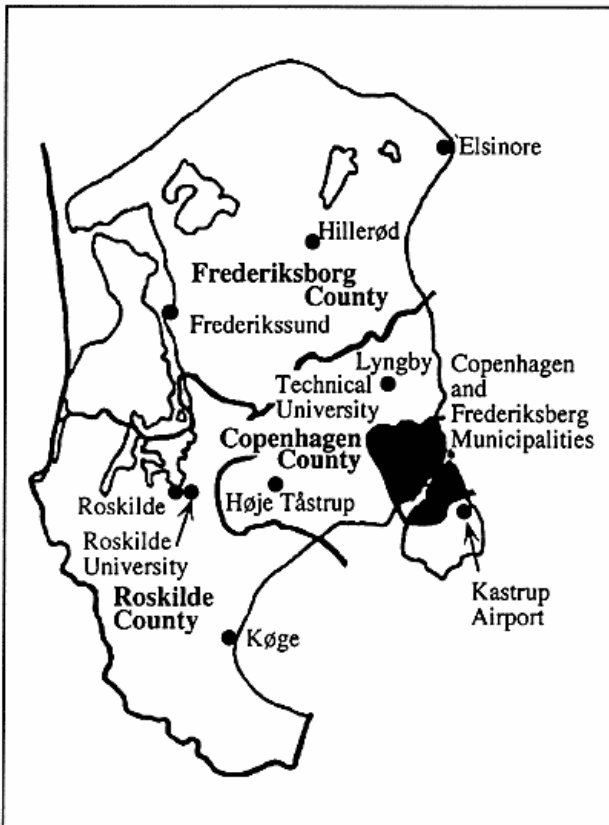


Figure 1: Overall map of the Copenhagen Region.

gathered at the 1970 census of population. This was a traditional census, where all households had to declare what persons were economically active, and in which municipality and which sector and branch they worked. Branches were classified according to the International Standard Industrial Classification (ISIC 58). For 10 % of the labour force, no place of work could be defined.

This was the last traditional census to be carried out in Denmark. From 1980, statistics on jobs have been based on the central registers of persons and firms. Annually, all firms - which are coded according to municipality, sector and branch - report on the persons they employ. Branches are - up to 1993 - classified according to ISIC 68. For 0.4 % of those employed (mainly transport workers) no place of work is defined. Workers whose place of work changes - e.g. construction workers - are referred to the office address of their firm, however. Undoubtedly, there are errors in these data, both as regards their geographical and their sectoral coding. Consequently, only crude conclusions can be drawn from them. Most errors, however, are repeated from year to year, which make cautious comparisons over time possible. In order to indicate the uncertainty, all data in this paper have been rounded to hundreds. The data refer to employment in November 1982 (the first of reasonable quality) and November 1992.

For reasons of different methods of data collection and classification, it is difficult to compare the 1970 census data to the later data from registers. In the following analysis, it will be mentioned for each subsector whether it is meaningful to make such comparisons, in the author's judgement. In most cases, only crude conclusions can be drawn.

As regards the service activities, a regrouping of data from all years into 11 subsectors will be applied, which has been developed by the European service research network RESER (1995b).

The overall location of jobs

Table 1 shows the main features of the changing number of jobs and their location in the central municipalities or the rest of the region. As already mentioned, there were more jobs with no defined place of work - and hence not included in the table - in 1970 than later. It should also be kept in mind that 1970 was in the middle of an economic boom, while both 1982 and 1992 were years of recession. The total number of jobs in the Copenhagen region undoubtedly increased in the 1970s, but in the 1980s the

Table 1: Distribution of all jobs, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|---------|
| 1970 (1) | 419,400 | 376,300 | 795,700 |
| 1982 | 408,700 | 526,600 | 935,300 |
| 1992 | 346,500 | 568,000 | 914,500 |

Note: Includes agriculture, construction, and utilities, which are not analyzed. (1) Not well comparable to 1982 and 1992 data.

Table 2: Distribution of manufacturing jobs, 1970 - 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|------|------------------------|----------------|---------|
| 1970 | 102,800 | 108,200 | 211,000 |
| 1982 | 52,400 | 89,500 | 141,900 |
| 1992 | 32,100 | 88,300 | 120,300 |

Table 3: Distribution of all service jobs, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|---------|
| 1970 (1) | 277,800 | 192,700 | 470,500 |
| 1982 | 337,700 | 382,600 | 720,300 |
| 1992 | 299,300 | 424,200 | 723,500 |

(1) Not well comparable to 1982 and 1992 data.

trend was declining. All through the period under consideration, a very clear shift took place from the central municipalities to the rest of the region. The central municipalities had well over half of the jobs in 1970, but only 38 % in 1992. How much did the various sectors contribute to this suburbanisation?

Manufacturing, Table 2

Already in 1970, manufacturing only provided 27 % of the region's jobs with a known place of work. Since then, de-industrialisation has been fast, and in 1992 only 13 % of the jobs were in manufacturing. Suburbanisation has been rapid in this sector. In the 1970s, it accounted for net all job losses in the central municipalities (see Table 1), and more. In the 1980s, however, the now insignificant manufacturing sector only accounted for one third of the net job losses in the central municipalities. The latter's share of the total manufacturing employment was 49 % in 1970 and 27 % in 1992.

The service sector as a whole

The interest must now be focussed on the service sector (Table 3) which in 1970 provided 59 % of the region's jobs with a known place of work, but in 1992 79 %. In absolute numbers, almost all the growth took place between 1970 and 1982.

The main conclusion is that the service sector has suburbanized rapidly. In 1970-82, its employment increased both in the central municipalities and in the rest of the region. But in 1982-92, the number of service jobs in the central municipalities declined. The latter's share of the region's total service employment was 59 % in 1970 and 41 % in 1992.

