

The Historical British City-Industry Database

Version 2.0: March, 2016

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1 Overview

The British Census of Population is a rich source for information on the long-run development of British cities. C.H. Lee (1979) calls the Census data, “the best single indicator of structural change in the British economy and its component regions in the nineteenth and early twentieth centuries.” The purpose of this document is to introduce a new dataset based on the Census of Population reports. This dataset, which I call the Historical British City-Industry Database, tracks employment, by industry, in 31 of the largest English cities from 1851-1911. This database provides a unique opportunity to analyze the evolution of city economies over this important period of economic history.

This project builds on past work, particularly that of Lee (1979), but differ from previous work in that it is focused on cities, rather than the more aggregated units considered by previous researchers. I concentrate on the period starting in 1851, when relatively high-quality data on local employment become available, and lasting until 1911, the last census taken before the disruptions of WWI.¹ Thus, the city-industry database provides a long and relatively stable window in which reliable data are available to track the development of British cities. English cities grew substantially during this period and began to take on many of the features that we associated with modern cities, including public transportation systems, suburbs, and public utilities.

¹As noted by Lee (1979), there is a discontinuity in the treatment of distributive trades after 1911 which makes it difficult to generate consistent occupation categories that include both data after 1911 and data prior to 1901. Data from 1841 could potentially be added to our series, but there are some questions about the quality of the data in that year, which represented the Census Office’s first experience with the collection and categorization of detailed occupation data.

The next section of this document discusses recent updates to the database that are incorporated in this version of the data. I then provide an overview of the data collection procedures used by the British Census, followed by a discussion of the most important issues faced by researchers using these data. A number of tables providing additional information about the database are provided at the end of this document.

2 Updates in Version 2.0

Four substantial changes have been made to the data relatively to the previous version. All of these involved reallocating occupation subcategories across the major “group_2” industry categories. The changes are:

1. Domestic coachmen and grooms have been reclassified from Services to Road Transport. This makes the data consistent, because these occupations were already classified in the road transport category after 1891.
2. Coal heavers, coal laborers, coal merchants, and coal dealers have been reclassified out of the Mining category. This improves the ability of the database to differentiate between actual coal mining activities and activities related to the distribution of coal. Coal merchants and dealers have been reclassified into the Merchants, Agents, Etc. category. Coal heavers have been reclassified in the Messengers, Porters, and Storage category, where they were already included in some years.
3. Medical professionals have been separated from the Professionals category and given their own category. This includes doctors, dentists, nurses, etc. This separate category is likely to be useful for researchers interested in the spatial variation in medical care. The medical professionals category is not included in the main database, which spans 26 broad private-sector industries, but is available upon request.
4. Chemists and druggists have been moved from the Chemicals industry category to the Medical Professionals category. This means that the Chemicals category is now more closely focused on the manufacturing and use of industrial chemicals, while local chemists and druggists (i.e., pharmacists) are included with other medical professionals.

3 Collection of the British Census

By 1841, the basic approach to data collection that would persist through 1911 had been established by the British Census. The first principle of the collection effort was to capture,

at a specific point in time, the exact features of the population. The appointed day for each census from 1841-1911 is given in the table below. For each of these, the census endeavors to capture the location of every person in Britain on the midnight preceding the appointed day. By 1851, the standard practice was to record the location of each person on a Sunday night near to the first day of April and to collect the recorded information on the following Monday.

Table 1: Dates of the census 1851-1911

Year	Census date	Year	Census date
1841	June 6	1881	April 3
1851	March 30	1891	April 5
1861	April 7	1901	March 30
1871	April 2	1911	April 2

Taking the Census required substantial effort and organization. At the bottom of the organizational pyramid were Enumerators, each of which was responsible for visiting each house in an enumeration district. Supervising the enumerators were Registrars. Each Registrar was responsible for a registration sub-district which they were responsible for dividing into properly sized enumeration districts. The registrars were also responsible for hiring the enumerators. Clear instructions were provided to the registrars on the qualifications required when hiring enumerators²:

The Enumerator, in order fulfill his duties properly, must be a person of intelligence and activity: he must read and write well, and have some knowledge of arithmetic: he must not be infirm, nor of such weak health as may render him unable to undergo the requisite exertion, he should not be younger than eighteen years of age, nor older than sixty five: he must be temperate, orderly and respectable, and be such a person as is likely to conduct himself with strict propriety, and to deserve the good-will of the inhabitants of his District. He should also be well acquainted with the District in which he will be required to act; and it will be an additional recommendation if his occupations have been in any degree of a similar kind.

Above the Registrars were appointed Superintendent Registrars, each responsible for a registrar's district. Table 2 gives an idea of the number of each of these groups employed in the various years.

²"Instructions to Registrars of Births and Deaths," 13th December, 1850, George Graham, Registrar General, p. 1.

Table 2: Registrars and Enumerators Employed, 1851-1911

Year	Superintendent Registrars	Registrars	Enumerators
1851	624	2,190	30,610
1861	624	2,194	30,329
1871	626	2,195	32,543
1881	630	2,175	34,711
1891	633	2,122	35,507
1901			
1911		2,035	over 35,000

The same basic procedure was used in each of these census years. To collect data from individual households, the enumerators dropped off a household schedule several days before the appointed census date. The households were then responsible for filling out this schedule with the relevant information for each individual present on the evening of the Census day. Those who worked at night, such as coal miners, were also included on the households lists, even if they were at work at midnight of the census day. The next day, the enumerator would then visit each of the houses in their enumeration district to pick up the household schedules. Where the schedule was incomplete or had not been filled out, it was the responsibility of the enumerator to interview someone in the household in order to complete the form. Enumeration districts were designed to be sufficiently small that the enumerator could visit each household in one day. Thus, the instructions to the registrars specified that the enumeration district should not exceed 200 houses and should not require the enumerator to travel more than 15 miles. Moreover, an effort was made to keep any single enumeration district from spilling over into multiple geographic areas for which results would be produced.

Separate procedures were used to enumerate travelers, those on ships and barges, and those in public institutions such as schools, jails, or hospitals. Travelers were enumerated based on the inn at which they spent the night or, if traveling at night, the location at which they arrived in the morning. Those on ships and barges were enumerated separately by the Customs service. For public institutions, the registrar was responsible for providing the head of the institution with a larger enumeration schedule and collecting it from them on the day after the census date. As for the homeless, in 1911 we know that the police were responsible for their enumeration. For earlier years it is not clear how they were included, though at least by 1871 we know that (p. x) “The persons sleeping out of doors, in barns tents, barges, vessels of every kind, men working in mines at night, and people traveling in railway carriages and other conveyances were specially looked after”.

