THE SETTLEMENT PATTERN OF CLOTH MERCHANTS, DRAPERS AND WEAVERS IN THE TEXTILE CITY OF LEIDEN, 1498-1748

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▲ 1. Isaac Claesz. van Swanenburg, *De Leidse Stedenmaagd met de Oude en de Nieuwe Neringhe* [Maid of Leiden with Old and New Cloth Industries], 1596-1601 (Museum De Lakenhal, Leiden)

LEIDEN AS A CENTRE OF THE TEXTILE INDUSTRY

The textile industry has played an important role in Leiden from its earliest days. It is estimated that in the Early Modern period a good two-thirds of the working population was active in this industry.[1] Whereas in Leiderdorp the weaving, fulling and other steps in the process of turning wool into cloth might be undertaken by the same textile worker,[2] in nearby Leiden the idea of such a production process being in the hands of a single worker was unthinkable. In Leiden, although cloth production was organized as a cottage industry, there was a high degree of specialization: weaving was done by weavers and fulling by fullers. The semi-finished and finished products were then subjected to a strict quality control regime.[3] The inspections took place outside the workplaces in the so-called halls.

The textile industry in Leiden before circa 1580 is referred to as the 'oude draperie' (old drapery), thereafter as the 'nieuwe draperie' (new drapery). A hallmark of the 'new' cloth industry was that it was not confined to wool alone, but included wool in combination with linen, cotton and silk.[4]

Research has shown that the distinction between the old and new cloth industry may have been less clear-cut than has been suggested.[5] All the same, the transition was celebrated as a glorious moment in Leiden's history, as depicted in the painting *De Leidse stedemaagd met de oude en nieuwe neringhe* (1596-1601) by Isaac Claesz van Swanenburg (1537-1614), (fig. 1).

The expansion of production was prompted by the influx of hundreds, if not thousands of religious refugees from the (Catholic) Southern Netherlands. For Leiden, this turnabout spelled the end of a long recession and the beginning of an upsurge in economic and demographic growth. The finished product changed as well: serge, a collective term for different types of lighter fabrics with a more flexible feel than the heavier 'old' Leiden cloth, rapidly became the most sought-after product.[6]

The Leiden cloth industry has been exhaustively researched. The over 1200-page *Geschiedenis van de Leidsche lakenindustrie* and the accompanying six volumes of sources by N.W. Posthumus are a veritable gold mine.[7] As the historian Leo Noordegraaf once put it, 'It's all in Posthumus'.[8] But there was one area that Posthumus did not explore: whether textile workers in the old and new clothing industry were geographically clustered according to trade. Additional research based on street names does not get us very far, however. Most European cities have street names suggesting the one-time existence of an occupational cluster, such as Vollersgracht (Fullers' Canal), Plotersgracht (Ploters' Canal) or Witteleertouwerstraat (White Leather Dressers' Street) but relying solely on those designations proves to be misleading. For example, Vollersgracht in Leiden retained that name well into the seventeenth century, yet there were scarcely any fullers still living there as early as 1498.[9] As we know from other cities as well, street names were static and at a certain point ceased to reflect socio-economic reality.

How then should research into and interpretation of the clustering of craftspeople be structured? Before introducing my own research into the settlement patterns of textile occupations in Leiden, I would first like to consider international research into the settlement of occupational groups in various European cities.

INTERNATIONAL RESEARCH INTO SETTLEMENT PATTERNS

While the spatial distribution of wealth in the city has been investigated on more than one occasion in the past, the study of the spatial distribution of occupations has received less attention.[10] That is curious because the historical literature frequently refers to the fact that the medieval city was characterized by strong occupational clustering.[11] But although the subject has received less attention, that does not mean that no great strides have been made. In particular I would like to mention here studies of Norwich, Antwerp, London, Bologna and Strasbourg. Research into the clustering of practitioners of certain occupations usually consists of two parts: an inventory of presence and clustering of occupations in certain areas, and an attempt to account for this phenomenon. Let us begin with clustering as such.

Carole Rawcliffe published her study of Norwich in her highly acclaimed book *Urban Bodies*.[12] In it she recounts how medieval city authorities developed initiatives aimed at keeping the urban populace healthy. She is one of the few researchers to have depicted her findings in a street map where, in addition to waterways and important markets and buildings, occupational clusters are also indicated. It should, however, be noted that it is not entirely clear which historical sources underpin this cartographic 'occupational topography'.

In his study of Antwerp Tim Bisschops uncovered clusters of ten different occupations around the year 1400 (1395-1404) using publicly accessible conveyancing records.[13] The localization of two hundred practitioners of ten occupations is an achievement in itself, but given that Antwerp had just 20,000 inhabitants at that point in time, the sample is small.[14] As yet, no comparison over time has been made.

Justin Colson investigated occupational clustering in London for the period 1400 to 1550, based on references to occupations in wills.[15] That source has several drawbacks (as do property and taxation records for that matter). One is that for all London, which probably had 40,000 inhabitants in 1500, there are only forty localizable references to occupation. The author solves this shortcoming with sliding, forty-year samples.[16] The '1400' sample covers data from the period 1380 to 1420, the '1550' sample data from the period 1530 to 1570. That stratagem increases the sample size considerably, but even so the numbers per occupational group remain small.[17]

Turning to the explanations for the clustering, we find that although this aspect is covered by Rawcliffe for Norwich, it receives less attention in the studies by Bisschops (Antwerp) and Colson (London). The pattern that Rawcliffe maps can be characterized as 'smellscape management', the avoidance of odour nuisance and pollution by assigning settlement zones to various industries. Dyers and tanners were clustered along the river downstream of the town centre so that their waste products immediately left the city precincts. In addition, smelly occupations were located in the north-eastern corner of the city so that the prevailing south-westerly wind blew their noxious fumes away from the city.[18] Bisschops does mention that fullers and dyers were located close to the river, but it is left

to the reader to work out whether that was downstream or upstream and based on some form of smellscape management.

Colson sees certain agglomeration benefits offered by the co-location of the same occupations. However, he only suggests an underlying natural advantage relating to location in the case of mercers: dealers in luxury, often silk, fabrics. In the first half of the fifteenth century they were mainly located in the vicinity of the Mercers' Hall. Colson rightly points out that proximity to the hall might not have been the only motivating factor. As such, this single example does not offer proof that the house–hall distance played a decisive role.