Figure 2 shows in detail the 1982-92 relative changes in total service employment. A decrease took place, not only in the central municipalities, but also in some of the inner suburbs. Moderate growth rates were observed in other inner suburbs, as well as in the old provincial towns of the

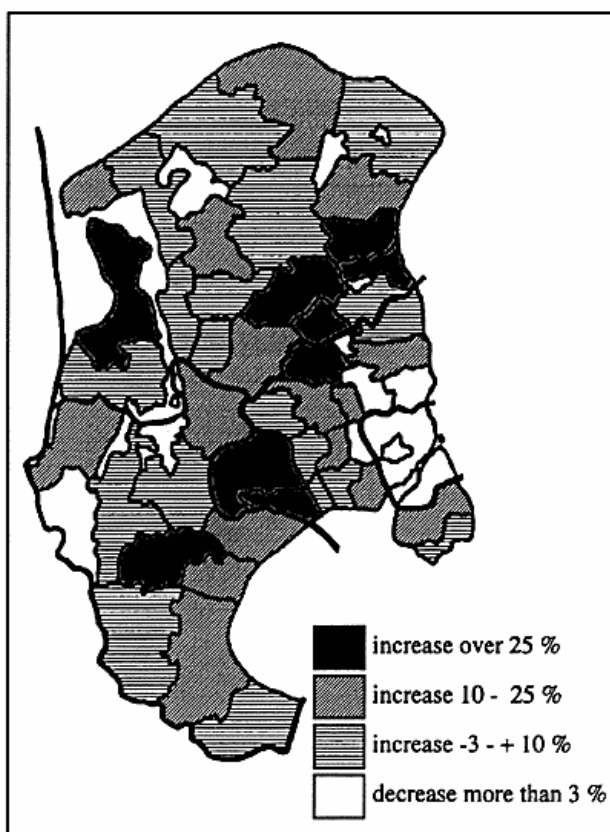


Figure 2: Changes in total service employment, by municipality, 1982-1992.

peripheral counties. In the outer suburbs and the more rural parts of the peripheral counties, growth rates were high.

In the following, the changes in the individual service subsectors and their causes will be analyzed.

Consumer services

Under this headline, retailing (over 60 % of the total subsector) is grouped together with a number of cultural and entertainment services, repair services, and personal services.

On the whole, the 1992 distribution of consumer services - as shown in Figure 3 - closely follows the distribution of population (though some entertainment branches show a much more concentrated pattern). Relative to the population, a number of rural municipalities in the peripheral counties had below-average employment in consumer ser-

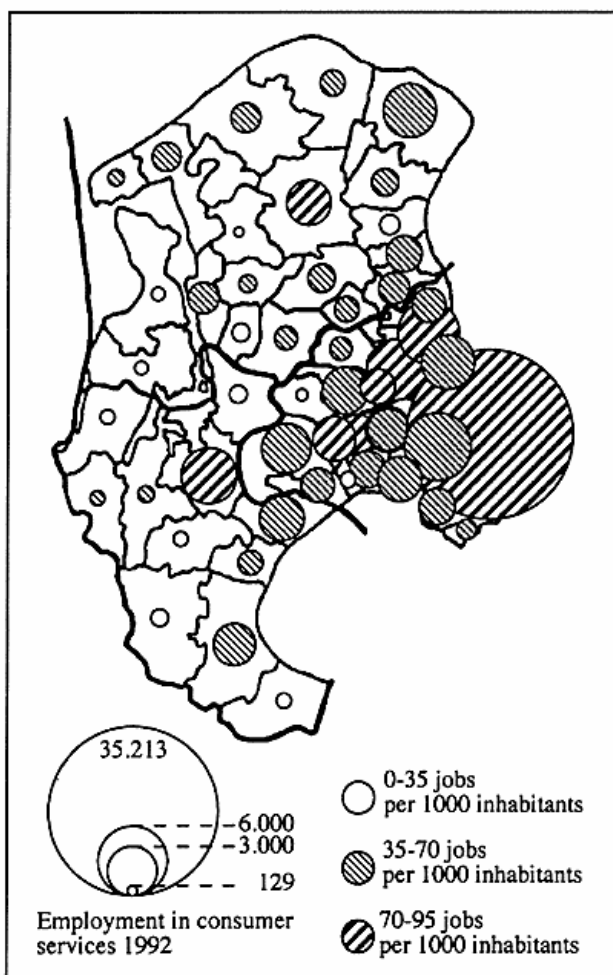


Figure 3: Employment in consumer services, by municipality, 1992.

Table 4: Distribution of jobs in consumer services, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|---------|
| 1970 (1) | 52,100 | 41,200 | 93,300 |
| 1982 | 48,100 | 69,200 | 117,300 |
| 1992 | 40,900 | 67,100 | 108,000 |

(1) Not well comparable to 1982 and 1992 data.

Table 5: Distribution of jobs in wholesaling, 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|------|------------------------|----------------|--------|
| 1982 | 28,100 | 46,900 | 75,000 |
| 1992 | 19,100 | 55,400 | 74,500 |

vices, however. On the other hand, consumer services were above-average in the municipality of Copenhagen, in some suburban municipalities well provided with shopping centres, and in some of the old provincial towns of the peripheral counties. Altogether, the correlation coefficient (r^2) between the distribution on municipalities of consumer service employment, and that of the population was as high as 0.994.

As indicated by Table 4, employment in this subsector probably increased in the 1970s, but has later decreased slowly, due to rationalisations. Employment in the subsector has suburbanized much more rapidly in the 1970s than in the 1980s: In 1970, 56 % was in the central municipalities, in 1982 41 %, and in 1992 38 %.