Once the household schedules were collected and checked, the enumerator would then enter the data in his enumeration book. The book, together with all of the householder's schedules, were then delivered to the registrar. The registrar would then review the enumerators books, as well as the returns from the public institutions which he has collected, to ensure their accuracy. After certifying their accuracy, the registrar delivered the books (but not the household schedules) to the superintendent registrar, who would also review them, before forwarding them to the census office. At the census office, the information would be reviewed one last time, and then tabulated into the census abstracts from which our data are drawn.

These procedures remained fairly constant across the 1851-1911 period, with some minor changes. For example, in 1911 the procedure was changed to eliminate the copying of households schedules into enumerator's books. Instead, the central census office tabulated results directly from the household returns. Also, in 1911, a specially designed set of maps were produced to improve the accuracy with which the limits of different areas were defined.

The Census office was keenly aware that the cooperation of the public played a crucial role in determining their success. The Census Office used newspapers and schools to inform the public of the importance of filling out their census returns. Thus, in 1871, "And circulars were addressed to the editors of newspapers, explaining the objects and uses of the Census, in order that, if they thought proper, they might impart information on the subject to their readers, and thus aid in securing complete and correct returns."³ By 1901, other means were also being used, such as holding special lessons in schools on the importance of the census.

The Act authorizing the Census made compliance by households a legal obligation. The penalty for failing to comply was up to five pounds over all of the census years, a sum that would have been substantial for most families, even in 1911. In the event that households refused to provide information, the enumerators were instructed to,

In case of refusal to make a written return, or to answer the questions which the Enumerator is authorized to put, he may remind persons so refusing of the penalty to which they are liable for each offense; and may show them the extracts from the Act printed with these instructions. He may also warn any person whom he suspects of giving willfully false information, of the penalty imposed for that offense. If any person should still refuse, he must take a note of the name and residence of such person, and report the refusal to the Registrar as soon as possible. (Instructions to Enumerators, 1851 Census)

The available evidence suggests that refusal to provide information was limited. For example, the 1861 reports that,

³"Mode of Taking the Census", Census Report of 1871, Appendix B, p. 160.

...not a single instance occurred in which it was found necessary to adopt proceedings under the penal clauses of the Act of Parliament. Several of the enumerators who had acted in the same capacity ten years before remarked that a more intelligent appreciation of the objects and uses of the inquiry, combined with the utmost willingness to furnish the returns, was evinced by the poorer population; a result which may be fairly ascribed to the co-operation of the educated and influential classes of society, particularly of the clergy of all denominations and of the public writers in the press. (General Report, Census of 1861, p. 3)

4 Householder's schedules

The householder's schedules remained fairly similar over the 1851-1911 period, though there was some expansion in the material covered. This evolution can be seen in the 1851 and 1911 schedules presented in Figures 1-4. Each schedule included on the front page some detailed instructions as well as an example of how to fill out the form. Particularly important for our purposes are the instruction related to filling out the occupation field. For example, in 1851, manufacturing workers are instructed that:

In the case of WORKERS IN MINES OR MANUFACTURES, and generally in the constructive ARTS, the particular branch of work and the material, are always to be distinctly expressed if they are not implied in the names, as in Coal-miner, Brass-founder, Wool-carder, Silk-throwster. Where the trade is much sub-divided, both trade and branch are to be returned thus – “Watchmaker – Finisher;” “Printer – Compositor.” A person following MORE THAN ONE DISTINCT TRADE may insert his occupations in the order of importance.

It is clear from these instructions that, at least in this category, the intent was to capture something closer to what we would today think of as industry rather than occupation. In addition, masters, journeyman and apprentices were instructed to be identified as such, with masters listing the number of persons employed.

The schedules also include clear instruction on the treatment of women and children. For example, the 1851 instructions state:

The occupations of women who are regularly employed from home, or at home, in any but domestic duties, to be distinctly recorded. So also children and young persons. Against the names of children above five years of age, if daily attending school, or receiving regular tuition under a master or governess at home, write “Scholar,” and in the latter case add “at home”.

5 Geographies

An important issue faced by researchers using the Census of Population data is the geographies of the available observations. An illustration of this is provided in the General Report for the census of 1891 (p. 2) which lists the separate geographic areas for which population data were provided:

Table 3: Geographies for which separate population data were reported in the 1891 Census

1	England and Wales
54	Ancient Counties
468	Parliamentary Areas
303	Municipal Boroughs and their Wards
62	Administrative Counties
64	County Boroughs
732	Petty Sessional Divisions
11	Registration Divisions
55	Registration Counties
633	Registration Districts
2,110	Registration Sub-districts
1,011	Urban Sanitary Districts
575	Rural Sanitary districts
14,684	Civil Parishes
2	Ecclesiastical Provinces
34	Ecclesiastical Dioceses
13,780	Ecclesiastical Parishes

These geographic definitions may be driven by historical geographies (e.g., Ancient Counties), political definitions (Parliamentary Areas), administrative purposes (Municipal Boroughs, Administrative Counties), census divisions (Registration Divisions, Counties, Districts, and Sub-districts), districts constructed for public service provision (Urban and Rural Sanitary Districts), or religious divisions (Ecclesiastical Provinces, Dioceses and Parishes). While in some cases particular areas will correspond, in others they may overlap. Moreover, many of these areas could change in any given year, through division, mergers, or the creation of new definitions.

For those interested in studying cities, two types of geographic areas are of interest. First, one may desire a geographic area that is fixed over time and large enough to contain substantially all of an urban area in all of the years of interest. The advantage of working with a fixed geographic area is that growth in the city will be independent of administrative

or political choices regarding the expansion of city or metropolitan area. On the other hand, over longer periods of time a fixed geography, together with a growing city, implies that the area must either include a great deal of rural area in the early years or must miss a substantial fraction of the urban area in later decades. Either of these are undesirable features when studying how the economy of a city evolves over time.

An alternative to the fixed geography is a geographic definition that expands over time as the city grows. This has the advantage of including only urban area within the geographic definition. The trade off is that choices about whether to expand the definition over time will potentially affect observed city growth. As a result, variable geographies are likely to be more attractive when one is interested in studying changes in the composition of a city while controlling for overall city growth.

In this database, the focus is on variable geographic units that expand as the city grows. To construct variable geographic definitions of cities, we rely on the geographies for which occupation data are reported, since one of the main uses of the variable-geography data is in analyzing the industrial composition of cities. Table 4 describes the geographic units for which occupation data are reported for cities in each year.

Table 4: Geographic definitions for which city occupation data are reported

Year	Geographic definition	Details of reported city occupation data
1851	Principal Towns	Based on either municipal or parliamentary limits
1861	Principal Towns	Same as in 1851
1871	Principal Towns	Same as in 1851
1881	Urban Sanitary Districts	Only USDs with population over 50,000
1891	Urban Sanitary Districts	Only USDs with population over 50,000
1901	County or Municipal Boroughs	
1911	County or Municipal Boroughs	

There is evidence that the changing geographic categorizations had a modest impact on the data. One way to check this is to take advantage of the fact that in most of the Censuses, the census department has constructed populations in a city in the previous census year, but using the census geographies for the current year. These can be compared to the population reported in the previous census in order to observe the amount of population growth due to the change in the city’s geographic boundaries.