More indications in that direction are furnished by a study by Colin Arnaud. For the cities of Bologna (1385) and Strasbourg (1427 and 1466), two medium-sized cities comparable in population to Antwerp (25,000 and 18,000 inhabitants respectively), he compared the distribution of occupations with the location of markets and other topographical features.[19] He concluded that in Bologna the residence of workers who didn't work from home was mainly influenced by financial means, whereas in Strasbourg occupational considerations were paramount. In this context, Arnaud points to the residential location of transport workers: carriers usually lived near the Corn Market where there was an abundance of work, and watermen along the river where the barges were moored.[20] Looking at the location maps this seems highly likely, but here too the number of localized occupations is small. Historically-minded readers will also notice the lack of background information about the activities of transport workers.

The above-mentioned publications, with their individual merits and shortcomings, helped me to design my research into the settlement patterns of textile workers in Leiden.

THE TEXTILE INDUSTRY IN LEIDEN: THE STUDY DESIGN

My aim in what follows is to substantiate the thesis that a clustering of textile occupations occurred in certain areas of Leiden and that the location of the halls where fabrics were inspected was a critical factor in determining where textile workers chose to live.[21] The hall played a central role in the production process: dealers, inspectors and textile workers all put in an appearance here at set times, with or without a semi-finished or finished product under their arm. Assuming that people usually moved around the city on foot, it seems logical that textile workers would opt for a short distance between their residence and the cloth hall (house–hall distance).[22]

Theoretically, the relationship between home workshop and hall might also have come about the other way around, with inspection halls being established in neighbourhoods where there was already a lot of textile production. However, later on in my argument we will see that there was a preference for using existing buildings and that when the construction of a new hall was contemplated, the availability of (large) plots of land was the key consideration.

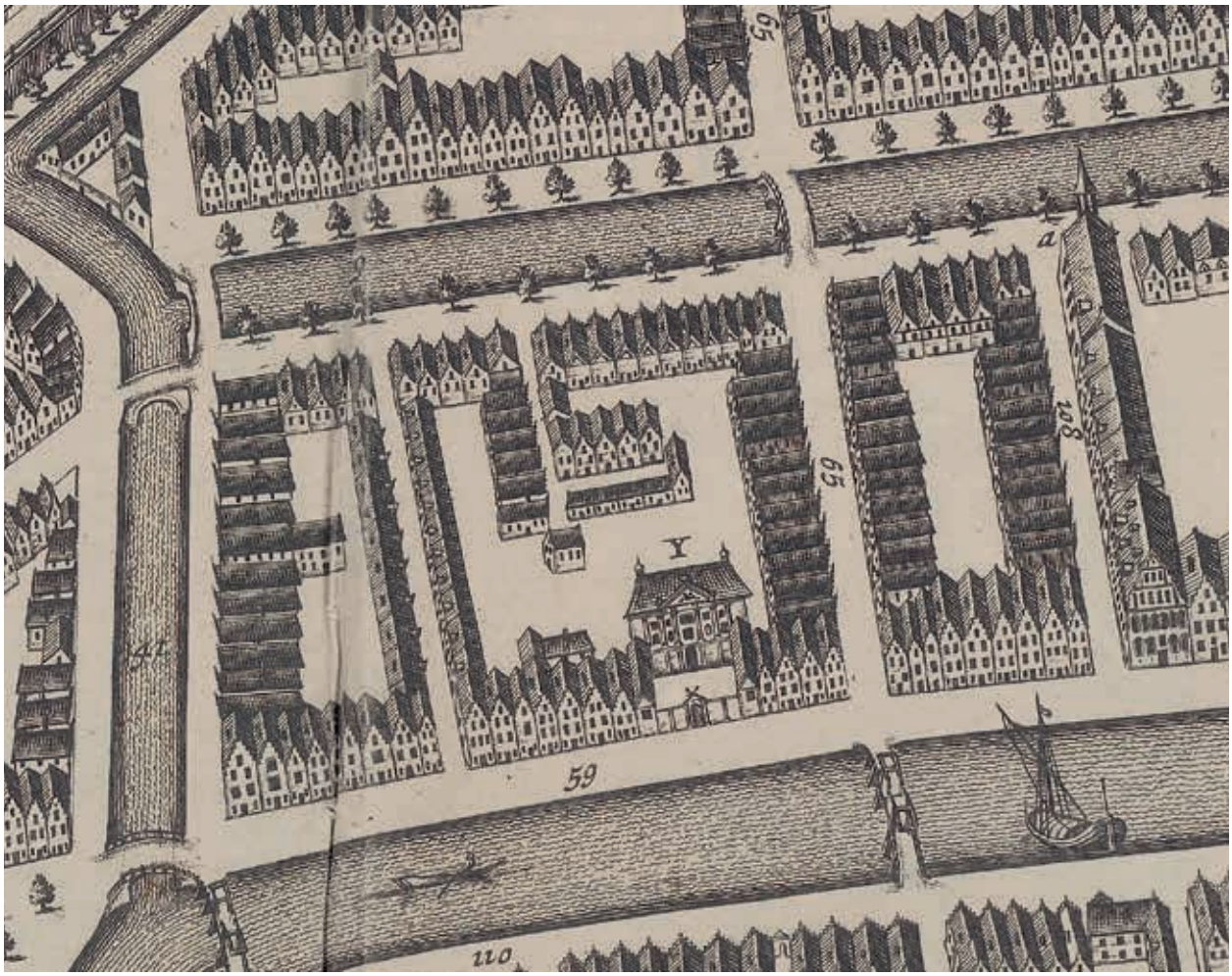
The period under consideration here, 1498-1748, was determined by the availability of the necessary serial sources, which is to say similar sources covering a longer period of time. Recently a series of tax assessment registers and two censuses from the period 1498-1748 were opened to the public. These records have made it possible to determine whether there was any clustering of cloth trades around the Lakenhal (Cloth Hall) and of serge trades around the Saaihal (Serge Hall).

