

Supplement to BBCE *User Guide*: Website definitions, downloads, *Atlas of Entrepreneurship*, and linkage to I-CeM

Robert J. Bennett, Carry van Lieshout, Harry Smith and Piero Montebruno

rjb7@cam.ac.uk cv313@cam.ac.uk hjs57@cam.ac.uk pfm27@cam.ac.uk

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University of Cambridge, Department of Geography and Cambridge Group for the History of Population and Social Structure, Downing Place, Cambridge, CB2 3EN, UK.

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Comments are welcomed on this paper: contact the authors as above.

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Supplement to BBCE User Guide: Website definitions, downloads, *Atlas of Entrepreneurship*, and linkage to I-CeM

Robert J. Bennett, Carry van Lieshout, Harry Smith and Piero Monteburno

Working Paper 26: ESRC project ES/M010953: Drivers of Entrepreneurship and Small Businesses, University of Cambridge

1. Introduction

This paper gives supplemental information to help users link between the <https://www.bbce.uk/> website and its downloads, the website *Atlas of Entrepreneurship*, and the process of linking BBCE to I-CeM. The *British Business Census of Entrepreneurs* (BBCE) at the UK Data Archive/Service (UKDS) gives individual level data on business proprietors for censuses for England and Wales and Scotland 1851-1911.¹ A *User Guide* to BBCE outlines the details of each variable and how it interrelates with I-CeM.² BBCE uses transcripts of the censuses and coding of individuals derived from I-CeM, but adds the identification and coding of entrepreneurs, plus data enrichment, corrections, and infills of those missing in I-CeM. *The Integrated Census Microdata* (I-CeM) for 1851-1911 derives for the work of Schürer, Higgs and colleagues at Essex and Leicester Universities.³ BBCE was supported by the ESRC project ES/M010953 ‘Drivers of Entrepreneurship and Small Businesses’ and other grants noted in the acknowledgements. Major aspects of interpretation of the data have been reported in Bennett et al. (2019) *The Age of Entrepreneurship* and other

¹ Bennett, Robert J., Smith, van Lieshout, Carry, Monteburno, Piero and Newton, Gill (2020), *The British Business Census of Entrepreneurs 1851-1911 (BBCE)* [data collection]. UK Data Service, SN: pending.

² Bennett, Robert J., Smith, van Lieshout, Carry, Monteburno, Piero and Newton, Gill (2020), *The British Business Census of Entrepreneurs 1851-1911 (BBCE): User Guide*, <https://doi.org/10.17863/CAM.47126>

³ Schurer, K., Higgs, E. (2014). Integrated Census Microdata (I-CeM): 1851-1911. [data collection]. UK Data Service. SN: 7481, <http://doi.org/10.5255/UKDA-SN-7481-1>. A user guide and manual to the I-CeM data is available as E. Higgs, C. Jones, K. Schürer and A. Wilkinson, *The Integrated Census Microdata (I-CeM) Guide*, (Colchester, 2013) <https://www1.essex.ac.uk/history/research/icem/documentation.html>. Further details on the I-CeM database and related resources at: <https://www.essex.ac.uk/history/research/icem/>. I-CeM database creation supported by ESRC grant RES-062-23-1629.

publications.⁴ The Supplement provided in this paper will help other researchers using BBCE and www.bbce.uk data to replicate that analysis and develop new points of departure.

This paper has two objectives:

1. To guide users on the precise definitions used for the BBCE website and *Atlas of Entrepreneurship* (Section 2); and
2. To offer additional guidance to that in the BBCE *User Guide* on linkage with I-CeM (Section 3).

Each is discussed below.

2. Website www.bbce.uk data definitions and downloads

The BBCE website does not give downloads of data on individuals in the census (which have to be obtained via I-CeM special licence). It gives aggregates. The BBCE website aims to help users understand the potential of the data through overview pages, data downloads, and an interactive *Atlas of Entrepreneurship* based on the spatial resolution of Counties, Registration Sub-Districts (RSDs) in England and Wales, and parishes in Scotland. All website material is for aggregates. For these aggregates the individual BBCE data has been manipulated to give the most valid indicators for the spatial level concerned. If users go to the original BBCE data they can utilise whatever definitions are desired. But on the website the most obvious choices have already been made. To help interpret the website data the following definitions are needed:

2.1. Spatial units used in maps and downloads

All spatial mapping on the BBCE website is generalised to simplify the original boundaries to speed up online use. The mapping and downloads are defined as follows:

⁴ Bennett, Robert J., Smith, van Lieshout, Carry, Montebruno, Piero and Newton, Gill (2019) *The Age of Entrepreneurship: Business proprietors, self-employment and corporations since 1851*, Routledge, London. <https://doi.org/10.4324/9781315160375>

- *Counties in England and Wales and Scotland* are almost exactly comparable units over time.
- *Registration Sub-Districts (RSDs) in England and Wales* change their geography over time. The codes for the original units are given in I-CeM. The mapping and downloadable GIS files are based on simplified ‘continuous RSDs’ developed by Joe Day which ‘smooth’ differences between years.⁵
- *Parishes in Scotland* are continuous parishes with codes given in I-CeM. These parishes are aggregates of the original parish boundaries to include earlier units in subsequent larger units after boundary changes have occurred. This makes the spatial mapping and data exactly comparable between one year and another with no effects of boundary changes. However, the definitions developed by Corinne Roughley run for two periods - 1851-91, and 1891-1901 – because boundary changes are considerable in the 1890s.⁶ Hence, although continuous for each period, there is some discontinuity over 1891-1901 which is visible in the Atlas and other maps.
- *Regions* are not available directly in the website downloads, but can be constructed from the county data using the definitions provided on the website. This is for the main regions used over time: Census divisions; Clive Lee’s (1971) regions,⁷ Standard Statistical Regions; Economic Planning Regions; and NUTS 1.
- *Towns derive from the definitions given by Law and Robson*, but restricted to England and Wales towns of 10,000 population and over. These have been developed into digital resources for England and Wales towns,⁸ and Scottish Burghs (defined from the census parish codes as in WPs 6 and 20).

⁵ Day, J.D. (2016) *Registration sub-district boundaries for England and Wales 1851-1911*; as developed for the 'Atlas of Victorian Fertility Decline' project (PI: A.M. Reid) funded by ESRC (ES/L015463/1).

⁶ Corinne Roughley (2019a) *Scotland's Parish Populations: parish boundaries 1755-1891*, and Corinne Roughley (2019b) *Scotland's Parish Populations: parish boundaries 1891-1911*, deposited at National Records of Scotland.

⁷ Lee, C. H. (1971) *Regional Economic Growth in the UK since the 1880s*, McGraw Hill, London.

⁸ See WP 6; Law, C. M. (1967) The growth of urban population in England and Wales, 1801-1911, *Transactions, Institute of British Geographers*, 41, 125-43; Robson, B.T. (1973) *Urban Growth: An approach*, Methuen, London.

2.2. Data weighting

Considerable effort has been made in constructing BBCE to align the census data extracted, and the definitions used, over time: both between the origin censuses 1851-1911, and with modern definitions of self-employment for employers and own account proprietors. The aggregates displayed on the website maps and available from the downloads make use of five main alignments:

- *Archival loss of data in 1861*, which accounts for almost 4% of the original census data, has been compensated for by re-weighting areas with missing information (see WP 23).
- *Extensive non-responses in the censuses 1891-1911* have been reweighted using modern methods of post-survey data editing.⁹
- *Contemporary criticisms of the accuracy of the responses to the 1891* census have been overcome by identifying the areas of misallocation and reweighting.¹⁰
- *Non-responses to entrepreneur status 1851-81* resulting from deficient census question design, and inconsistency with subsequent and modern definitions of the self-employed, have been reweighted by post-survey data supplementation (using BBCE definitions NUM in England and Wales, and IND in Scotland).¹¹
- *Farmer responses in 1851-81 censuses insufficiently distinguished between employer, own account and worker*. The original responses have been adjusted using RSD spatial and individual-level demographic data. Farmers mapped are purely for the census category of ‘farmers and graziers’ (I-CeM Occode 173). Sector downloads are for all agriculture.

2.3. Demographic and employment status aggregations

- **Sex.** Census clerical processing assigned all individuals a sex for publications of census tables. However, sex was not recorded in the original census responses by householders and has to be inferred from the census transcripts for their relationships to the head of house (by terms such as ‘son’, ‘daughter’, ‘niece’ etc.) and their personal names. These codings were undertaken in I-CeM and understandably are not

⁹ See: Bennett, R.J., Smith, H. and Montebruno, P. (2018) The Population of Non-Corporate Business Proprietors in England and Wales 1891-1911, *Business History*, 20. doi.org/10.1080/00076791.2018.1534959

¹⁰ Non-response and misallocations for 1891-1911 are corrected by a combined set of weights: see WP 11.