To make this point concrete, consider an example. In 1911, the geographic boundaries of the city of Stockport were expanded to include urban areas on the city edge. Specifically, the 1911 census reports that,

By the Stockport (Extension) Order, 1901, which came into operation on the 9th November, 1901, [after the 1901 census], Stockport County Borough was extended to include Reddish Urban District (and Civil Parish)...

For comparison purposes, in 1911 the census department then went back to the 1901 census and constructed a population for Stockport in 1901 that included the Reddish Urban District (as well as other areas added at the same time). We can then compare the population in Stockport reported in the 1901 census (for the 1901 boundaries) to the population reported for 1901 in the 1911 census (for the 1911 boundaries), to get an idea of how much the geographic shifts influenced the population of the city.

Table 5 describes, for each of the years for which these back-casting populations were constructed, the average of the absolute value of the change in population due to the shift in city geographies in each year. We can see that the average change in city population due to shifting city boundaries is around 4-5% in any given year. This value does not jump in the 1871-1881 period, when the census shifts from reporting values for Principal Towns to reporting values for Urban Sanitary Districts, nor does it jump in the 1891-1901 period, when the shift is from Urban Sanitary Districts to Municipal or County Boroughs. This suggests that these definitional changes are not substantially affecting the results. The geographies move in discrete bursts. Thus, in any given year most cities show no geographic shifts at all, while a few cities show discrete shifts that often substantially increase the population. Once a city has experienced a substantial shift that expands the city population, there is generally no shift in the preceeding decade or two.

Table 5: Average absolute percentage change in city population due to shifting geographic boundaries

1861-1871	1871-1881	1881-1891	1891-1901	1901-1911
6.12%	4.89%	2.96%	4.47%	4.00%

This table shows the average change in city population due to shifts in the geographic extent of cities for each of the years from 1861-1911 for 25 cities. So, for example, the first column of the table shows the average over the absolute value of the shift in population in 1861 that would have been generated by a shift from the 1861 city boundaries to the 1871 city boundaries, given the distribution of population in 1861.

The remaining columns conduct the same exercise for later years.

5.1 Available cities

The set of cities for which detailed data are listed in the census abstracts varies over time as the rules for inclusion change. Table 6 describes the count of cities for which occupation

data are available in each year. The main bottleneck for constructing longer series is 1881, when the census began using a population cutoff of 50,000 to determine the cities for which they would provide data. However, this does not mean that 43 cities are available for all year, because some of the cities that met the criteria in 1881 were not reported before, or were later dropped from reporting. In total, there are 31 cities for which data are available for all years. A table showing the full set of cities available in each year is in the Appendix.

Table 6: Count of cities for which occupation data are reported in each year

1851	1861	1871	1881	1891	1901	1911
73	73	75	43	56	78	95

There are a few small naming issues in the data that one should be aware of. One is Kingston-upon-Hull, which is often listed as just Hull. Another is Portsmouth, which in the early records is often listed as Portsea Island. Another issue arises with Plymouth, which is available in the Census starting in 1851 but is not included in our analysis database. The issue here is that in 1851 and 1861, the Plymouth entries include Devonport. Starting in 1871, Devonport was not included in the Plymouth entries, but separate occupation data for Devonport was also not listed, making it impossible to construct a consistent series for Plymouth. It is also worth noting that in the analysis data, Manchester always includes Salford, an adjoining town, since these essentially comprise a single urban area and, in some years, data are only provided for the two areas together.

6 Occupation data

For those interested in the role played by economic forces in the development of British cities, the occupation data reported in the Census can provide a useful tool, though one that must be handled with care. The first thing that should be understood about these data is that thinking about them as reflecting what we think of today as occupations is misleading. In fact, they are generally much closer to what we would think of as industries, with only a few categories that appear closer to a true occupation, a point made in the 1911 Census:

...the complexity of modern industry is such that especially in dealing with manufacturing processes it is impossible for the most part to classify [occupations] by the nature of the work done by the individual. The headings covering the processes of production and manufacture will be found, therefore, to refer as a rule to the article made or material worked rather than the process carried on by the individual worker. (Instructions to Clerks Employed in Classifying Occupations, Census of 1911, p. 1)

This feature is made explicit in the instructions printed on every householders schedule in each census year, which put emphasis on the fact that the occupation category should include the “*branch of work*” and the material worked, particularly for manufacturing workers. The instructions printed on each householder’s schedule also made it clear that occupation information should be provide for women and children, as well as the men, including those who worked from home. Of the instructions on the schedule, roughly half focused the single occupation column.

The instructions to the Enumerators emphasized the importance placed on the occupational categories, which were the most difficult area in which to obtain accurate results. The 1851 instructions state,

He [the Enumerator] should pay particular attention to the column headed “Rank, Profession, or Occupation,” and take care that what is inserted under that head is in strict conformity with the instructions applicable to that column.

To emphasize this point, and provide further details, two additional pages of instructions and examples were attached to the Enumerator’s instructions providing further guidance on the completion of the occupational category.

In 1911 the household schedule changed slightly, with the inclusion of both an “Occupation” and an “Industry” entry. The motivation for this change appears to be to encourage more explicitly the households to list the industry in which they were employed. These entries were used together in constructing the occupational tabulations in the published census abstracts. No separate tabulations of industry and occupation were published until 1921.

One issue faced in the data collection phase is that many people may hold more than one occupation. The approach taken by the Census in dealing with this issue was to leave the judgment up to the workers themselves. Thus,

The enumerators were instructed to this effect, that “a person following more than one distinct trade may insert his occupations in the *order of their importance*,” and in the classification the first occupation was generally taken. (Census of 1861, General Report, p. 30)

Other than a limited listing of the second occupations of farmers, the census thus does not provide information on the secondary employment of workers. In studying the 1881 Census returns, Woollard (1999) suggests that, “Most multiple occupations, however, cause no real problem as the occupations are similar or would be classified in the same general order. (The exceptions seem usually to concern publicans of any description, shoemakers, grocers, and drapers.)”

Having collected the household schedules, the Census office was faced with a bewildering array of occupation names. In order to deal with this, the Census office produced dictionaries covering the names and instructing the clerks how to classify each. These dictionaries were updated every few decades to account for changes in nomenclature and the emergence of new industries. For example, in 1881, the dictionary used in the preceding decades (which contained 7,000 occupational names) was deemed to be out of date. To build a new dictionary, the Census office,

...sent out circulars to leading manufacturers, asking for information as to the designations used in their branches of industry, and the information thus collected we supplemented by searches through trade directories, and especially by a preliminary examination of the enumeration books from the chief industrial centers. By these means we eventually collected together between eleven and twelve thousand different occupations having each its name.