Because of the high degree of specialization in the Leiden textile industry a great many different crafts were involved in the production process. In this article I focus on the cloth merchants (cloth buyers, *reders* and clothiers), drapers and weavers. This choice was primarily informed by the practical consideration that in the sources used – tax assessment registers and censuses – occupations were bound to occur in sufficient numbers over a longer period. They also had to be occupations whose practitioners were free settle wherever they wished, unlike fullers and dyers, for example, whose locations in seventeenth-century Leiden were dictated by the city authorities.[23]

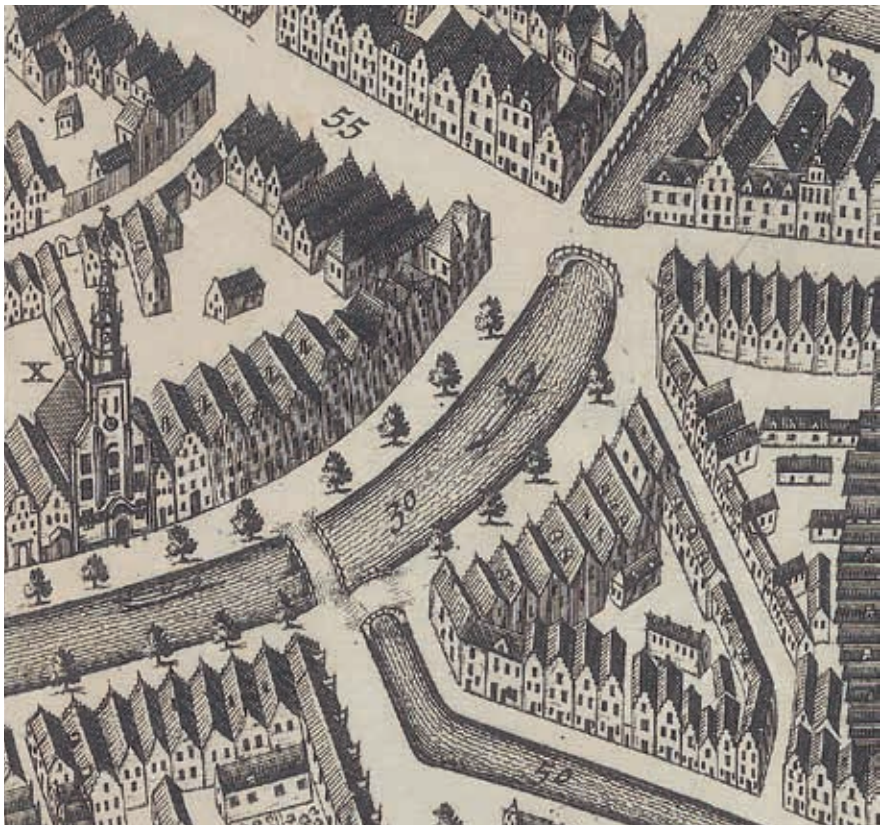
The study's relatively early start year and the relatively long period under investigation is quite unusual. The localization of occupational groups makes great demands of the historical sources. Serial sources covering a long period are scarce, especially pre-1550. Clé Lesger, for example, investigated the location of shops in Amsterdam, but serial data from before 1585 were either non-existent or difficult to find.[24]

TRADES AND HALLS

To ensure the production of woollen fabric of a consistent quality and a standard width, the city of Leiden established a rigorous inspection system. The inspection of textile sector trades, such as the cloth and serge trades, was centred on a hall. Posthumus asserted that 'the main idea was that all pieces should be "subject to the hall"'.[25] This meant that physical inspection of semi-finished and finished products took place in the hall, although there were also in-home inspections. For example, it is likely that the quality of the wool was inspected in the draper's home.[26] The cloth was also inspected in the weaver's home while the fabric was still 'in the ropes' (i.e. on the loom). This meant that the *prenter*, the official charged with attaching the lead seal attesting to quality, visited the weavers at home to



2. City map by Christiaan Hagen, 1670; details showing the Lakenhal on the Oude Singel (Y) and the Saaihal (X) on Steenschuur (Erfgoed Leiden en Omstreken)



check the evenness of the weave and the width of the cloth.[27] After this inspection, known as *het prenten*, the semi-finished products in both the serge and broadcloth trades were brought to the relevant hall to be inspected and re-measured by the *rauwe persenaars* (inspectors of semi-finished cloth).[28] Posthumus does not mention whose job this was and the sources he accessed do not appear to shed any light on the subject either.[29] Presumably it was the weavers who brought the unfinished cloth to the hall. After which the weaver would have taken the cloth back home where it would be collected by the draper. It is also possible that the weaver delivered it to the draper. Whatever the case, the important thing was for the draper to take delivery of it so that it could be passed to the next craftsman in the chain of production.

In the old cloth industry that process had been more straightforward as there was just one hall. However, in the new cloth industry several kinds of woollen fabrics were produced and so there were several halls. At its high point, Leiden's textile industry had seven trades and seven halls. To quote Posthumus, 'No trade without a hall, no hall without a trade'.[30] The division into trades and halls was strict in Leiden. A draper or weaver was not simply a draper or weaver in the general sense but belonged to one of the specialized trades. If he wanted to switch from the serge to the broadcloth trade, for example, this had to be officially recorded.[31]

The word 'hall' as used here does not refer to the covered space where textiles were sold, but to the *looihal* where the lead cloth seals were attached to approved cloth. It was here that the semi-finished and finished products were inspected to ensure that they met the high quality standards (fig. 4).[32] In the Middle Ages this submission of wares for inspection was referred to as *te paertse* and the inspection process itself as *paertsen*.[33] Initially the *paertse* (later *pers*, the horizontal rod over which the cloth was hung for inspection) stood in the wool hall, but from the first half of the fifteenth century until 1567 it was *upter stede halle* – in the town hall, on Breestraat.[34] Thereafter inspection took place in the former Sint Jabobsgasthuis on Steenschuur (fig. 2a). It is unclear whether cloth was still inspected here after the Spanish siege of 1574. In any event, the production of woollen fabrics declined steeply in this period.[35] It has been suggested that after the siege there was no longer any full-fledged cloth hall or cloth trade.[36] The sources are unclear on this point, but it is not impossible that Sint Jacobsgasthuis continued to function as an inspection hall for broadcloth. Whatever the case, by 1631 the production of woollen textiles had increased to such an extent that it exceeded the capacity of the fulling mills. In 1639 the need for a new broadcloth inspection hall arose. Several existing buildings were investigated but judged to be *nyet suffisant ende groot genoech* (neither adequate nor large enough). Accordingly, it was decided to erect a new building.[37] The choice fell on developed plots on the Oude Singel canal (fig. 2b).[38] The owner proved willing to sell and to vacate the property within seven weeks. Thereafter the demolition of the existing buildings and the construction of the Lakenhal proceeded expeditiously.