¹¹ The alternative methods used are given in WP 9, WP 9.2, WP 20.

always accurate. Some have been left as ‘U’ for unidentified.¹² The mapping and downloads that separate males and females omit ‘U’ and hence differ from the total populations of the locations to which they relate which include ‘U’.

- **Age and marital status.** There are few is-codings in I-CeM that have been corrected in BBCE for age and marital status (see WP 21) which are used in the downloads.
- **Occupations and employment status.** BBCE uses ‘cleaned’ occupational data for both entrepreneurs and workers. This results in very large numbers of re-codes from I-CeM (several millions).¹³ Occupations and demographics are key variables that are used in assigning individuals to their most probable employment statuses – as employers, own account, or workers. All website and BBCE data uses these recodes for occupation and status: for entrepreneurs these are as in BBCE; for workers the recoded raw data are given by separate downloads.¹⁴ The occupations and statuses in BBCE therefore differ from I-CeM and will produce different results.

2.4. Sectors

BBCE gives two aggregated definitions for business sectors derived from the I-CeM census occupational codes.¹⁵ The sectors given on the website and downloads are for the EA17 definition.

- **Sector downloads.** The classification into 17 aggregate sectors gives entrepreneurs (as well as workers) in the first 13 categories. These 13 sectors are used in the graphs on the website. The remaining categories 14-17 are sectors composed entirely of workers such as domestic staff, civil servants, military personnel, and also the economically inactive, those whose income was entirely from investments (‘own means’), owners of property and landed estates etc. The downloads for sectors 14-16 only give workers, and sector 17 (Rank status, unoccupied) has been omitted. The full BBCE

¹² See *I-CeM Guide*. The data provided on the website includes BBCE corrections to sex coding as a result of inspecting the original census records (see WP 21, and *BBCE Guide*); these are small in total number.

¹³ See WP 1, 3, 4, 5, 9, 9.2, 20.

¹⁴ See downloads with WP 9, 9.2 and 20; all BBCE coding is to economic activity; I-CeM also uses rank and gives priority to farm over other coding as used by census clerks, It also does not distinguish multiple occupations, which are coded as portfolios in BBCE.

¹⁵ EA17 and EA51; based on a Booth-Armstrong simplification defined in WP 5. The original I-CeM codes at 797 level are given in the *I-CeM User Guide*. The detailed definitions used, and their relation to other sector coding for industry markets or occupations (such as SIC, Feinstein, HISCO and PST) is given in WP 5 and downloads on the BBCE site.

data give all individuals. There is a handful of entrepreneurs for some years in sectors 14-17 omitted on the website; these are ambiguous or complex cases in notionally non-entrepreneurial occupations where individuals state employees. They can be sourced from BBCE if desired.

2.5. Versions

The data downloads on the website and the maps in the Atlas are all based on data from BBCE, I-CeM, and BBCE supplemental files given in Working Papers. The BBCE, website, and downloads use demographic, occupational, employment status, and spatial data recoded and updated from I-CeM which may not exactly replicate data in current UKDA I-CeM or in future versions.

- The version of the I-CeM data used in BBCE, which is referred to as Provisional I-CeM v. 2 in most Working Papers, is to be deposited with the UK Data Service after further enhancements by Kevin Schürer later in 2020. An earlier reference to the I-CeM version used for BBCE and within Campop was: K. Schürer, E. Higgs, A.M. Reid, E.M Garrett (2016) *Integrated Census Microdata, 1851-1911, version V. 2 (I-CeM.2)*.
- As a result of these version changes the data on the website and downloads will differ from I-CeM v.1 at UKDS,¹⁶ and to a lesser extent from the I-CeM v. 2 when it is deposited at UKDS. This means that precise replication of the downloaded data from future versions will not be possible. However, it is expected that the differences of BBCE from I-CeM v. 2 will be minor, mainly effecting improvements of a few spatial coding of parishes and perhaps a handful of RSDs. Researchers using the BBCE data and downloads from the website data will be able to achieve near-replication of the analysis reported in Bennett et al. (2019) *The Age of Entrepreneurship* and other publications.
- Users of BBCE and I-CeM as linked resources for individuals will be able to check replication against the downloads provided - bearing in mind the definitions used for processing listed above.