Using these dictionaries, the clerks of the central Census office then aggregated the occupations under a set number of headings. Table 7 shows the number of headings used for the town-level data in each of the Census years (even more detailed headings were sometimes used for the national data or for London). One thing to notice in Table 7 is that the categories are fluctuating over time. A consequence of this is that obtaining consistent series will require matching different categories over time and then aggregating to a smaller number of distinct occupational groups. Table 7 also highlights the fact that how the Census reported occupations changed in 1901 to include substantially less detail.

Table 7: Count of reported occupational categories in town data for each census year

1851	1861	1871	1881	1891	1901	1911
375	479	436	402	349	157	264

To deal with these changing occupational categories, I aggregate the data to 26 *private-sector* occupational categories. This grouping, called “group_2”, covers the entire 1851-1911 period in a consistent way. To construct these consistent industry categories, I group industries using the the information provided by the census that classified each occupation

into particular orders and sub-orders. Occupations that fell into the same order or sub-order were likely to be related. Starting in 1891, the census began publishing crosswalks relating each occupation in that year to the category in the previous census, and these were also used for the years after 1871. At the end of this document, tables describing how different occupations are mapped into these 26 industrial categories are provided.

Figure 11 at the end of this document provides time-series plots of the national employment patterns for the 26 industry categories in the main database both at the national level and across the 31 analysis cities. There are a number of patterns visible in these graphs that suggest that these occupational matches are allowing us to construct consistent and reliable indicators of the evolution of industry employment over time. In general the plots show reasonably smooth growth paths over time. In addition, the pattern of volatility also seems reasonable; capital goods industries such as Construction, Earthenware & Bricks, and Shipbuilding, show the greatest volatility over time, while industries such as General Services and Professionals show extremely smooth series.

The variation in growth rates across the different industries fits the historical record well. Established industries such as Textiles, Leather & Hair Goods, and Dress, show consistent but slow growth. In contrast, Second Industrial Revolution industries, such as Chemicals & Drugs, Instruments, Oil & Soap, and Vehicles, show clear accelerations in the later years of the series. The Metal & Machinery industry, which includes a mix of first and second Industrial Revolution industries, falls somewhere in between.

Another comforting pattern is that series that we would expect to move together often do so. One example is the construction-related industries – Construction, Earthenware & Bricks, and Wood & Furniture – all of which experience slow growth between 1881-1891, rapid growth from 1891-1901, and slow growth again from 1901-1911. Another pair of related industries that moves together is Shipbuilding and Sea & Canal Transport, both of which grow rapidly from 1851-1861, decelerate from 1861-1871, and then resume modest growth.

There are a number of additional issues to consider when dealing with the occupational data. The first is that, prior to 1881, some retired persons were known to have listed their former occupation in the occupation category and were therefore tabulated under their former occupation. The Census of 1881 (p. 28) describes the issue,

As regards persons “retired” from any business, we found ourselves in some doubt [as to how to include them]. In the Census of 1871 such persons had been considered as following the business from which they had really retired, and were abstracted accordingly. To depart from this former practice would, of course, interfere in some measure with the ready comparison of the returns for 1881 with those of 1871. But, on the other hand, it was known that a very inconsiderable proportion of persons who had retired from business made mention of their former occupation in their schedules, and that, consequently, if such persons were included, the return made by us under any occupation would be neither of persons actually so occupied, nor yet of those together with those who had retired from the trade, a large proportion of the latter being omitted. We found by careful examination of the enumeration books for an entire county, including a large town, that, had we included the “retired,” as was done in 1871, the persons returned by us under any heading would on an average have been about 2 per cent more than they are actually. On the whole, seeing that the difference was so small, we thought it best altogether to omit those who had retired from business...

The practice of omitting retirees who listed an occupation from the occupation returns begun in 1881 was then carried on in the latter years.

A similar issue exists with workers who were unemployed. In general, those who were temporarily unemployed were included under their usual occupation. It goes without saying that the Census data are not a useful tool for considering temporary unemployment patterns. In a similar vein, those in asylums, jails, and hospitals were commonly classed under their previous occupation prior to 1881. Lee (1979) conducted an analysis of the share of the population listed as employed at various years and concluded that the main break in practice was between 1871 and 1881, with a drop of about 5% in the activity rate. However, it is unclear how much of this might have been due to cyclical economic factors.

A second issue of concern is the treatment of makers vs. dealers. This is a tricky issue because, while in some cases firms specialize as either makers or dealers, others, particularly small firms, undertake both activities at the same time. Prior to 1901, both makers and dealers working in the same industry were often lumped together, though in cases where many specialized dealers existed we see individual dealer categories. For example, the 1851 census separately identifies “Coal, Merchant or Dealer,” but also combined some makers and dealers in smaller categories, such as “Other Workers, Dealers in Hemp.” Starting in 1901, the Census made an effort to separate workers and dealers, but with limited success. In general, it seem to us that the best course of action is simply to include workers and dealers in the same industry together in a single consistent category.

A third issue in using the occupational data reported in the published Census Abstracts is that the age categories reported change over time. In 1851 and 1861, detailed occupation data for principal towns are reported in two age categories, “Under 20 years” and “20 years and up.” In 1871, only the “20 years and up” category appears for the town-level data. In 1881 and 1891, occupation is reported only for all ages together, and in 1901-1911 it is reported only for those over 10, which amounts to essentially reporting all workers.

The key issue in constructing a consistent series is therefore 1871, where a substantial number of workers under 20 would not be included in the tabulations. Note that a consistent series of occupation counts for workers over 20 can be constructed for 1851-1871 without making any adjustment, and when running analysis over just those years that may be the preferred approach. To construct a consistent database over a longer period requires that we make an adjustment to the 1871 population counts. To do so, we take advantage of the fact that occupations counts by age are available for 1871 at the national level. Under the assumption that the fraction of workers under 20 in a particular industry is fairly constant across locations, we can use the national share of workers under 20 to adjust the city occupation data to reflect all workers.

Apart from these general issues, there are some more specific issues that apply to particular occupational categories. The agricultural occupations are particularly fraught because the ambiguity involved in deciding at what point a child or wife working in a farm home was listed as an agricultural worker. As a general rule we exclude agricultural occupations from our data.

7 Construction of the city-industry data

The British city-industry data series were constructed using the tabulations from the Census Abstracts published by the Census Office for each census year. Scanned version of these published volumes have been made available by the U.K. Data Archive at the University of Essex through the histpop.org website. The data, coming from hundreds of pages of scanned PDFs, were then digitized by hand using a double-entry procedure to reduce error rates.

8 Some descriptive statistics

Table 8 provides information about the two largest industries present in each location in 1881, near the middle of the period covered by the city-industry data set. This table shows that the largest industries tend to be textiles, metals & machinery production, services, and sea & canal transport (construction generally ranks just behind). The most concentrated

cities tend to be the mid-sized textile cities, such as Blackburn and Preston.