The decentralisation may be explained by a need to be close to the customers. However, there was a time-lag in the adaptation to the suburbanisation of population, which was rapid in the 1960s and early 70s, but later has slowed down (Illeris 1994). Thus the 1982-92 changes in the distribution of the subsector, by municipalities, show a much better correlation (0.353) with the 1972-82 changes in population than with the 1982-92 changes (0.068).

Wholesaling

In this subsector, the 1970 data are totally incomparable to the later data.

Employment in wholesaling seems to be rather stable. However, a rapid suburbanisation takes place, as shown by Tab. 5. While in 1982, the central municipalities had 37 %

Table 6: Distribution of jobs in hotels and restaurants, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|--------|
| 1970 (1) | 12,900 | 7,500 | 20,400 |
| 1982 | 10,500 | 8,700 | 19,200 |
| 1992 | 11,600 | 11,900 | 23,400 |

(1) Not well comparable to 1982 and 1992 data.

Table 7: Distribution of jobs in transport and communications, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|--------|
| 1970 (1) | 39,300 | 24,100 | 63,500 |
| 1982 | 45,700 | 34,500 | 80,200 |
| 1992 | 33,700 | 41,800 | 75,500 |

(1) Not well comparable to 1982 and 1992 data.

of the region's employment, in 1992 they only had 26 %. The suburbanisation has led to a very particular pattern of location, illustrated by Figure 4: In 1992, the western suburbs had over a third of the region's total wholesaling employment. Some employment was (still) found in the municipality of Copenhagen and a number of suburban municipalities, while the peripheral counties had very little wholesaling.

This subsector has been the subject of very few studies. However, while its general suburbanisation may be due to the need for sufficient space for storage etc, its increasing concentration in the western part of the region may be explained by a need for good accessibility for the transport of goods. In the case of Copenhagen, the main roads and railways between the city and the rest of Denmark have to pass through the western suburbs.

Hotels and restaurants, Table 6

In this subsector, the data are probably less reliable than elsewhere: Some employment goes unregistered.

Employment in hotels and restaurants increased in the 1980s, and probably in the 1970s, too. A relatively high share is found in the central municipalities, where tourism and entertainments are concentrated. However, there is a tendency towards suburbanisation: In 1970 63 % of the employment was in the central municipalities, but in 1992 only 49 %. Part of the explanation may be a growing pro-

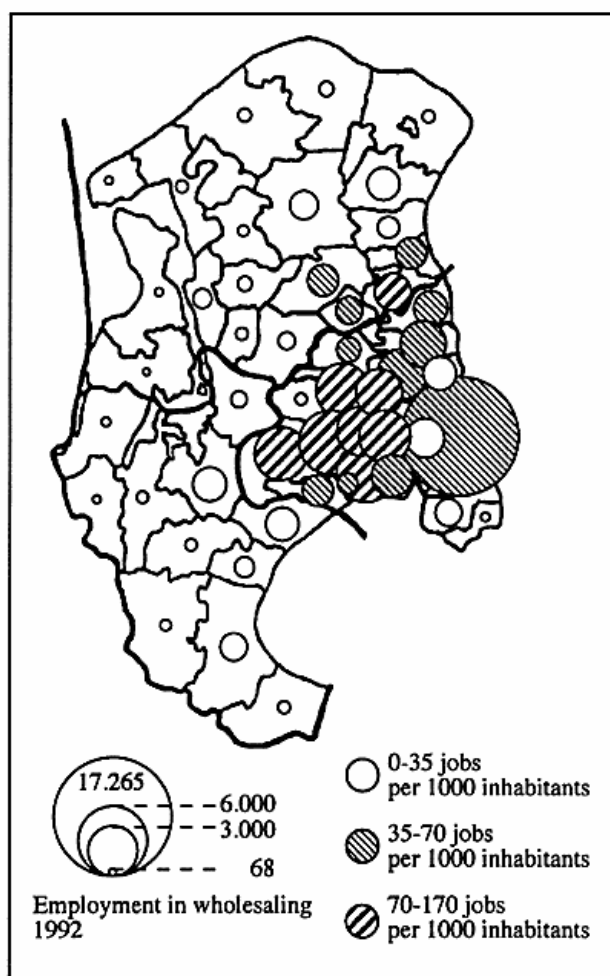


Figure 4: Employment in wholesaling, by municipality, 1992.

density for the suburban population to "eat out" in their local area. Another part is the growth connected with transport, in particular the catering business in Kastrup airport.

Transport and communications, Table 7

Employment increased in the 1970s, but declined in the 1980s in spite of growing "production". Especially in the telecommunications subsector, productivity increases were very rapid.

Much of the employment is registered at the main transport terminals and the administrative head-offices of the major transport and communication companies. Most of these have previously been located in the central municipalities, which had 62 % of the region's employment in 1970 (the only other concentrations being the airport at Kastrup and the ferry port at Elsinore). In the 1980s, how-