There is more clarity with respect to the Saaihal, which was established in 1583. After being temporarily accommodated in the church of the former Nazarethklooster, the hall was housed in the former Sint Jacobsgasthuis.[39] Accordingly, for five decades (1589-1640) the Saaihal and the Lakenhal shared this building. In other words, we should not picture a hall as a discrete structure, but rather as a large room within a building.

The daily traffic to and from the halls in Leiden must have been considerable, for the ten thousand lengths of cloth produced annually were subjected to several inspection rounds. Some idea of the activity can be gleaned from Susanna van Steenwijck-Gaspoel's *Gezicht op de Lakenhal* from 1642 (fig. 3). In 1671 there was talk of a hundred or two hundred weavers and others who visited the halls daily.[40] At 24 metres, the lengths of cloth they carried must have weighed pretty heavily.[41]

THE SPATIAL DISTRIBUTION OF TEXTILE OCCUPATIONS IN LEIDEN

The first step in discovering whether there was any clustering of textile occupations in the vicinity of the Leiden halls is to map the distribution of these occupations across the city. But how does one obtain the necessary information about Leiden craftsmen? This is where the aforementioned taxation records and censuses come in. The most important of these are the Vermogensbelasting (wealth tax) of 1498, the Tiende Penning (ten per cent asset revenue tax) of 1557, the 1581 census, the Klein Familiegeld (household income tax) of 1674 and the 1748 census.[42]

Taxation sources and censuses have their limitations. Wealthy textile dealers appear more often than impecunious spinners, weavers or fullers, for example. The 1498 Vermogensbelasting is an exception in this respect; this register also recorded the names of paupers. From this we learn that a higher proportion of poor people lived in the West (39% of 345 addresses) and the North (37% of 705 addresses) districts.

A second limitation of tax registers and censuses is that an occupation is by no means recorded for every household. That said, the Leiden sources are relatively well provided with occupational details. For example, in the tax register for the Tiende Penning of 1561 an occupation was recorded against half the names, in

3. Susanna van Steenwijck-Gaspoel, *Gezicht op de Lakenhal te Leiden* [View of the Lakenhal in Leiden], 1642 (Museum De Lakenhal, Leiden)

the 1748 census occupations were recorded for as many as 93% of households. By comparison, in Amsterdam the tax register for the Tiende Penning of 1562 recorded an occupation for only 16% of taxpayers.[43] Given the limitations of the sources it is necessary to bear in mind that the surveys presented here do not reflect the total number of craftsmen.[44]

As already mentioned, the textile-related occupations selected for analysis were those of cloth merchant (cloth buyer, *reder*, and clothier), draper and weaver. Drapers occupied an intermediate position between cloth buyers and weavers. In 1498 they were still wholesalers, in 1748 retailers.

The next step entails linking craftsmen to areas of the city. A concentration of any occupational group is described as clustered when over 33% of that occupational group lived in a particular part of the city. In addition, clustering is characterized as modest (33-49%), strong (50-65%) and very strong (over 66%). When looking at the clustering per district it is necessary to be clear about which division of the city is being used. The tax registers were grouped according to *bonnen*, the historical term for districts in Leiden. In the 1581 census, for example, there were seventeen, but their number and boundaries varied over time. Historical research into the distribution of wealth usually sticks to the division into *bonnen*. But this is problematical when making comparisons across several

years. For example, over the years, the boundaries of the Hogewoerd and Levendaal *bonnen* underwent several changes.

To preclude any ambiguities that might arise from the differing district boundaries, I have used larger units in my research. These are based as much as possible on natural boundaries in the form of waterways such as the rivers Oude Rijn, Nieuwe Rijn, Rijn (Rhine) and Vliet, and canals like the Vollersgracht (later Langebrug). This resulted in the identification of six districts inside the medieval city walls: Centre-old, Centre-Pieterswijk, North-old, East-old, South and West (fig. 5).

The seventeenth-century city expansion contains two areas: North-new comprises the districts that were developed in 1611 and 1644, East-new most of the 1659 city expansion. The South district was also expanded in 1659 but given the modest scale of this expansion no distinction has been drawn between South-old and South-new. The expansion areas are typical textile neighbourhoods and contain a large contingent of weavers' cottages.

With this information regarding craftsmen and clustering in mind we can now look to see whether it is possible to mount a plausible case for the proposition that the halls were 'magnets' that drew the craftsmen to them and caused or contributed to the observed clustering.

THE OLD CLOTH INDUSTRY: CLUSTERING AROUND THE CLOTH HALL?

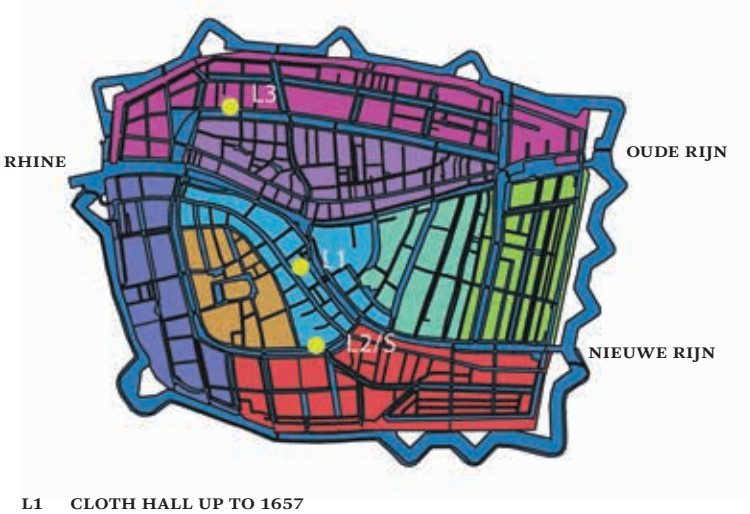
The 1498 tax register includes 114 drapers. Most belonged to Leiden's financial elite, although it is also clear that there were wide variations in affluence. In that respect drapers formed a less homogeneous group that year than the dyers, for example, among whom there was very little difference between minimum and maximum assessments. It is clear that the term draper covers wealthy and less wealthy individuals. There is no question of any clustering in a particular district, even when the amount of the assessment is taken into account: some less wealthy drapers lived in the centre while the wealthiest were spread across the entire city. In 1557 and 1561 there was a moderate clustering of drapers in East-old. In the same period (1544, 1557, 1561) there was also a moderate clustering of weavers in that district. In other words, the settlement pattern of drapers in these years corresponded to that of weavers. This is logical given that drapers and weavers would have regularly visited one another's home for the purpose of exchanging raw materials and semi-finished products. Cloth buyers are mentioned by name for the first time in the tax registers of 1557 and 1561. Their numbers are small – fifteen in both years – but unlike the drapers they were strongly clustered in Centre-old (fig. 6a). This is noteworthy because cloth buyers were not especially wealthy. Posthumus