Table 8: Main city-industries and their employment shares in 1881

City	Largest Industry		Second Industry	
	Industry	Share	Industry	Share
BATH	General Services	0.41	Apparel	0.15
BIRMINGHAM	Metal & Machinery	0.32	General Services	0.13
BLACKBURN	Textiles	0.65	General Services	0.07
BOLTON	Textiles	0.5	Metal & Machinery	0.13
BRADFORD	Textiles	0.49	General Services	0.09
BRIGHTON	General Services	0.39	Apparel	0.12
BRISTOL	General Services	0.25	Apparel	0.2
DERBY	Metal & Machinery	0.19	General Services	0.14
GATESHEAD	Metal & Machinery	0.25	General Services	0.14
HALIFAX	Textiles	0.45	General Services	0.1
HUDDERSFIELD	Textiles	0.38	General Services	0.13
HULL	General Services	0.19	Sea & Canal Transport	0.12
IPSWICH	General Services	0.23	Apparel	0.21
LEEDS	Textiles	0.19	Metal & Machinery	0.14
LEICESTER	Apparel	0.48	General Services	0.12
LIVERPOOL	General Services	0.19	Sea & Canal Transport	0.13
LONDON	General Services	0.27	Apparel	0.13
MANCHESTER	Textiles	0.21	General Services	0.14
NEWCASTLE	General Services	0.2	Metal & Machinery	0.15
NORTHAMPTON	Apparel	0.56	General Services	0.14
NORWICH	Apparel	0.26	General Services	0.18
NOTTINGHAM	Textiles	0.3	Apparel	0.17
OLDHAM	Textiles	0.56	Metal & Machinery	0.14
PORTSMOUTH	General Services	0.26	Apparel	0.18
PRESTON	Textiles	0.56	General Services	0.08
SHEFFIELD	Metal & Machinery	0.42	General Services	0.14
SOUTH SHIELDS	Sea & Canal Transport	0.23	General Services	0.16
SOUTHAMPTON	General Services	0.26	Apparel	0.12
STOCKPORT	Textiles	0.46	Apparel	0.16
SUNDERLAND	General Services	0.17	Metal & Machinery	0.14
WOLVERHAMPTON	Metal & Machinery	0.38	General Services	0.16

Table 9 describes the three cities with the largest employment shares in each industry in 1881, near the middle of the period covered by the city-industry data set. Due to its very large size, London is the largest employer in most industries, with Textiles and Mining being the only exceptions. However, once London is excluded there is quite a bit more variation in the leading cities within each industry.

Table 9: Cities with the largest employment shares in each industry in 1881

Industry	Largest City		Second City		Third City	
	City	Share	City	Share	City	Share
Apparel	London	0.4604967	Leicester	0.0615236	Manchester	0.0601832
Beverages	London	0.3251416	Birmingham	0.0957367	Leeds	0.0744738
Chemicals	London	0.2974518	Manchester	0.1391403	Bradford	0.0974041
Construction	London	0.4884531	Liverpool	0.0647022	Manchester	0.0600317
Earthenware & Bricks	London	0.3050958	Manchester	0.1166667	Birmingham	0.0872414
Food processing	London	0.4609309	Liverpool	0.0739422	Manchester	0.0612189
General services	London	0.5864782	Liverpool	0.0566899	Manchester	0.0453964
Instruments & Jewelry	London	0.5301595	Birmingham	0.2138632	Sheffield	0.071594
Leather & Hair goods	London	0.5763817	Leeds	0.0783284	Birmingham	0.0693667
Merchants, etc.	London	0.5495868	Liverpool	0.0796473	Manchester	0.0697957
Messengers & Storage	London	0.5328817	Manchester	0.1067048	Liverpool	0.0885966
Metal & Machines	London	0.2167799	Birmingham	0.1698175	Sheffield	0.1410652
Mining	Leeds	0.172772	Nottingham	0.1130671	Sheffield	0.1117801
Oils & Soap	London	0.4818902	Birmingham	0.0763464	Manchester	0.0694298
Paper & Publishing	London	0.6411526	Manchester	0.0651802	Liverpool	0.0435675
Professionals	London	0.6529865	Manchester	0.0460603	Liverpool	0.0386043
Railway transport	London	0.4282612	Manchester	0.0756747	Liverpool	0.0723011
Road transport	London	0.5700426	Liverpool	0.079526	Manchester	0.0674579
Sea & Canal transport	London	0.3657689	Liverpool	0.3251468	Hull	0.0769957
Shipbuilding	London	0.2602921	Liverpool	0.2133181	Sunderland	0.208348
Shopkeepers & Salesmen	London	0.4588529	Liverpool	0.0981172	Manchester	0.0922639
Textiles	Manchester	0.1284616	Bradford	0.1178028	London	0.1034928
Tobacco products	London	0.4952694	Liverpool	0.1357405	Nottingham	0.0507176
Vehicles	London	0.4253992	Birmingham	0.0981484	Manchester	0.0657453
Water & Gas	London	0.4378918	Manchester	0.093848	Liverpool	0.0484914
Wood & Furniture	London	0.5638638	Manchester	0.0585136	Liverpool	0.0582566

9 Conclusions

There remains a great deal of debate about the overall accuracy and reliability of the census returns. The limited checks that are possible given the surviving data, however, give cause for optimism. For example, P.M. Tillott (1972), after examining “nearly 3,000 pages of enumerators’ books (recording a population of about 56,000 persons)” from 1851-61 concluded that, “all in all, the abiding impression...is admiration for the skill of the nineteenth-century administration coupled with faith in the accuracy of the results. It is an impression supported by such checks as can be made.”

References

- Lee, C.H. 1979. *British Regional Employment Statistics 1841-1971*. Cambridge, UK: Cambridge University Press.
- Tillott, P.M. 1972. *Nineteenth-century Society*. Cambridge University Press. Chap. Sources of Inaccuracy, pages 82–133.
- Woollard, Matthew. 1999. *The Classification of Occupations in the 1881 Census of England and Wales*. Mimeo.