¹⁶ i.e. from Schürer, K. and Higgs, E. (2014) *I-CeM*: SN: 7481, <http://doi.org/10.5255/UKDA-SN-7481-1>

3. Linking BBCE and I-CeM

Using the BBCE data deposit at UKDS and linking this with I-CeM also at UKDS is essential if users wish to access the individual data in the censuses. The *BBCE User Guide* summarises the differences between BBCE and I-CeM and how to join them together. The aim here is to give a summary step-by-step checklist.

A. Normal access (anonymised: no access to names or addresses of census respondents)

1. Register as a user at UKDS to use I-CeM and BBCE anonymised version available online to accredited researchers

<https://ukdataservice.ac.uk/get-data/how-to-access.aspx>

Access to I-CeM:

<https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=7481>

2. Check versions of I-CeM available: use most recent and note which is being used
3. Access and download I-CeM and BBCE
4. Each database uses the same RecID to identify individuals (and this RecID is retained in all versions of I-CeM and BBCE). Link I-CeM and BBCE using the RecID. This gives one integrated database of all individuals for all variables in the two databases.
5. In BBCE all RecIDs have been checked to remove duplicates, recode occupation and employment statuses to accurate economic status, recode a few ages, sexes and marital status, and add a few individuals missing in I-CeM. If BBCE codes are solely used this will automatically remove any duplicates and miscodes from I-CeM v.1. New versions of I-CeM should include these improvements.
6. It is essential that users BBCE use the corrected employment status and not that in for 1891-1911 in I-CeM: variable EMPSTATUS; this has been corrected from I-CeM and weighted to compensate for various biases.
7. Using BBCE ENTOCCODE will often be preferable to I-CeM occupation categories because BBCE emphasises economic activity compared to other types of occupational coding in I-CeM.
8. If desired, users adopt the improved sex codes, age, marital status, and use the additional people available in BBCE; differences given in downloads with WP 21.
9. BBCE gives data for 1871 for employers and a few own account individuals with I-CeM equivalent coding, occupational status and birthplaces that are not available in I-

CeM at all (as this has no I-CeM 1871 data, and future versions are unlikely to have occupational status or birthplaces). The 1871 data can be included by users if required, but users should take note that the data are more limited (not full population coverage) and not all I-CeM variables were coded (see BBCE User *Guide*).

10. Apply re-weighting to analyses for 1891-1911 to compensate for non-response and misallocation biases. Already in-built in EMPSTATUS. Weights with WP 11.
11. Weights to compensate for archivally lost data in 1861. Weights with WP 23.
12. *Estimated* employment status over 1851-81 as employers and own account RecIDs can be derived from BBCE (includes all sectors: farm and non-farm):
 - EMPSTATUS_NUM: more for aggregate numbers, but not for individuals as some are randomly assigned (only available for England and Wales)
 - EMPSTATUS_IND: most appropriate for individual identifiers (available for Scotland as well as England and Wales)
13. Worker status has been recoded by BBCE for economic occupation and employment status, but is given by RecID as separate downloads. The RecIDs depend on the estimates used to identify employers and own account; the workers are the (very large) residual.
 - Workers by RecID and Ocode for EMPSTATUS_NUM (given with WP 9)
England and Wales (only): less accurate as involves some random assignment
 - Workers by RecID and Ocode for EMPSTATUS_IND (given with WP 9.2 and WP 20)
England and Wales and Scotland
14. All other unique data to BBCE does not require choices against I-CeM: e.g. for workforce size, portfolio business codes, business partnerships, business directorships, sector coding, and all 1871 data.

A. Special licence access (full access to names and addresses of census respondents)

- As above for steps 1-3
- 1. Register as a user at UKDS to use I-CeM and BBCE
- 2. Check versions of I-CeM available: use most recent and note which is being used
- 3. Access and download I-CeM and BBCE
- 4. Apply to UKDS for access to the full version via secure data access arrangements; see

https://www1.essex.ac.uk/history/research/icem/access_to_data.html

Actual applications must be made through UKDS; follow links from

<https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=7856>

Note this link differs from normal access

5. Follow the rest of steps for normal access 4-13 above.

Additional materials

Other data available as downloads but not included in the BBCE data deposit can be found on the BBCE project website and www.bbce.uk

<https://www.campop.geog.cam.ac.uk/research/projects/driversofentrepreneurship/>

<https://www.bbce.uk/>

These include:

- Data download of sector classification file (WP 5)
- Data download of extended sector classification file with Feinstein definitions (WP 5)
- Downloadable classification of environments of entrepreneurship (factor analysis WP 10) by RSD
- Downloadable classification of occupational classification all people (factor analysis WP 9) by RSD
- Data download of classification of portfolios by workforce size, split between different business in 1881 <https://doi.org/10.17863/CAM.49853>

Replication and testing of estimation methods by the IND and NUM methods can use files of the decision process and farm allocations

- Downloadable decisions for NUM method (WP 9)
- Downloadable file of workers from NUM method E&W (WP 9)
- Data download of farm cut-offs England and Wales (WP 9)
- Downloadable decisions for IND method England and Wales (WP 9.2)
- Downloadable decisions for IND method Scotland (WP 20)
- Data download of farm cut-offs Scotland (WP 20)
- Tutorial guide to decision process for data supplementation for 1851-81 used in WPs 9, 9.2, and 20 (WP 19).

Additional parish codes have been constructed by the BBCE team for:

- Transport networks for railways, waterways, roads, and ports (WP 16)
- Historical agricultural land capacity (WP 17)

4. Conclusion

This paper provides users with the background to the data used for the www.bbce.uk website and how to link BBCE and I-CeM. It gives the definitions of the spatial units used for mapping and the variables used for the BBCE and I-CeM data. It is particularly important to take into account the ways in which BBCE and I-CeM need to be linked and the choices that have to be made of the precise format of the data to be used.

The paper gives a step-by-step guide to how the BBCE data deposit should be linked with I-CeM using downloads from UKDS. This can be for normal access to anonymised data, or Special Licence access (to names and addresses of census respondents). A checklist is given of the supplementary data downloads and other resources for linking data, interpreting it, and developing alternative definitions and uses of the data.

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The census database used for 1851-61 and 1881-1911 derives from Schürer, K., Higgs, E. (2014). *Integrated Census Microdata (I-CeM): 1851-1911*. [data collection]. UK Data

Service. SN: 7481, <http://doi.org/10.5255/UKDA-SN-7481-1>; see also E. Higgs, C. Jones, K. Schürer and A. Wilkinson, *Integrated Census Microdata (I-CeM) Guide*, 2nd ed. (Colchester: Department of History, University of Essex, 2015). The census data for 1871 was provided by S&N; see WP 12. An update version of I-CeM is expected to contain the enhancements used for BBCE.

The BBCE project is based at the Cambridge Group for the History of Population and Social Structure, in the Department of Geography, University of Cambridge. The BBCE core team was composed of Bob Bennett (PI), Harry Smith, Carry van Lieshout, and Piero Montebruno; and Gill Newton who worked on the Leverhulme pilot project. Other direct contributors to BBCE database and analysis supported by the ESRC the research grants were Joe Day, Dragana Radicic, Max Satchell, and Sophy Arulanantham, as well as other research assistants, co-investigators, supporters, partners and collaborators whose support we are very gratefully acknowledge. Full listing on project website.

The **Atlas of Entrepreneurship** was supported by the ESRC (grant ES/M010953). The Atlas was created by Martin Lucas-Smith, webmaster Department of Geography, who wrote the additional code required to adapt his code for the *Atlas of Victorian Fertility Decline* project (PI: A.M. Reid), funded by ESRC (grant ES/L015463/1) populationspast.org LINK. We are very grateful to Alice Reid, Joe Day and the populationspast team for advice and allowing use of this resource. Carry van Lieshout prepared all the data for the Atlas maps using the BBCE data resources. Code for the Atlas is open source, and can be found on the CAMPOP Github repository.

The maps displayed on the BBCE website for Scotland use GIS boundary files for continuous parishes (Conpar) derived from Corinne Roughley (2019a) *Scotland's Parish Populations: parish boundaries 1755-1891*, and Corinne Roughley (2019b) *Scotland's Parish Populations: parish boundaries 1891-1911*, deposited at National Records of Scotland.

The maps for England and Wales use RSD boundary files created for the *Atlas of Victorian Fertility Decline* project (PI: A.M. Reid) funded by ESRC (ES/L015463/1); the boundary data were created by Joe Day. Citation: Day, J.D. *Registration sub-district boundaries for England and Wales 1851-1911* (2016). This Day dataset has been created using Satchell,

A.E.M., Kitson, P.M.K., Newton, G.H., Shaw-Taylor, L., and Wrigley E.A., 1851 *England and Wales census parishes, townships and places* (2016).