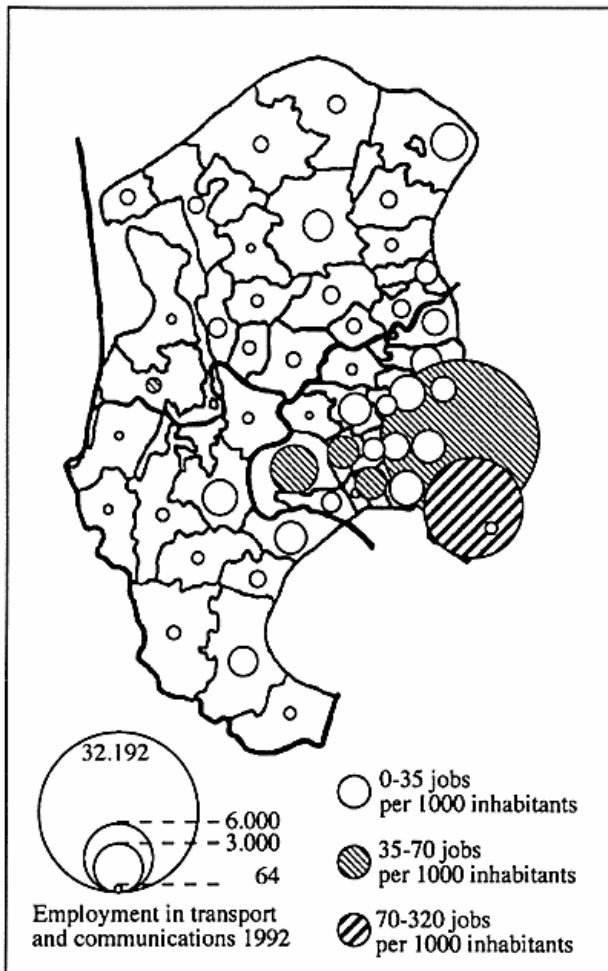


Figure 5: Employment in transport and communications, by municipality, 1992.

ever, suburbanisation has accelerated, and in 1992 only 45 % of the employment was registered in the central municipalities. Figure 5 shows the 1992 distribution of employment.

Next to the central municipalities, Kastrup airport is rapidly growing as a centre of transport employment. With 13,000 registered jobs in the transport sector and 2,000 in catering in 1992, it was the largest individual place of work in the region. A third centre, to which the telecom administration has relocated, is at Høje Tåstrup. Most other municipalities only have modest employment in this subsector, derived from trucking firms (especially in the western suburbs), train and bus stations, postal services etc.

Much of the employment in the central municipalities, connected with the port, the main railway station, and the

administrative offices, have historical explanations. The locations of the peripheral ferry terminal and airport have very special reasons. Only the telecom administration at Høje Tåstrup, conforming to a conscious planning effort to create a main centre which could relieve some of the congestion in the central city, can be explained by recent factors.

Financial services

Banks, insurance, and real estate firms are the most important components of this subsector.

Employment increased rapidly up to about 1990, due to increased business. The financial sector in Denmark was less hit by the crisis of the early 1990s than in some North European countries. But in the 1990s, it has rationalized and shed labour - a fact not shown by Table 8.

In 1970, the region's employment in this subsector was very concentrated (74 %) in the central municipalities where all head-offices were located. Since then, it has experienced an accelerating suburbanisation, and in 1992 only 53 % of the employment was in the central municipalities. While the head-offices of the banks have remained in the city centre, some insurance companies have moved to western and northern suburban locations, and the banks have placed "back offices" with computer services in various suburbs. Besides, suburban branch offices intended

Table 8: Distribution of jobs in financial services, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|--------|
| 1970 (1) | 25,300 | 8,800 | 34,100 |
| 1982 | 33,400 | 19,500 | 53,000 |
| 1992 | 31,800 | 28,600 | 60,300 |

(1) Not well comparable to the 1982 and 1992 data.

Table 9: Distribution of jobs in business services, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|--------|
| 1970 (1) | 20,200 | 11,200 | 31,400 |
| 1982 | 20,400 | 18,300 | 38,700 |
| 1992 | 26,900 | 32,900 | 59,700 |

(1) Not well comparable to the 1982 and 1992 data.

to serve the local population have proliferated, but their number and employment is now under reduction, partly due to mergers, partly to substitution by cash dispensing machines. Real estate employment has always been rather dispersed.

Traditionally, the central location of financial head-offices is explained by their need for frequent face-to-face contacts with business connections, as well as by prestige. While these factors remain valid to some degree, it seems that many functions do not need this proximity, and the need for cost minimisation has pulled "back offices" and insurance companies towards cheaper suburban premises, where a good supply of medium-skilled personnel is also available. The location of branch offices and real estate agents is explained by their need for proximity to the local markets.

Business services, Table 9

This subsector includes lawyer firms, accountants and auditors, consulting engineers and architects, computer service firms, advertising, management consultants etc.

As in all western countries, this subsector has had the most rapidly growing part of the economy over the last decades.

Employment has increased in all parts of the region, but a relative shift towards the suburbs has occurred: In 1970, 64 % of the region's employment was in the central municipalities, but this share had declined to 45 % in 1992.

However, the distribution patterns of the individual branches have developed in very different ways. As one extreme example, Figure 6 shows the location of employment in lawyer firms.

The lawyer firms are located in a very concentrated way: 75 % of the employment is found in the central municipalities (1992), down from 81 % in 1970. A few suburban municipalities and old provincial towns - hosting local courts of justice - can boast a lawyer employment which, relative to the population, is close to the regional average. The vast majority of municipalities have very few or no lawyers.

Figure 7 shows another extreme example, employment in the consulting engineers' and architects' firms. In this branch, 48 % of the 1970 employment was in the central municipalities. In 1992, the share was down to 33 %. Most of the suburbanisation had gone into the northern suburbs which in 1992 had roughly half of the region's employment. Relative to the population, the central municipalities

and some of the western suburbs had an average amount of employment in engineering consultancy. In the rest of the region, the branch was under-represented.

Computer services have decentralized rapidly, too. In this case, however, there is a dichotomy between, on the one hand, the large "back offices" making routinized data processing and in most cases located in the western suburbs - and on the other hand, the customized and skill-requiring computer and software services with a more rapid growth rate and a more northern pattern of location.