Figure 1: Householder's schedule from 1851 – front page

POPULATION RETURNS—ENGLAND AND WALES—

EXAMPLES OF THE MODE OF FILLING UP THE RETURN.									
Name and Surname.	Head of Family.	Condition.	Sex.	Age last birth day.	Rank, Profession, or Occupation.	Where Born.	Descend or Allied.	IT	or Allied.
George Wood.	Head of Family.	Married.	M.	48	Farmer (of 11 acres and employing 4 labourers)	Kent, Dartford			
Maria Wood.	Wife	Unmarried	F.	44	Farmer's Wife				
Emily Wood.	Daughter	Unmarried	F.	22	Farmer's Daughter				
Ann Wood.	Daughter	Unmarried	F.	20	Farmer's Daughter				
Frances Wood.	Daughter	Unmarried	F.	14	Schooler				
Jane Holmes.	Widow	Unmarried	F.	39	House Servant				
Maria Edwards.	Servant	Unmarried	F.	24	House Servant				
Thomas Young.	Servant	Unmarried	M.	19	Farm Labourer	Shrewsbury, Shropshire.			
James Cox.	Head of Family.	Widow	F.	49	Glover	Scotland			
Sophia Cox.	Daughter	Unmarried	F.	34	Dressmaker				
Elizabeth Cox.	Daughter	Unmarried	F.	22	Hand Loom Weaver (Silk)				
William Cox.	Son	Unmarried	M.	14	Farmer's Apprentice				
John Butler.	Widow	Unmarried	M.	54	Printer's Apprentice				
Thomas Cox.	Widow	Unmarried	M.	54	Printer's Apprentice				
James Cox.	Widow	Unmarried	M.	54	Printer's Apprentice				
William Cox.	Widow	Unmarried	M.	54	Printer's Apprentice				
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CENSUS OF THE POPULATION

1851 No.

HOUSEHOLDER'S SCHEDULE

(Prepared under the direction of one of Her Majesty's Principal Secretaries of State.)

Parcel or Township	Town, Public, Village, or Hamlet, ..	Street, Square, Ave, or Road.....	Name or No. of House.....

To the Householder.
You are requested to insert the particulars specified on the other pages, respecting all the persons who slept or abode in your house on the night of March 30th, in compliance with an Act which passed the House of Commons, and the House of Lords, in the last Session of Parliament, and received the assent of Her Majesty, the Queen, on the 5th of August, 1850.

*This Paper will be called for on Monday, March 31st,
by the appointed Officer,*

Persons who refuse to give candid information, incur a *Penalty of Fine* Points; besides the inconvenience and annoyance of appearing before two justices of the Peace, and being convicted of having made a willful mis-statement of age, or any of the other particulars.

The return is required to enable the Secretary of State to complete the Census; which is to show the number of the population—their arrangement by ages and families in different ranks, professions, employments, and trades—their distribution over the country in villages, towns, and cities—their increase and progress in the last ten years.

Approved,
G. GREY,
Registrar General.

GEORGE GRAHAM,
Registrar General.

GENERAL INSTRUCTION.

This Schedule is to be filled up by the OCCUPIER or Person in charge of the house; if the house is let or sub-let to different persons or families, in separate stories or apartments, the OCCUPIER or Person in charge of each such story or apartment must make a separate return for his portion of the house upon a separate Householder's Schedule.

INSTRUCTIONS for filling up the Column headed "RANK, PROFESSION, or OCCUPATION."

The Senior Titles of PERKS and other Persons of Rank to be inserted, as well as any high office which they may hold. Magistrates, Aldermen, and other important public officers to name their profession and their official titles.

ARMY, NAVY, AND CIVIL SERVICE. Add *after* the rank, "Army," "Navy," or "Civil Service," as the case may be, *"Last Indicated Compensatory Service."* Persons in the CIVIL SERVICE to state the Department to which they are attached, after their title or rank; those on the Superannuation List to be so designated. Chelms, Greenwald, and other Persons, to be clearly designated.

CLERGYPEN OF the Church of England to refer themselves as "*Rector*" of _____, "*Parson*" of _____, "*Curate*" of _____, "*Rector*" or as and having care of souls, "*Clerk*," "*Parish*"-*Ministers* and Roman Catholic "*Parishes*" to return themselves as such, and to state the name of the church or chapel in which they officiate. Visiting "*Ministers*" to return themselves as "*Independent Minister*" of _____, "*Chapel*," "*Baptist Minister*" of _____, "*Chapel*," "*Ko*," "*Local*" or occasional precedents must return their ordinary occupations.

LEGAL PROFESSION—Barriers to state whether or not in actual practice; Officers of any Court, &c., to state the description of office and name of Court. The designation "Attorney" or "Solicitor" to be confined to those whose names are actually upon the Roll. Persons in Solicitors' offices should distinguish whether "Solicitor", *Managing, Articles, Writing, or General Clerk*.

Members of the MEDICAL PROFESSION to state the University, College, or Hall, of which they are Graduates, Fellows, or Associates—also whether they practice as Physicians, Surgeons, or General Practitioners, or are *not* practicing.

PROFESSORS, TEACHERS, PUBLIC WRITERS, Authors, and Scientific Men—to state the particular branch of Science or Literature which they teach or pursue, and the work which they cultivate. Graduates should state their degrees in this column.

Artists, the art which they cultivate. Graduates should enter their degrees in this column.

PERSONS ENGAGED IN COMMERCE, as Merchants, Brokers, Agents, Clerks, Commercial Travellers, to state the particular kind of business in which they are engaged, or the staple in which they deal.

The man **PANNER** to be applied only to the occupier of land, who is to be returned—*Former's* (p. 317) *asserts*, *employing* [12] *laborers*,² the number of acres, and of in and out-door *laborers*, on March 31st, being in all cases inserted. Sons or daughters employed at home or on the farm, may be returned—*Former's* *Sons*,³ *Former's* *Daughters*.⁴

Is **TRADERS** the Master is to be distinguished from the Journeyman and Apprentice, thus—(*Carpenter*)—*Master* *employing* [6] *sons*,⁵ inserting always the number of persons of the trade in his employ on March 31st.

IN TRADES the Master is to be distinguished from the Journeyman and Apprentice, thus—(*Carpenter—Master employing [6 men]*)² lowering always the number of persons of the trade in his employ on March 31st.

In the case of WORKERS IN MINES OR MANUFACTURES, and generally in the constructive ARTS, the particular branch of work, and the material, are always to be distinctly expressed if they are not implied in the names, as in Coal-miner, Brass-founder, Wood-carver, Silk-thrower. Where the trade is much sub-divided, both trade and branch are to be returned thus—*Watchmaker—Finisher*.²

2. **A person following more than one distinct trade may insert his occupations in the order of their importance.**

Persons following no Profession, Trade, or calling, and holding no public office, but deriving their incomes chiefly from land, houses, mines, or other real property, from dividends, interest of money, annuities, &c., may designate themselves "Landlord Proprietors," "Proprietor of Iron Mines," "Proprietor of Houses," "Fundholders," "Annuity-men," &c., as the case may be. Persons of advanced age who have retired from business to be entered thus—
Relieved Silk Merchant, "Retired Waldmancaster," &c.

ALMS-RECEIPTS, and persons in the receipt of parish relief should, after being described as such, have their particular occupations also inserted.

relief should, after being described as such, have their previous occupations inserted.

WOMEN AND CHILDREN.—The titles or occupations of ladies who are householders to be entered according to the above instructions. The occupations of women who are regularly employed from home, or at home, in any kind of domestic duties, to be distinctly recorded. So also of children and young persons. Against the names of children above five years of age, if daily attending school, or receiving regular tuition under a master or governess at home, write "Scholars," and in the latter case add "at home."