4. Isaac Claesz. van Swanenburg, *Het vollen en verven* [Fulling and dyeing], 1594-1596, detail (Museum De Lakenhal, Leiden)

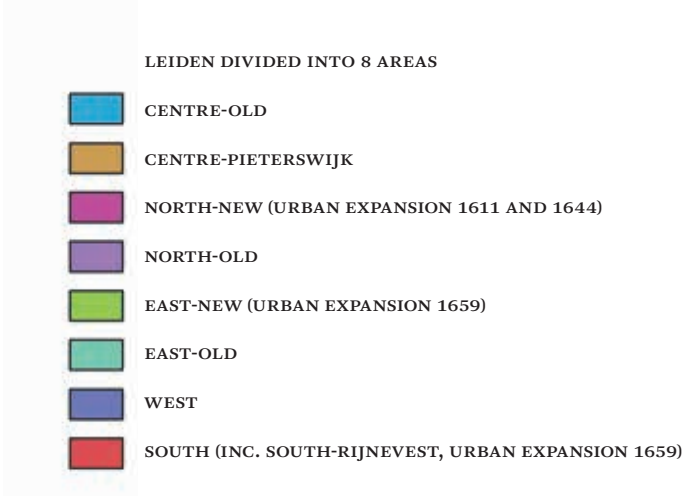
observed the same concentration in the later period (1599, 1623, 1644) as well, describing them as small traders whose clientele lived mainly in the Rhineland.[45]

The *wantsnijders*, too, were clustered together in Centre-old (fig. 6a). *Want* is the medieval Dutch word for broadcloth or woollen cloth, and later on *wantsnijders* started calling themselves *kleermakers* or clothiers.[46] *Kleermakers* did not repair or refashion clothing, which was done by seamstresses or dealers in second-hand clothing; they made new clothing.[47] *Wantsnijders/kleermakers* were also traders. This can be deduced from the fact that until 1411 the *wanthuis* was the name of the place where the cloth trade took place. The Wanthuis district takes its name from this building.[48] The *wanthuis* was primarily intended for *wantsnijders*, who rented stalls there from which to sell the woollen cloth.[49] In 1413 the function of the *wanthuis* was transferred to the town hall.[50]

5. The districts and the locations of the cloth halls and the Saaihal



L1 CLOTH HALL UP TO 1657
L2/S CLOTH HALL / SERGE HALL
L3 CLOTH HALL



THE NEW CLOTH INDUSTRY: CLUSTERING AROUND THE SERGE AND CLOTH HALLS?

The occupational designation *reder* (manufacturer) appears for the first time in the 1581 census. Although one and the same person could apparently be registered as both cloth buyer and *reder* – two textile workers identified in the census as *reder* appear in a different source for the same year as cloth buyer – the locational preference of *reders* differed from that of cloth buyers.[51] In 1581 the *reders* were moderately clustered in East and South (fig. 6a). Five are recorded as from Flanders and seven of the nineteen *reders* are recorded as having lived less than twelve years in their current abode. This group of newcomers may have strategically geared their location to that of the Lakenhal, which at that time was on the Steenschuur.

In 1674 and 1748 the *reders* were strongly clustered in North-new. The respective trade was not recorded for every *reder*, making it impossible to ascertain whether there were more broadcloth *reders* than serge *reders* in the vicinity of the cloth hall. Nevertheless, the strong concentration of *reders* in this northern district is striking. Wealthy *reders* might have been expected to settle in the affluent city centre or on fashionable Rapenburg.[52] Although the number of *reders* was small in both reference years, the clustering was strong. The trend was the same in both reference years, making it reasonable to surmise that this locational preference was based on a practical, business-related imperative (proximity to the Cloth Hall).

The *reders* increasingly developed into wealthy industrialists who traded with foreign countries.[53] From around 1640 they started to fulfil a new role. In order to be able to deliver cloth in greater quantities and more rapidly they increasingly took control of production.[54] In the seventeenth century the drapers were relegated to retailers and middlemen and started to work for the *reders*.[55] They were expected to be present in the hall awaiting potential buyers on two days a week, the rest of the week they would have been busy overseeing the various detail workers.[56] Sometimes, in addition to these activities, they also wove cloth.[57] The broadcloth and serge drapers and serge and broadcloth weavers are mentioned in sufficient numbers in the reference year 1674 to make it possible to determine whether there was any clustering around the Cloth or Serge halls. In 1674 serge weavers were moderately clustered in South, while there was a strong cluster of serge drapers in East-old (fig. 6b). Interestingly, they were virtually absent in North-old and North-new. However, North-new had a strong clustering of broadcloth drapers and weavers in 1674 (fig. 6b).

