

The Skills Imperative 2035: *Occupational Outlook - Long-run employment prospects for the UK – Revised projections*

Working paper 2d

Rob Wilson, Derek Bosworth, Luke Bosworth, Jeisson Cardenas-Rubio, Rosie Day - Institute for Employment Research, University of Warwick



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Published March 2024

by the National Foundation for Educational Research,
The Mere, Upton Park, Slough, Berkshire SL1 2DQ
www.nfer.ac.uk

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Registered Charity No. 313392

ISBN: 978-1-916567-02-3

How to cite this publication:

Wilson, R., Bosworth, D., Bosworth, L., Cardenas-Rubio, J. and Day, R. (2024). *The Skills Imperative 2035: Occupational Outlook – Long run employment prospects for the UK – Revised projections*. Working paper 2d. Slough: NFER.

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Preface and Acknowledgements

The authors are grateful to the Nuffield Foundation for funding this research.

Thanks are due to Luke Boccock of NFER for helpful suggestions.



The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. It also funds student programmes that provide opportunities for young people to develop skills in quantitative and scientific methods. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics and the Ada Lovelace Institute. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation. Visit www.nuffieldfoundation.org

Executive Summary

ONS coding errors in the LFS

In July 2022 the Office for National Statistics (ONS) announced that they had made errors coding occupational data in the Labour Force Survey (LFS) for 2021. This error was subsequently corrected and the ONS published revised LFS data for 2021 in summer 2023.

Implications of the LFS coding errors on the Skills Imperative 2035 employment projections

LFS data up to 2021 played a central role in the production of the Skills Imperative 2035 occupational employment projections. Consequently, NFER, the Nuffield Foundation and Warwick IER took the decision to produce a revised set of projections. This Working Paper describes these **New** projections and compares them with the **Old** (i.e. original) ones.

ONS originally expected that the correction would only affect a limited number of occupations, with just a modest impact on broader groups of occupations in the Standard Occupational Classification (SOC). However, this was not the case and corrected LFS data for 2021 had a more significant impact on estimates of the size of each occupation, including at the 1- and 2-digit levels of the Standard Occupational Classification (SOC), as well as at the more detailed 4-digit level. Inevitably, this affects our employment projections through to 2035.

Revising the projections

This Working Paper presents revised occupational employment projections, based on the corrected LFS data published by ONS for 2021. These revised projections utilise the same multi-sectoral

macroeconomic model developed for the original employment projections by Cambridge Econometrics.

The revised projections to 2035

The **New** results are compared with the **Old** results at 1-, 2- and 4 digit levels, focussing first on the structure of occupational employment in 2021 and then on the implications going forward to 2035. The impact of the error on historical estimates of occupational employment levels in 2021 is more significant than ONS initially indicated. However, the impact on historical and projected future *trends* in employment is modest. Therefore, the overall effect of the errors on our employment projections is fairly minimal. However, the errors do affect the scale of change projected in each occupation's share of UK employment, and the degree to which the change in share differs between the new and old projections varies by occupational group.

Recommendations

1. The overall effect of the LFS coding errors on our employment projections is fairly minimal. The projections indicate that the economy and the structure of employment will change significantly between now and 2035. There will be continued growth in demand for more skilled white-collar workers.
2. The Government needs to recognise the scale of projected changes and the set of challenges these will create, and start preparing for this now.
3. Employers and industry bodies also need to assess the implications of the projections for their own areas of interest and, in particular to note the trends in business critical occupations that they will need in future, and start planning what actions they need to take.

1 Introduction

ONS Miscoding problems

In 2022 the Office for National Statistics (ONS) revealed that there had been errors in how Labour Force Survey (LFS) data had been coded by occupation. This coding process used the newly introduced Standard Occupational Classification 2020 (SOC2020), which replaced the previous SOC2010 system.

Given the central importance of the LFS data in our employment projections for *The Skills Imperative 2035 (SI35)*,¹ it was clear that this would have significant implications for the results originally published in October 2022.

ONS have now published revised data and made these available for detailed analysis. This Working Paper provides an assessment of how this has affected the detailed occupational projections originally published.

It is important to note that labour market analysis and projections are part of a continuing process. The results are always dependent on the latest data available when the work is undertaken, and subject to change, if and when new information becomes available.

The structure of the rest of this report is as follows:

Chapter 2 provides a brief summary of the ONS announcement and subsequent publication of revised data.

Chapter 3 describes the work undertaken by IER to deal with the corrections to the LFS data.

Chapter 4 presents a summary of the corrected results, including a detailed comparison at 4-digit level.

ONS statements about the recoding problem

On July 18, 2022, the Office for National Statistics (ONS) reported an error in coding occupational data in the LFS due to the transition from the SOC2010 to the SOC2020 classification, potentially affecting half of the detailed SOC codes. This error predominantly impacted occupational variables and the NS-SEC (National Statistics Socio-economic Classification), with varying degrees of impact across the four-digit SOC codes, generally contained within similar job categories.

ONS made an initial estimate of the likely impact as follows:

- Low (<5% affected): 113 codes (27.4%)
- Moderate (5-50% affected): 90 codes (21.8%)
- High (>50% affected): 209 codes (50.7%)

¹ See Wilson, R, Hillary, J, Bosworth, D, Bosworth, L, Cardenas-Rubio, J, Day, R, Patel, S, Bui, H, Lin, X, Seymour, D, Thoung C, (2022). *The Skills Imperative 2035: Occupational Outlook - Long-run employment prospects for the UK, Working Paper 2*, Slough: NFER.