Figure 2: Householder's schedule from 1851 – back page

[No. 2.]

LIST of the MEMBERS of this FAMILY, of VISITORS, and of SERVANTS who SLEPT or ABODE in this House on the NIGHT of SUNDAY, MARCH 30th.

1	NAME and SURNAME.	RELATION to Head of Family.	CONDITION.	SEX.	AGE [Last Birthday.]	RANK, PROFESSION, or OCCUPATION.	WHERE BORN.	If Deaf-and-Dumb, or Blind.
	<i>No Person absent on the Night of March 30th to be entered.</i> Write after the Name of the Head of the Family, the Names of his Wife, Children, and others of the same Sex as himself, then Visitors, Servants, &c.	Scale as before Wife, Son, Daughter, or Servant, Visitor, or Servant.	Write "Married," "Widow," "Single," or "Unmarried," Name of all Persons except Young Children.	Write "M" against Male, and "F" against Female.	For Infants under One Year, state the Age in Years, Months, and Days.	(Before filling in this Column, you are requested to read the Instructions on the other side.)	Opposite the Names of those born in England, write the County, and Town or Parish. If born in Scotland, Ireland, the British Colonies, the East Indies, or in Foreign Parts, state the Country; in the last case, its British Subject, ally, "British Subject."	Write "Deaf-and-Dumb," or "Blind," opposite the Name of the Person.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

The foregoing is a true Return concerning all the Members of this Family. Witness my Hand, _____

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CENSUS OF ENGLAND AND WALES, 1911.

Before writing on this Schedule please read the Examples and the Instructions given on the other side of the paper, as well as the headings of the Columns. The entries should be written in Ink.

The contents of the Schedule will be treated as confidential. Strict care will be taken that no information is disclosed with regard to individual persons. The returns are not to be used for proof of age, as in connection with Old Age Pensions, or for any other purpose than the preparation of Statistical Tables.

NAME AND RESIDENCE	RELATIONSHIP TO HEAD OF FAMILY	AGE (last birthday) and SEX	PARTICULARS AS TO MARRIAGE	PROFESSION OR OCCUPATION of Person aged ten years and upwards	INDUSTRY or SERVICE with which worker is connected	Whether Employed, or Unemployed, or Own Account	Whether Writing at Home, or at Office, or in Public	BIRTHPLACE of every person	NATIONALITY of every person	INSTABILITY
Mr. James Smith, 12, High Street, London, E.C.1.	Head of Family	45	Married	Manager of a Firm	Manager of a Firm	Employed	At Office	London, England	English	None
Mrs. Mary Smith	Wife	42	Married	Housewife	Housewife	Unemployed	At Home	London, England	English	None
John Smith	Son	15	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	12	Single	Student	Student	Unemployed	At Home	London, England	English	None
William Smith	Son	8	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	5	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	3	Single	Student	Student	Unemployed	At Home	London, England	English	None
Mary Smith	Daughter	2	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	1	Single	Student	Student	Unemployed	At Home	London, England	English	None
John Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Mary Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
John Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Mary Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
John Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Mary Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
John Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Mary Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
John Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Mary Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
John Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Mary Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Elizabeth Smith	Daughter	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
John Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
Thomas Smith	Son	0	Single	Student	Student	Unemployed	At Home	London, England	English	None
James Smith	Son	0	Single	Student	Student	Unemployed				

Figure 5: Cities with occupation data reported

Towns	Region	Complete	1851	1861	1871	1881	1891	1901	1911
Colchester	East		x	x	x				
Bury St. Edmunds	East		x	x	x				
Ipswich	East	yes	x	x	x	x	x	x	x
Kings Lynn	East		x	x	x				
Leyton	East						x	x	x
Walthamstow	East							x	x
East Ham	East							x	x
Norwich	East	yes	x	x	x	x	x	x	x
Ilford	East								x
Southend-on-Sea	East								x
West Ham	East					x	x	x	x
Yarmouth	East		x	x	x			x	x
Chester	Northwest		x	x	x			x	x
Macclesfield	Northwest		x	x	x				
Stockport	Northwest	yes	x	x	x	x	x	x	x
Barrow-in-Furness	Northwest				x		x	x	x
Birkenhead	Northwest					x	x	x	x
Wallasey	Northwest							x	x
Blackburn	Northwest	yes	x	x	x	x	x	x	x
Blackpool	Northwest								x
Bolton	Northwest	yes	x	x	x	x	x	x	x
Bootle	Northwest							x	x
Bury	Northwest					x	x	x	x
Lancaster	Northwest		x	x	x				
Liverpool	Northwest	yes	x	x	x	x	x	x	x
St. Helens	Northwest					x	x	x	x
Manchester	Northwest	yes	x	x	x	x	x	x	x
Oldham	Northwest	yes	x	x	x	x	x	x	x
Preston	Northwest	yes	x	x	x	x	x	x	x
Burnley	Northwest					x	x	x	x
Rochdale	Northwest					x	x	x	x
Wigan	Northwest						x	x	x
Warrington	Northwest						x	x	x
Southport	Northwest								x
London	London	yes	x	x	x	x	x	x	x
Darlington	North								x
Durham	North		x	x	x				
Gateshead	North	yes	x	x	x	x	x	x	x
South Shields	North	yes	x	x	x	x	x	x	x
Stockton on Tees	North							x	x
Sunderland	North	yes	x	x	x	x	x	x	x
West Hartlepool	North							x	x
Newcastle-upon-Tyne	North	yes	x	x	x	x	x	x	x
Tynemouth	North		x	x	x			x	x

Figure 6: Cities with occupation data reported (cont.)

Towns	Region	Complete	1851	1861	1871	1881	1891	1901	1911
Carlisle	North		x	x	x				
Whitehaven	North		x	x	x				
Kindal	North		x	x	x				
Leicester	North-mid	yes	x	x	x	x	x	x	x
Grimsby	North-mid						x	x	x
Boston	North-mid		x	x	x				
Lincoln	North-mid		x	x	x			x	x
Newark	North-mid		x	x	x				
Nottingham	North-mid	yes	x	x	x	x	x	x	x
Derby	North-mid	yes	x	x	x	x	x	x	x
Croydon	Southeast					x	x	x	x
Wimbledon	Southeast								x
Hastings	Southeast						x	x	x
Canterbury	Southeast		x	x	x			x	x
Cillingham	Southeast								x
Chatham & Rochester	Southeast		x	x	x				
Dover	Southeast		x	x	x				
Maidstone	Southeast		x	x	x				
Eastborne	Southeast								x
Brighton	Southeast	yes	x	x	x	x	x	x	x
Chichester	Southeast		x	x	x				
Portsmouth	Southeast	yes	x	x	x	x	x	x	x
Bournemouth	Southeast							x	x
Southampton	Southeast	yes	x	x	x	x	x	x	x
Winchester	Southeast		x	x	x				
Reading	Southeast		x	x	x		x	x	x
Oxford	South-mid		x	x	x			x	x
Acton	South-mid								x
Ealing	South-mid								x
Edmonton	South-mid								x
Enfield	South-mid								x
Willesden	South-mid						x	x	x
Hornsey	South-mid							x	x
Tottenham	South-mid						x	x	x
Northampton	South-mid	yes	x	x	x	x	x	x	x
Bedford	South-mid		x	x	x				
Cambridge	South-mid		x	x	x				
Wisbeach	South-mid		x	x	x				
Salisbury	Southwest		x	x	x				
Dorchester	Southwest		x	x	x				
Poole	Southwest		x	x	x				
Exeter	Southwest		x	x	x			x	x
Plymouth & Devonport	Southwest		x	x	x				
Plymouth only	Southwest					x	x	x	x

Figure 7: Cities with occupation data reported (cont.)