Traditionally, business services have been perceived as a very concentrated subsector, requiring the easy possibilities of face-to-face contacts and the prestige of the city centre. In the Copenhagen region, this still holds true for lawyer and advertising firms. However, according to such

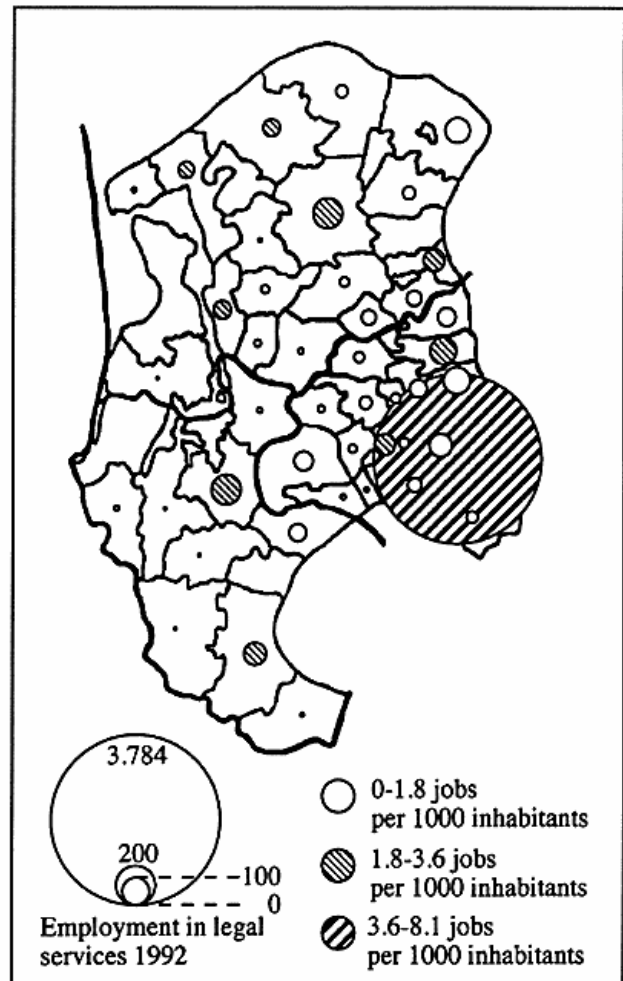


Figure 6: Employment in lawyer firms, by municipality, 1992.

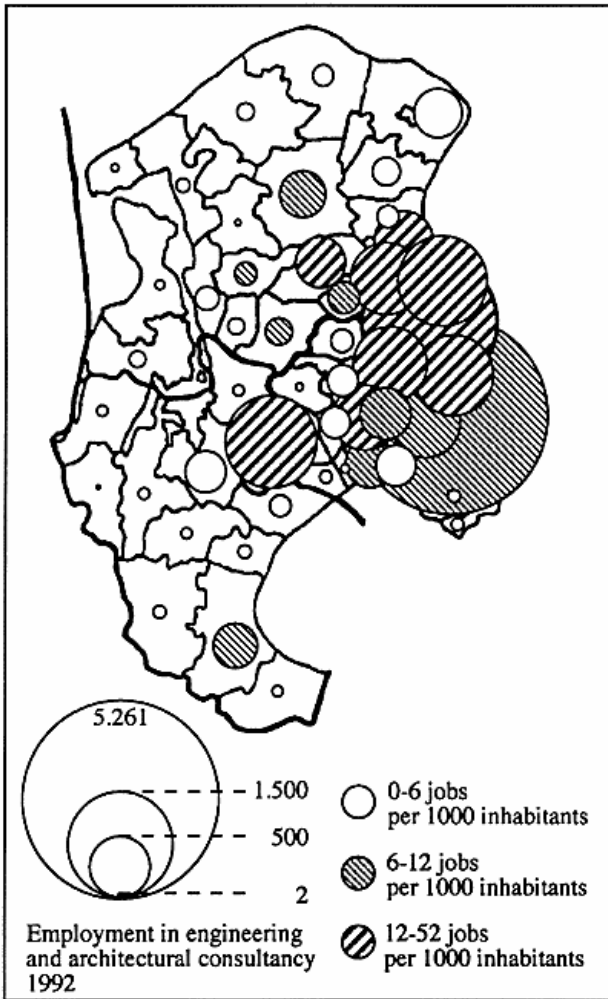


Figure 7: Employment in consulting engineers and architects, by municipality, 1992.

studies as Hessels (1992) in the Randstad Holland and RESER (1995a) in 6 large European cities, the decisive factors for most business services are the need for car accessibility for both clients and staff (which largely live in high-status suburbs), sufficient room for expansion, and prestige and amenities. In the case of Copenhagen, the first and the third of these factors clearly pull towards the northern suburbs.

On the other hand, some locational factors mentioned in the literature on business services seem only to be of secondary importance, according to the empirical studies. Thus today, proximity to clients is not very important in an intra-urban context: Most firms express that they serve clients equally well all over the urban region. A general

background factor enabling many business service firms to locate independently of their customers is the current development of information and communication technologies. - Proximity to an international airport is undoubtedly important in some city regions (London, Stockholm), especially for firms with many international business connections. But in the Copenhagen (and e.g. Paris) cases, this factor is not strong enough to prevail, when the airports are located in low-prestige areas, far from the residences of the staff.

Other producer services, Table 10

This is a small and heterogeneous subsector, including leasing firms, cleaning firms, etc. The 1970 data are not comparable to the later ones. Furthermore, some of the employment growth is due to externalisation of functions previously performed inside the customer firms. Finally, the principle of geographical registration of cleaning personnel has been changed. Therefore, the data will not be commented upon.

Public administration

This subsector includes national, regional and local government, police and courts of justice, defence, as well as the large interest organisations (unions, industrial organisations etc). It should be noticed that there is some unclarity

Table 10: Distribution of jobs in other producer services, 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|------|------------------------|----------------|--------|
| 1982 | 5,900 | 10,100 | 16,000 |
| 1992 | 6,100 | 12,200 | 18,300 |

Table 11: Distribution of jobs in public administration, (1970-) 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|----------|------------------------|----------------|---------|
| 1970 (1) | 38,800 | 18,500 | 57,300 |
| 1982 | 57,800 | 48,000 | 105,800 |
| 1992 | 49,900 | 41,500 | 91,400 |

(1) Not well comparable to 1982 and 1992 data.