The Satchell et al. dataset is an enhanced version of Burton, N, Westwood J., and Carter P., *GIS of the ancient parishes of England and Wales, 1500-1850*. Colchester, Essex: UK Data Archive (May 2004), SN 4828. This is a GIS version of Kain, R.J.P., and Oliver, R.R., *Historic parishes of England and Wales: An electronic map of boundaries before 1850 with a gazetteer and metadata*. Colchester, Essex: UK Data Archive, May, 2001.

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- Bennett, Robert J., Smith, van Lieshout, Carry, Montebruno, Piero and Newton, Gill (2020), *The British Business Census of Entrepreneurs 1851-1911 (BBCE): User Guide*, <https://doi.org/10.17863/CAM.47126> **BBCE USER GUIDE**
- Bennett, R. J., Smith, H., Montebruno, P. (2018) 'The Population of Non-corporate Business Proprietors in England and Wales 1891–1911', *Business History*, <https://doi.org/10.1080/00076791.2018.1534959>
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Schürer, K., Higgs, E., Reid, A.M. and Garrett, E.M. (2016) *Integrated Census Microdata, 1851-1911, User Guide version V. 2 (I-CeM.2)*: Schürer and Campop provisional version 2.

Other Working Papers:

Working paper series: ESRC project ES/M010953: '*Drivers of Entrepreneurship and Small Business*', University of Cambridge, Department of Geography and Cambridge Group for the History of Population and Social Structure.

- WP 1: Bennett, Robert J., Smith Harry J., van Lieshout, Carry, and Newton, Gill (2017) *Drivers of Entrepreneurship and Small Businesses: Project overview and database design*. <https://doi.org/10.17863/CAM.9508>
- WP 2: Bennett, Robert J., Smith Harry J. and van Lieshout, Carry (2017) *Employers and the self-employed in the censuses 1851-1911: The census as a source for identifying entrepreneurs, business numbers and size distribution*. <https://doi.org/10.17863/CAM.9640>
- WP 3: van Lieshout, Carry, Bennett, Robert J., Smith, Harry J. and Newton, Gill (2017) *Identifying businesses and entrepreneurs in the Censuses 1851-1881*. <https://doi.org/10.17863/CAM.9639>
- WP 4: Smith, Harry J., Bennett, Robert J., and van Lieshout, Carry (2017) *Extracting entrepreneurs from the Censuses, 1891-1911*. <https://doi.org/10.17863/CAM.9638>
- WP 5: Bennett, Robert J., Smith Harry J., van Lieshout, Carry, and Newton, Gill (2017) *Business sectors, occupations and aggregations of census data 1851-1911*. <https://doi.org/10.17863/CAM.9874>
- WP 6: Smith, Harry J. and Bennett, Robert J. (2017) *Urban-Rural Classification using Census data, 1851-1911*. <https://doi.org/10.17863/CAM.15763>
- WP 7: Smith, Harry, Bennett, Robert J., and Radicic, Dragana (2017) *Classification of towns in 1891 using factor analysis*. <https://doi.org/10.17863/CAM.15767>
- WP 8: Bennett, Robert J., Smith, Harry, and Radicic, Dragana (2017) *Classification of occupations for economically active: Factor analysis of Registration Sub-Districts (RSDs) in 1891*. <https://doi.org/10.17863/CAM.15764>
- WP 9: Bennett, Robert, J., Montebruno, Piero, Smith, Harry, and van Lieshout, Carry (2018) *Reconstructing entrepreneurship and business numbers for censuses 1851-81*. <https://doi.org/10.17863/CAM.37738>
- WP 9.2: Bennett, Robert, J., Montebruno, Piero, Smith, Harry, and van Lieshout, Carry (2019) *Reconstructing business proprietor responses for censuses 1851-81: a tailored logit cut-off method*.
- WP 10: Bennett, Robert, J., Smith, Harry and Radicic, Dragana (2018) *Classification of environments of entrepreneurship: Factor analysis of Registration Sub-Districts (RSDs) in 1891*. <https://doi.org/10.17863/CAM.26386>
- WP 11: Montebruno, Piero (2018) *Adjustment Weights 1891-1911: Weights to adjust entrepreneur numbers for non-response and misallocation bias in Censuses 1891-1911*. <https://doi.org/10.17863/CAM.26378>
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