Towns	Region	Complete	1851	1861	1871	1881	1891	1901	1911
Devonport only	Southwest						x	x	x
Truro	Southwest		x	x	x				
Bridgewater	Southwest		x	x	x				
Bath	Southwest	yes	x	x	x	x	x	x	x
Swindon	Southwest								x
Bristol	West-mid	yes	x	x	x	x	x	x	x
Burton upon Trent	West-mid							x	x
Handsworth	West-mid							x	x
Hanley	West-mid						x	x	
Smethwick	West-mid							x	x
Gloucester	West-mid		x	x	x			x	x
Hereford	West-mid		x	x	x				
Shrewsbury	West-mid		x	x	x				
Stafford	West-mid		x	x	x				
Stoke upon Trent	West-mid								x
Wolverhampton	West-mid	yes	x	x	x	x	x	x	x
Dudley	West-mid		x	x	x			x	x
Kings Norton	West-mid							x	x
Worcester	West-mid		x	x	x			x	x
Wallsall	West-mid					x	x	x	x
West Brom	West-mid					x	x	x	x
Birmingham	West-mid	yes	x	x	x	x	x	x	x
Aston Manor	West-mid					x	x	x	x
Coventry	West-mid		x	x	x		x	x	x
Barnsley	Yorkshire								x
Bradford	Yorkshire	yes	x	x	x	x	x	x	x
Dewsbury	Yorkshire								x
Halifax	Yorkshire	yes	x	x	x	x	x	x	x
Huddersfield	Yorkshire	yes	x	x	x	x	x	x	x
Leeds	Yorkshire	yes	x	x	x	x	x	x	x
Sheffield	Yorkshire	yes	x	x	x	x	x	x	x
Wakefield	Yorkshire		x	x	x				x
Hull	Yorkshire	yes	x	x	x	x	x	x	x
York	Yorkshire		x	x	x		x		x
Middlesborough	Yorkshire				x	x	x	x	x
Rotherham	Yorkshire							x	x
Totals		33	75	75	77	45	58	80	97

Figure 8: Subcategories included in each of the 26 Series 1 industries

Chemicals and Drugs

Chemical manufacture
Drugs and Medical Instruments
Dye, paint manufacture

Instrument and jewelry makers

Gold and silver products
Instrument manufacture
Jewelry
Musical instrument maker
Watch makers

Metal and machinery makers

Anchor and chain manufacture
Arms manufacture Other than guns
Blacksmiths and whitesmiths
Brass working
Button maker
Copper working
Cutler
Engine and machine makers
File maker
Gun manufacture
Iron manufacture
Ironmonger
Lead working
Millwright
Nail manufacture
Other implements
Other metalworkers
Patternmakers, draughtsman, etc.
Pin, needle makers
Tin working
Tool makers
Wheelwright
Wire maker
Zinc working

Oil, soap, and rubber products

Oil colourman
Soap maker
Rubber and oil products
Other bone, etc. products
Tallow, candles

Dress

Glover
Haberdasher
Hatter (Hat Maker)
Hosiery Manufacture
Milliner
Rag gatherer
Seamstress, shirtmaker
Shoe Maker
Straw hat, plait manufacture
Tailor
Umbrella, etc. manufacture
Other misc. dress workers

Earthenware and bricks

Brickmaking
Earthenware dealers
Earthenware manufacture
Glass manufacture
Other misc. earthenware products

Leather and hair goods

Saddle makers
Leather goods
Hair goods
Tanner, fellmonger
Quill goods
Fur workers

Textiles

Carpet and rug manufacture
Cotton textile finishing
Cotton textile manufacture
Draper (wool)
Flax and linen
Fustian manufacture
Hemp, jute, sackcloth
Other cotton and flax workers
Other wool workers
Rope makers
Silk manufacture
Thread
Wool stapler
Wool textile manufacture
Worsted and stuff manufacture

Figure 9: Subcategories included in each of the 26 Series 1 industries (cont.)

Paper and publishing

Bookbinder
Lithographs, pictures, photographers
Other paper products
Paper manufacture
Paper stainer
Printer
Publisher
Stationary

Wood products & furniture

Carvings
Cooper
Misc. wood, bark products
Misc. wood manufactures
Sawyer
Timber
Wood furniture
Woodman

Water and gas service

Gasworks service
Waterworks service

Food processing and sales

Baker, confectioner
Butcher
Cheesemonger
Corn miller
Corn, vegetable merchant
Greengrocer
Grocer
Milk seller
Other food products
Other meat and fish dealer
Salt maker
Sugar refining

Shipbuilding

Shipbuilding

Vehicles

Coachmakers (including railway)
Cycle and motorcars

Construction

Bricklayer
Builders (construction)
Carpenter
Mason
Misc. construction
Painters and plumbers
Plasterers and paperhangers
Slater

Mining

Coal miner
Iron miner
Other clay, stone products
Other coal and coke workers
Other miners
Stone workers

Spirituuous drinks

Maltster
Brewer

Tobacco

Tobacconist

Figure 10: Subcategories included in each of the 26 Series 1 industries (cont.)

Professionals

Architect
 Art, theater, music related
 Engineers (civil)
 Law
 Musicians
 Scientists
 Surveyors
 Writers

Merchants, agents, accountants, etc.

Accountant
 Auctioneer
 Broker, agent, factor, etc.
 Merchant
 Misc. commercial occupations

Retail shopkeepers and salesmen

Hawker, peddler
 Pawnbroker
 Salesman
 Shopkeeper, general

Messengers, porters, warehousing

Messengers and porters
 Other messages (telegraph, etc.)
 Warehousing
 Coal heavers and porters

Railway transport

Railway transport

Road transport

Carter or hauler
 Coach, bus operator
 Toll collectors
 Tramways

Sea and canal transport

Ship transport
 Canal transport

General service

College, club, lodge service
 Domestic Service
 Hairdresser
 Innkeepers and Beersellers
 Laundry
 Lodging House Keepers
 Medical institution service
 Other Boarding and Lodging
 Other drinks
 Wine merchant

Figure 11: Series 1 occupation group national employment for 1851-1911