Table 12: Distribution of jobs in education and research, 1970 - 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|------|------------------------|----------------|--------|
| 1970 | 18,900 | 22,100 | 41,000 |
| 1982 | 28,500 | 41,900 | 70,400 |
| 1992 | 26,900 | 41,800 | 68,600 |

regarding the classification of staff administrating health, social, and other public services. In 1982, more of this personnel has been classified as "administration" than in 1992. It should also be noticed that conscripted defence personnel in 1982 were registered according to their civilian home municipality, but in 1992 according to their military place of work.

Employment in this subsector increased rapidly in the 1970s, accompanying the growth of the public sector. The devolution of powers following the 1970 local government reform made employment growth in local and regional government especially vigorous. However, in the 1980s the subsector stagnated. As already mentioned, the impression of decline is exaggerated, but employment in national government and defence undoubtedly declined.

In the subsector as a whole, 68 % of the region's employment was in the central municipalities in 1970, down to 55 % in 1992. However, these data cover widely different branches. Employment in national government and interest organisations remains very concentrated: In 1992, 81 % and 85 %, respectively, was found in the central municipalities (the remaining employment being accounted for by local offices of the customs administration etc, and branch offices of the interest organisations). Employment in regional and local government is, naturally, much more decentralized: In 1992, 37 % was found in the central municipalities. Police and courts of justice have their head-offices in the central municipalities, but also a system of local branches. Defence employment is distributed in a very irregular way, according to the location of the main installations and barracks. The main tendency in defence has been a decentralisation, due to the closing down of the navy base and other installations in the centre of Copenhagen.

The concentration of national government, interest organisations, police head-offices and the high courts may be explained by historical causes, by prestige, and by the

need for easy face-to-face contacts. The distribution of regional and local government (as well as various branch offices) largely follow the distribution of population and may be explained by the need for proximity. The distribution of defence employment may be explained by very special reasons, the need for large training areas, for land suitable for air fields etc. It should be noted that the closing of the navy base in central Copenhagen is one of the very few examples where historically rooted premises representing heavy investments have been abandoned.

Education and research, Table 12

This sector includes primary, secondary and university education, a variety of vocational and other schools, as well as research institutes.

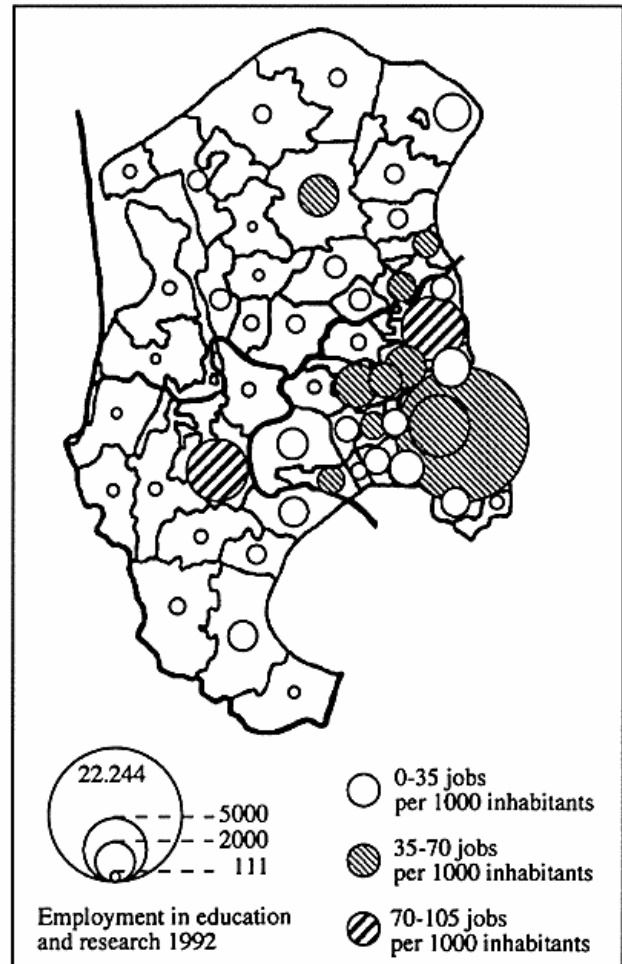


Figure 8: Employment in education and research, by municipality, 1992.

As in all western countries, employment in this subsector increased rapidly in the 1970s, but stagnated in the 1980s due to the decreasing number of young pupils and to stagnation in public budgets.

The central municipalities had 46 % of the region's employment in 1970 and 39 % in 1992: Some suburbanisation has taken place. Figure 8 shows that all municipalities had some employment in the subsector, connected with primary schools and - except in rural, peripheral municipalities - secondary schools. A limited number of municipalities - among them, the central municipalities - had an employment which, relative to the population, was somewhat larger. This was where research institutes, universities and many specialized schools were located. The relatively largest employment was observed in the municipalities housing Denmark's Technical University