It can reasonably be surmised that in the reference year 1674 the distance between house and hall was a settlement factor in both the broadcloth and the serge

1544 CLOTHIERS N=35

1557 CLOTH BUYERS N=15

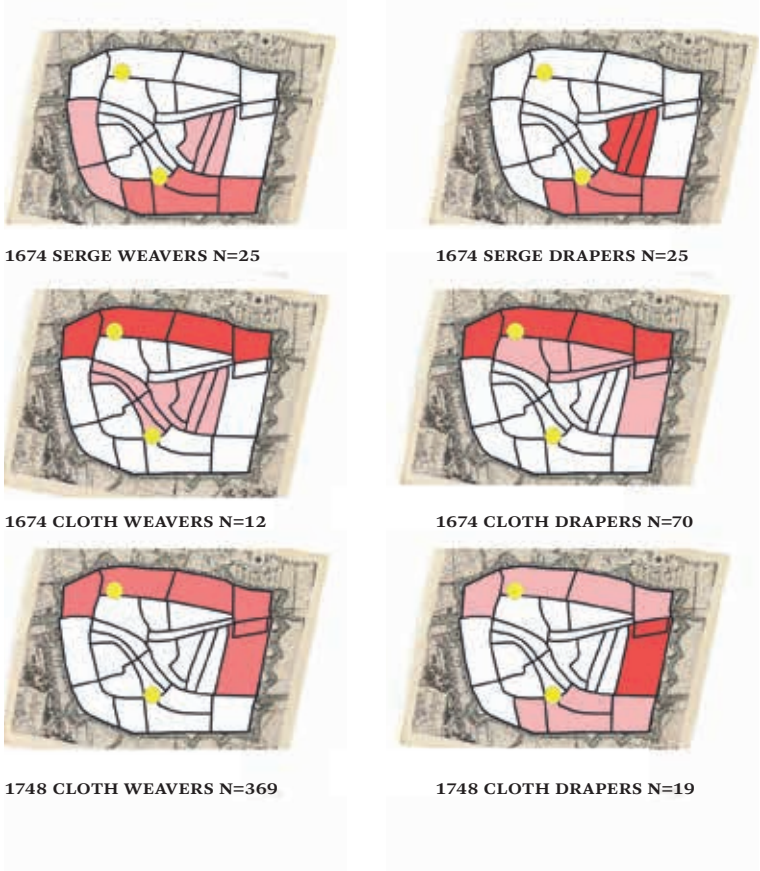
1581 REDERS N=17

1748 REDERS N=19

< 10%
10-32%
33-49%
50-66%
66-100%

6a. The distribution of the specified occupational groups against the background of the city maps of Jacob van Deventer (c. 1560) and Christiaan Hagen (1670). The yellow dots mark the location of the halls, compare with fig. 5

6b. The distribution of the specified occupational groups against the background of the city map of Christiaan Hagen (1670). The yellow dots mark the location of the halls, compare with fig. 5



1674 SERGE WEAVERS N=25

1674 SERGE DRAPERS N=25

1674 CLOTH WEAVERS N=12

1674 CLOTH DRAPERS N=70

1748 CLOTH WEAVERS N=369

1748 CLOTH DRAPERS N=19

< 10%
10-32%
33-49%
50-66%
66-100%

trades. In the 1748 census, too, the broadcloth *reders* were still concentrated in North-new, close to the Cloth Hall (fig. 6a). They lived mainly on Oude Singel, though a few lived in North-old on Oude Vest. This is not as far away as it may seem, for it borders the same canal, which bears a different name on either side.

CENSUS OF 1748: A RICH SOURCE, BUT LACKING PRECISE OCCUPATIONAL DATA

The 1748 Census makes it difficult to investigate the house–hall settlement factor. The first problem with this source is that there is not a single instance of the *fabrikeur* occupational designation, while it is known

that there must have been at least 175 in Leiden around this time.[58] In the eighteenth century, the *fabrikeur* was the person who not only distributed work, as the *reders* and drapers had previously done, but who also increasingly concentrated the work of spinners and weavers in factories or workshops.

The second problem is that the 1748 Census contains a disproportionate number of broadcloth weavers: 86% of the 369 weavers were identified as 'broadcloth weaver'. Yet at that moment broadcloth accounted for only ten per cent of the city's textile production. This raises the question of whether 'broadcloth weaver' was being used as a generic term for weaver. Nonetheless, it is still possible to look at the geographical distribution. As in 1674, the broadcloth weavers were clustered in North-new, but now in East-new as well. This clustering may be related to the fact that this was where most of the 86 workshops (proto-factories) for weavers and spinners were located.[59] It is not so much the house–hall distance as the workshop–house distance (or live–work distance) that is short, although it is not impossible that the workshops were built in East-new because there were already a lot of weavers living there and because this district had more undeveloped plots of land than North-new.

The third problem with the 1748 Census is the sketchy registration of drapers. In a third of cases there is no indication of the trade they were active in. Unlike in 1674, the nineteen recorded broadcloth drapers were strongly clustered in East-new and remarkably enough not in North-new (fig. 6b).

In the case of the 1748 Census, the imprecision of the source makes it difficult to determine the degree of occupational clustering of drapers and weavers in the broadcloth trade. Research into the serge trade also proves unfeasible since only two serge drapers and six serge weavers were registered. That low number is not entirely inexplicable because in the middle of the eighteenth century serge accounted for a mere two per cent of Leiden's textile production.[60]

1749: LIVING IN A DESIRABLE AREA

The sources from the period 1498-1748 were studied with respect to occupation and location. This may give rise to the incorrect impression that wealth played only a minor role in the choice of location. Even though there is evidence of a concentration of cloth industry-related occupations close to the cloth hall, the craftspeople would have lived in accordance with their financial means. While a cloth merchant might have lived close to the Lakenhal on Oude Vest/Oude Singel, a weaver would have lived in the area behind, on Lammermarkt. The hierarchical differences among textile occupations can be illustrated by looking at the situation in 1748/1749.

In an exceptional combination of sources, the 1748 census data were linked to that of the Land Tax Register for 1749. By way of an example I looked at the broadcloth drapers, broadcloth weavers and serge weavers in East-new. Around the middle of the eighteenth century this was the poorest area of the city,[61] but as well as the large number of small weavers' cottages and back-to-back dwellings, it also boasted substantial canal-side mansions on Herengracht.[62] The broadcloth drapers in the census lived, without exception, on the chic Herengracht, nearly always in a house they owned. A few broadcloth weavers also lived on the Herengracht, but in rented housing. They were more frequently to be found in weavers' cottages on the Waardegracht. A sharp distinction becomes apparent when one looks at rental values: the rental value of the dwellings of broadcloth drapers in this district was four times higher (19 guilders) than that of the broadcloth weavers (5 guilders), while the serge weavers' dwellings had a considerably lower average rental value (2.50 guilders).

CONCLUSION

The first conclusion that can be drawn is that the geographical clustering of cloth merchants in Leiden changed over time. Whereas in the Middle Ages there was a strong concentration of cloth buyers and clothiers (*wantsnijders*) in the old city centre where the Cloth Hall was then located, in Early Modern times wealthy textile merchants (*reders*) exhibited no preference for that area. In 1581 they were concentrated in the South and East-new districts, close to the Cloth Hall, which at that time was located on Steenschuur. In 1674 they were strongly clustered in North-new, where the Cloth Hall had been located since 1640. In other words, in the reference years the cloth merchants were to be found in the vicinity of the hall.