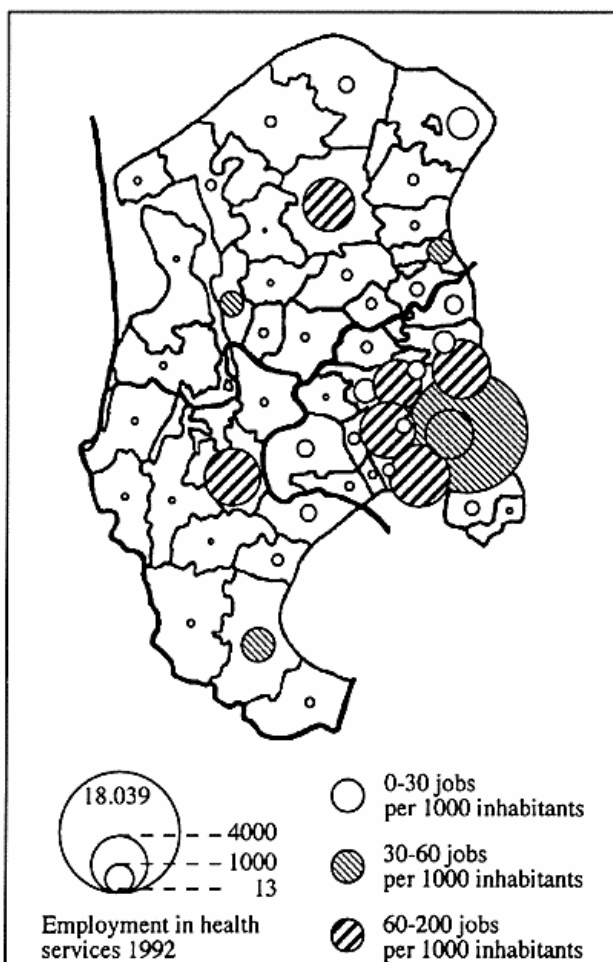


Figure 9: Employment in health services, by municipality, 1992.

Table 13: Distribution of jobs in health services, 1970 - 1982 - 1992.

| | Central municipalities | Rest of region | Total |
|------|------------------------|----------------|--------|
| 1970 | 25,700 | 19,600 | 45,300 |
| 1982 | 29,800 | 31,100 | 60,900 |
| 1992 | 21,000 | 33,600 | 54,700 |

(Lyngby) and Roskilde University.

The distribution of primary and secondary education - and some of the suburbanisation tendency - may largely be explained by the need to be close to the population. On the other hand, the location of universities, specialized schools, and research institutes have unsystematic, individual explanations. In some cases - including the new universities at Lyngby and Roskilde - the shift towards suburban locations is due to the need for large areas.

Health, Table 13

Most of the subsector's employment is to be found in public hospitals, which in the Danish system are large - with a personnel of typically 1,000 - 3,000 persons. As already mentioned, the 1982 numbers are undoubtedly too low, compared to the 1992 data, because more employees were registered under "administration". A minor part of the employment is found in the private practices of general practitioners, dentists, physiotherapists, etc.

As in all western countries, employment increased in the 1970s. But in the 1980s employment declined, because the hospital sector became the scapegoat of the high public sector expenditure. Some of the decrease, however, is due to externalisation of cleaning jobs etc.

Generally, a suburbanisation has occurred in health services: The central municipalities had 57 % of the region's employment in 1970 and 38 % in 1992. Figure 9 shows that most of the employment is located in the 12 municipalities which contain the large hospitals. But all municipalities have some employment, due to the dispersed location of various practices.

In broad lines, the distribution of the health services as well as their suburbanisation may be explained by the distribution of population. But the substantial land requirements of the large hospitals mean that their detailed location is more influenced by the (historical) availability of such areas than of the minimisation of distances to the population. Especially in the older suburbs, their location

Table 14: Distribution of jobs in social services, 1970 - 1982 - 1992.

| | <i>Central municipalities</i> | <i>Rest of region</i> | <i>Total</i> |
|-----------------|-------------------------------|-----------------------|--------------|
| <i>1970 (1)</i> | 11,000 | 15,500 | 26,400 |
| <i>1982</i> | 29,300 | 54,000 | 83,300 |
| <i>1992</i> | 31,500 | 57,400 | 88,900 |

(1) Not well comparable to 1982 and 1992 data.

is rather unsystematic, while in the peripheral part of the region, they are always found in the old provincial towns.

Social services

This subsector includes a variety of institutions for children, handicapped and elderly persons, as well as some ambulant services, helping clients in their own home.

As in all western countries, this subsector increased rapidly in the 1970s. It is the only large public subsector where the growth has continued - though at a slower rate - in the 1980s, especially due to strong political pressure for more childcare.

Most of the institutions are located close to the population who use them, and the 1992 distribution of employment by municipality has a very high coefficient of correlation with the distribution of population ($r^2=0.994$). The employment has followed the suburbanisation of population, too: In 1970, 42 % was in the central municipalities, and in 1992 35 %. The distribution of this subsector may largely be explained by the need to minimize distances to the users.

Conclusion

On the basis of the analysis of the various subsectors of service activities in the Copenhagen region, six types of services with different distribution patterns and development may be distinguished. The first two types primarily serve the households of the region:

1. Services which closely follow the distribution of population (though with a certain time-lag). Consumer services, local government administration, primary and secondary education, general practices and social services represent this type of services. Whether private or public services, their location is explained by the need to minimize distances to the customers. In other words, they represent the lower order central activities of the central

place theory (though the latter's propositions about agglomeration in centres do not always apply). Many of these services are found in all municipalities, roughly in proportion to their number of inhabitants - though in the rural, peripheral municipalities, some may be lacking. In the 1970s, they shifted rapidly from the central to the suburban and peripheral municipalities, following the suburbanisation of population in the 1960s and early 70s. In the 1980s, the decentralisation of these services decelerated, partly because few new jobs were created, and partly because the distribution of population stabilized. If this stabilisation continues, the distribution of these services may be expected to stabilize, too.

2. Services, which show a similar distribution and development, but in fewer municipalities and with larger distances to their customers: Hospitals, county administration, police stations and local courts of justice, some types of secondary education, bus stations, and specialized retailing and hypermarkets. Typically, such services are found in the central municipalities, in a few municipalities in the county of Copenhagen, and in some of the old provincial towns of the peripheral part of the region. They serve less frequent needs of the population and represent a higher level in the central place hierarchy.