The hypothesis that in addition to 'no trade without a hall, no hall without a trade' – Posthumus's succinct characterization of the strictly regulated clothing industry in Leiden – there was also 'no hall without a clustered occupational group', is reinforced by the distribution of broadcloth drapers, broadcloth weavers, serge drapers and serge weavers. In 1674 the broadcloth drapers and weavers were both strongly concentrated in North-new. By contrast, there were no serge drapers and weavers in this district; instead, they were concentrated in areas closer to the Serge Hall (East-old and South).

This study shows concentrations of seven textile occupations (cloth buyers, cloth manufacturers, clothiers, broadcloth drapers, serge drapers, broadcloth weavers, serge weavers) in various parts of the city. In each instance it identified a clustering in or adjacent to the location of the relevant hall. On their own, each

individual occupation would offer insufficient grounds for concluding that the house–hall distance was a settlement factor, but all seven occupations taken together in the period 1498 to 1674 provide sufficient indications in that direction. This tendency to live close to the hall does not exclude the role of wealth as a settlement factor, because it was still possible to live in a desirable area only a short walking distance from the hall.

Although the Leiden tax assessment registers and the two censuses are excellent sources that are not inferior to those used in the case studies of Antwerp and London referred to earlier, there is still a need for a bigger data set that would make it possible to study settlement patterns not just at district level, but also at street or plot level. That, in combination with the mapping of a logical walking route, perhaps with the aid of a computer program such as Space Syntax, would make it possible to include the distance to the hall. The systematic opening up of historical sources by the study group Mapping Historical Leiden makes that a realistic possibility in the not too distant future. As such, I hope to be able to publish more on this topic.

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NOTES

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9 D.L. Smail, *Imaginary Cartographies. Possession and Identity in Late Medieval Marseille*, Ithaca 2000, 176-177.
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19 C. Arnaud, *Topographien des Alltags: Bologna und Strassburg um 1400. Europa im Mittelalter*, Vol. 28, Berlin/Boston 2018, 18-19.
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21 The Leiden housing market was a rental market; over half the population lived in a dwelling they did not own. In 1606 some 57% of the almost 5,000 dwellings were rental properties (statistics from Dataset 1606 Schoorsteengeld). By 1748 the proportion of rental dwellings had risen to 79% (Dataset Volkstelling 1748).
22 For a detailed analysis of this principle in medieval Bologna and Strasbourg, see Arnaud 2018 (note 19).
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25 Posthumus 1939 (note 4), 449.
26 Posthumus 1939 (note 4), 451.
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28 Posthumus 1939 (note 4), 453.
29 For example: *LTN* III (note 7), 198, d.d. 1591.
30 Posthumus 1939 (note 4), 338
31 Posthumus 1939 (note 4), 345.
32 Posthumus 1939 (note 4), 469.
33 *LTN* I (note 7), p. 81 (1415); p. 215 (1446), p. 247 (1447).
34 *LTN* I (note 7), p. 16 and Posthumus 1939 (note 4), 157.
35 Posthumus 1939 (note 4), 129. From 1 574 to 1589 an annual average of just under six hundred lengths of cloth were produced.

36 G. Steenmeijer, *Tot cieraet ende aensien deser stede. Arent van 's-Gravensande (ca. 1610-1662), architect en ingenieur*, Leiden 2015, 133.
37 Posthumus, *LTN* IV (note 7), p. 286 (14 March 1631).
38 Decision to build Lakenhal: *LTN* IV (note 7), p. 353 (8 May 1639); Posthumus 1939 (note 4), 470 and Overvoorde both mention that the building was completed in 1640, (J.C. Overvoorde, *Toelichting op Inventaris van de archieven van de hallen, 1544-1886*, Leiden 1928, 8). This should be 8 August 1641; see Steenmeijer 2005 (note 36), 135.
39 *LTN* III, p. 160 (17 September 1587); *LTN*, I (note 4) p. 178 (17 March 1589).
40 Posthumus 1939 (note 4), 469.
41 Regulations dictated that Leiden broadcloth should be no longer that 35 'el' and no shorter than 34 'el'. See Posthumus 1939 (note 5), 379. A Leiden *el* was the same length as an Amsterdam *el*: 68.8 cm.
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1674: Klein Familiegeld. Dataset Gerrit Jan Peltjes who made it available as an MS-Access database to the Werkgroep Historisch Leiden in Kaart. De dataset is available at DANS https://doi.org/10.17026/dans-zfy-wu3y, and is also accessible via Historische Vereniging Oud Leiden/Archiefonderzoek Jan van Hout.
1748: Volkstelling 1748. Dataset H.A. Diederiks (Leiden University) and H.D. Tjalsma, *Leiden Historical Population Databank 1700-1850, Kohier 1748* (1972). DANS https://doi.org/10.17026/dans-23u-3exj.

SOURCE	NUMBER OF ENTRIES	WITH OCCUPATION	ERCENTAGE MENTIONING OCCUPATION
Vermogensbelasting 1498	3010	867	29%
Vermogensbelasting 1502	1441	552	38%
Gedwongen Lening 1508	290	54	19%
Tiende Penning 1544	1910	646	34%
Tiende Penning 1557	2757 owners 833 renters	1335 owners 254 renters	48% owners 30% renters
Tiende Penning 1561	2785	1396	50%
Volkstelling 1581	12277	3258	27%
Klein Familiegeld 1674	2724	2520	93%
Volkstelling 1748	9757 (inside city walls)	6803	70%

Overview of sources used. A summary of the datasets (transcriptions) used is included in the bibliography.

43 G. van Tussenbroek, 'Geografie van arm en rijk. Het kohier van de tiende penning van Amsterdam (1562)', *Tijdschrift voor Historische Geografie* 14 (2018), 242-255, q.v. 244.
44 Posthumus 1939 (note 4), p. 642 states for example that in 1602 some three thousand weavers were active in Leiden, in 1667 c. 3500. Incidentally, it is unclear how he arrived at these figures (cf. p. 642, note 5 and table 113, p. 939).
45 Posthumus 1939 (note 4), 817.
46 The charters of the *kleermakers* guild for 1436, 1519, and 1561 refer exclusively to *wantsnijders*. In the 1578 charter both terms are used interchangeably. Transcriptions by H. van Endhoven, available on the Oud Leiden website under Jan-van-Hout-archiefonderzoek.
47 H. Zimmerman, 'Uit de gracht van Alva. Textielresten onder de loep', in: H. Brand, J. Benders and R. Nip (eds.), *Stedelijk verleden in veelvoud. Opstellen over laatmiddeleeuwse stadsgeschiedenis in de Nederlanden voor Dick de Boer*, Hilversum 2011, 137-151, q.v. 147.
48 Posthumus 1908 (note 4), 165.
49 Posthumus 1908 (note 4) 264-267.
50 Interestingly, Posthumus was rather dismissive of *wantsnijders*. He thought that medieval *wantsnijders* possessed 'few means' and that their number, compared with drapers, was small; see Posthumus 1908 (note 4), 267. The tax registers tell a different story. The *wantsnijders* were not the only ones selling woollen cloth; the drapers and others were permitted to do so as well. And in the mid-fifteenth century the sale of cloth did not necessarily have to take place in the hall. Selling from home was allowed as long as the stall rental was still paid. Only the sale of small lengths of cloth was free of excise tax.
51 This applies to Jacob Balde and Claes de Turck, both from Flanders, who dealt in flannel and serge. This was verified in the database of Historisch Leiden in Kaart (www.historischleideninkaart.nl).
52 M.R. Prak, *Gezeten burgers. De elite in een Hollandse stad. Leiden 1700-1780*, Amsterdam 1985, 226-228; G.J. Peltjes, *Leidse Lasten. Twee belastingkohiern uit 1674* (NHDA [Nederlands Historisch Data Archive] publication), Leiden 1985. The text of the book is accessible via the Oude Leiden/Jan van Hout website, section 5.3.
53 Posthumus 1939 (note 4), 711.
54 Posthumus 1939 (note 4), 529-530.
55 Posthumus 1939 (note 4), 503, 810.
56 Posthumus 1939 (note 4), 811, 814.
57 Posthumus 1939 (note 4), 564-569.
58 Posthumus 1939, (note 4), 1033.
59 Leiden had 86 workshops at that time. East-new boasted a clear concentration of 32 workshops but North-new had remarkably few of these 'proto-factories': just four. H.D. Tjalsma, 'Een karakterisering van Leiden in 1749', in: H.A. Diederiks, D.J. Noordam and H.D. Tjalsma (eds.), *Armoede en sociale spanning. Sociaal-historische studies over Leiden in de achttiende eeuw*, Hilversum 1985, 17-44, q.v. 28; the article makes no mention of numbers. Heiko Tjalsma (Oegstgeest) kindly supplied this information (April 2020).
60 Production figures derived from Posthumus 1939 (note 4), 930-931 (1672), 1098-1099 (1748). There were no figures

for the serge trade for the year 1674, so I have opted for the nearest year for which there are figures.

61 H.D. Tjalsma, 'Leidse Textielarbeiders in de achttiende eeuw', in: J.K.S. Moes and B.M.A. de Vries (eds.), *Stof uit het Leidse verleden. Zeven eeuwen textielnijverheid*, Utrecht 1991, 91-99, q.v. 97.

62 On the type of buildings in this part of the city, see R.M.R. van Oosten et al., 'Leidse wevershuizen in seriebouw. Een materiële getuigenis van "projectontwikkeling" in de Gouden eeuw', *Archeologie in Nederland* no. 3, 2017, 36-45.

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THE SETTLEMENT PATTERN OF CLOTH MERCHANTS, DRAPERS AND WEAVERS IN THE TEXTILE CITY OF LEIDEN 1498-1748

ROOS VAN OOSTEN

Leiden was once the foremost textile city in Europe. Under 'de nieuwe draperie' (the new cloth industry, from 1580), a wide variety of woollen textiles were produced. At the pinnacle of this industry the city had no fewer than seven cloth halls. Merchants, drapers and weavers usually worked from home, appearing at the hall at set times to have their semi-finished or finished products inspected for quality. Thus broadcloth weavers went to the Lakenhal (Cloth Hall) and the serge weavers to the Saaihal (Serge Hall). The economic historian N.W. Posthumus summarized this strictly regulated craft system as 'no occupation without a hall, no hall without an occupation'. This article draws on occupational data in seven tax assessment registers and two censuses from the period 1498-1748 to investigate whether the location of the halls influenced the settlement pattern of cloth merchants, drapers and weavers. In other words, was the distance between home and hall a determining factor in where people chose to live?

For this purpose the city was divided into eight districts. An occupational concentration is categorized as clustered when more than one third of a particular occupational group lived in the district concerned. Within this a distinction has been made between moderate clustering (33-49%), strong clustering (50-65%) and very strong clustering (over 66%).

The clustering of cloth merchants in Leiden changed over time. Whereas in the Middle Ages there were high concentrations of cloth buyers and dealers in the historical centre where the Lakenhal was then situated, by the Early Modern period the wealthy textile merchants (shipowners) had moved on. In 1581 they were clustered in the South and East-new districts, once again close to the Lakenhal, which was then situated on the Steenschuur canal. In 1674 there was a strong concentration in North-new, the district where the Laken had been located since 1640. Thus in each of the reference years, the cloth merchants were to be found in the vicinity of the cloth hall.

The surmise that, in addition to 'no occupation without a hall, no hall without an occupation', a case of 'no hall without a clustered occupational group' prevailed is reinforced by the distribution of cloth drapers, cloth weavers, serge drapers and serge weavers. In 1674 there was a strong concentration of both cloth drapers and cloth weavers in North-new. There were, however, no serge drapers or weavers in North-new; they were concentrated in areas closer to the Saaihal (East-old and South).

This study reveals clusters of seven textile-related occupations in various districts. In each instance there was a cluster in or adjacent to the location of the associated hall. On their own, individual occupations would provide insufficient grounds for concluding that the house–hall distance was a determining factor for locating a business, but taken together, the seven occupations provide enough indications in that direction in the period 1498 to 1674. This tendency of living close to the hall does not mean that prosperity played no role at all, because even within a limited walking distance from the hall it was still possible to live in a desirable area.