Thus, service activities which serve households suburbanize - though at a decelerating rate - in order to remain close to their customers. But what about producer services which mainly serve firms and public institutions of the whole region, the whole country, or even international markets? Their location is not primarily determined by minimisation of distances to customers, and central place theory does not apply. Indeed, most of them serve customers all over the region and beyond, more or less independently of the customers' location. A variety of other factors influence the distribution of these service activities which may be classified into four locational types:

3. Services which are and remain highly concentrated in the centre of Copenhagen. The national government administration, the head-offices of the large interest organisations and banks, lawyer firms, advertising firms, hotels and theatres are now the best representatives of this type which previously included many more branches. The factors which determine their location are primarily the need for easy face-to-face contacts with business partners, the prestige, the historical environment, and the entertainments and tourist sights. Earlier, the high accessibility by public transport played a large role. For some of these services,

historical traditions coupled with locational inertia are very important.

The three remaining types of service activities are all characterized by suburbanisation trends. Most of these services were previously concentrated in the city centre for the above-mentioned reasons, but are now on their way out, primarily in search of better car accessibility - now more important than accessibility by public transport - and larger premises with better room for expansion. In contrast to the decentralizing household services, this process has not slowed down in the 1980s, but rather tended to accelerate.

4. Service activities which primarily shift towards the western, low-status suburbs. Examples are to be found among "back offices" performing routine data-processing or administration, and needing low-cost premises and medium-skilled labour. Some of these have been attracted to the planned "relief centre" at Høje Tåstrup.

Another example is wholesaling and some connected trucking, which in the special geographical configuration of the Copenhagen region are attracted by the main roads and railways both to the region and to the rest of the country.

5. Services which shift towards the northern high-status suburbs. This type is represented by consulting engineers and architects, high-skill computer and software services and other rapidly growing business services. For them, easy accessibility from the dwellings of their highly skilled personnel is an important factor of location, but prestige and amenity also play a role.

6. Services which show an unsystematic distribution. This type is represented by large transport terminals, defence establishments, prisons, new universities and research institutes, etc. Their location has often been determined by their need for large areas which are difficult to find, or other special factors. Once their location has been decided, these functions show a high degree of inertia - their fixed assets cannot easily be used by others.

Thus, in the case of Copenhagen, not only manufacturing industries and household services suburbanize in these decades, but also most producer services. The decentralisation of the latter tends to accelerate, and the importance of this observation is accentuated by the fact that employment in producer services grows at high rates. Given the suburbanisation which is currently observed in many city regions (Illeris 1996, Colard & Vandermotten 1996), there is a need for more research on the factors which may explain the empirical observations, such as those suggested in connection with the types 4, 5, and 6.

References

References

- Colard, A. & Vandermotten, C. (1996):* La périurbanisation de l'emploi dans les zones métropolitaines belges. *Revue Belge de Géographie*, 120, p. 33-40.
- Fich, C. (1990):* Erhvervsservice i større byer. Lyngby: Institut for Veje, Trafik og Byplan.
- Goddard, J.B. & Morris, D. (1976):* The Communication Factor in Office Decentralization. *Progress in Planning*, 6, p. 1-80.
- Gottmann, J. (1961):* Megalopolis: The Urbanized Northeastern Seaboard of the United States. New York: Twentieth Century Fund.
- Hessels, M. (1992):* Locational Dynamics of Business Services: An Intrametropolitan Study on the Randstad Holland. Utrecht: Geografisch Instituut Rijksuniversiteit Utrecht.
- Illeris, S. (1994):* Why was the Central City Population Stabilized? The Case of Copenhagen. P. 595-608 in: G.O.Braun (ed), *Managing and Marketing of Urban Development and Urban Life*. Berlin: Dietrich Reimer Verlag/Abhandlung Anthropogeographie 52, Institut für Geographische Wissenschaften, Freie Universität.
- Illeris, S. (1996):* The Service Economy: A Geographical Approach. Chichester: J.Wiley & Sons.
- Maskell, P. (1993):* Liberale erhverv i Hovedstadsregionen og deres betydning for ejendomsmarkedet. Frederiksberg: Samfundslitteratur.
- RESER (1995a):* Consultancy Services Networks in Europe. Aix-en-Provence: Serdeco.
- RESER (1995b):* Services et métropoles: Formes urbaines et changement économique. Aix-en-Provence.

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References

- Colard, A. & Vandermotten, C. (1996):* La périurbanisation de l'emploi dans les zones métropolitaines belges. *Revue Belge de Géographie*, 120, p. 33-40.
- Fich, C. (1990):* Erhvervsservice i større byer. Lyngby: Institut for Veje, Trafik og Byplan.
- Goddard, J.B. & Morris, D. (1976):* The Communication Factor in Office Decentralization. *Progress in Planning*, 6, p. 1-80.
- Gottmann, J. (1961):* Megalopolis: The Urbanized Northeastern Seaboard of the United States. New York: Twentieth Century Fund.
- Hessels, M. (1992):* Locational Dynamics of Business Services: An Intrametropolitan Study on the Randstad Holland. Utrecht: Geografisch Instituut Rijksuniversiteit Utrecht.
- Illeris, S. (1994):* Why was the Central City Population Stabilized? The Case of Copenhagen. P. 595-608 in: G.O.Braun (ed), *Managing and Marketing of Urban Development and Urban Life*. Berlin: Dietrich Reimer Verlag/Abhandlung Anthropogeographie 52, Institut für Geographische Wissenschaften, Freie Universität.
- Illeris, S. (1996):* The Service Economy: A Geographical Approach. Chichester: J.Wiley & Sons.
- Maskell, P. (1993):* Liberale erhverv i Hovedstadsregionen og deres betydning for ejendomsmarkedet. Frederiksberg: Samfundslitteratur.
- RESER (1995a):* Consultancy Services Networks in Europe. Aix-en-Provence: Serdeco.
- RESER (1995b):* Services et métropoles: Formes urbaines et changement économique. Aix-en-Provence.