They presented a detailed table showing estimated impact by SOC2020 4-digit category. This is presented in Annex A.

Due to the occupational miscoding, the ONS advised caution in using data from the Labour Force Survey (LFS) and Annual Population Survey (APS) post-January 2021.

Recoding involved an automated algorithm and, if needed, clerical recoding for cases below the confidence threshold. Interviewers used a specialised interface to select codes, while clerical coders had full access to the coding frame.

ONS stated that the revised data might introduce new discontinuities, highlighted by comparisons across different periods and between original and revised early 2021 data. Notably, 43% of codes showed revised totals closer to the 2019-2020 average, with significant impacts on 26% of codes. However, 42% showed greater deviations in revised totals, particularly within highly impacted codes (18%) and those with low to moderate impact (23%).

Following these corrections, ONS stated that the data collected post-October 2022 were unaffected, all significantly impacted SOC codes having been recoded, with updates to derived variables and population weight recalibrations.

Subsequently, ONS published revised LFS data for 2021 in July 2023. These showed many differences compared with the originally published data, including some significant difference at the 1- and 2-digit levels. Further details of this can also be found in Annex A.

Sources:

July 2022 ONS statement announcing an issue with occupational coding:

<https://www.ons.gov.uk/news/statementsandletters/occupationaldatainonssurveys>

September 2022 ONS statement detailing estimated impact of the recoding:

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/theimpactofmiscodingofoccupationaldatainofficeforationalstatisticsocialsurveysuk/2022-09-26>

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/impactatfourdigitstandardoccupationalclassificationlevel>

July 2023 ONS statement following recoding of LFS data:

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/revisionofmiscodedoccupationaldataintheonslabourforcesurveyuk/january2021toseptember2022>.

2 Production of revised projections

Key tasks

In September 2023 IER was commissioned by NFER to produce revised occupational employment estimates and projections, taking into account the revisions to the LFS estimates, following the recoding.

The key tasks to be undertaken were as follows:

- Process the corrected LFS data into the relevant inputs required to update the projections
- Rerun the various programmes, using the revised inputs to create corrected occupational employment estimates at 2-, and then 4-digit levels
- Reassess the implications for the projections forward to 2035, again at 2- and then 4-digit levels
- Check and quality control the revised estimates and projections
- Produce revised tables and charts, as included in the various published reports
- Produce revised database and workbooks (the minimum required by the University of Sheffield, who produced the skills projections)
- Produce minimal documentation to explain what has been done and summarise the main differences compared with the original results.

Caveats

Note that we have not undertaken a complete update of all the reports produced in the original project, which would require considerably more resources.

Note also that the revised occupational employment projections retain the same Macroeconomic and Sectoral employment scenario as used in the previously published reports.

LFS data for four quarters of 2021 and four quarters of 2022 were combined to compute shares of 4-digit occupations within 2-digit groups for all industries. These shares were then applied to all industries and for all years (2022-2035).

In principle, LFS data prior to 2021 can be converted to SOC2020 using the crosswalk between SOC2010-SOC2020 developed by the ONS. This has been done for the main database at the 2 digit-level of SOC2020, but not at the 4-digit level.

Initial results were scrutinised in October 2023. It was apparent that there were significant differences, not just at the 4-digit level but also at 1- and 2-digit levels. This was apparently at odds with official ONS statements which suggested only minor impact at those levels.

Other issues with the published LFS data were also identified, which initially led to a misclassification of a number of 4-digit occupations. A dialogue was opened up with ONS to discuss these matters. These issues were finally resolved at the beginning of December 2023.

Revised results were then produced, as described in the next Chapter.

3 Revised projections

Main outputs

The main outputs of this new stage of the project include:

1. Corrected 4-digit occupational employment projections to 2035
2. Various analyses of the corrected results, at 1-, 2- and 4-digit levels, including:
 - a. 1- and 2-digit tables and charts for the corrected *Baseline*
 - b. 1- and 2-digit comparisons between original and corrected results
 - c. 4-digit comparisons between original and corrected results

Revised projections at the 1-digit level of SOC 2020

Table 1 and Figure 1 present a summary of our analysis of the differences between these new revised ('corrected') occupational employment estimates and projections and the old 'original' projections for the UK at the 1-digit level.

It is important to note that the aggregate employment totals are the same, so any differences are zero-sum – i.e. any increase in one occupational group must be balanced by corresponding decreases in other occupational groups.

Table 1 presents the differences between the new and old estimates for 2021 at the 1-digit SOC (major group) level. There are no differences for years prior to 2021 since the historic estimates have not

been revised. Comparisons of the new with the old projections for 2021 following the re-coding of the LFS reveals that there are increases for SOC1 (Managers, directors and senior officials) of around 250,000 jobs, for SOC6 (Caring, leisure and other service) of 140,000 jobs, and SOC8 (Process, plant and machine operatives) of around 152,000 jobs. These are balanced by decreases in SOC3 (Associate professional occupations) of 302,000 jobs and SOC4 (Administrative and secretarial) of 224,000 jobs. Changes in the other 1-digit SOC groups are negligible.

Figure 1 presents the differences between the new and old projections at the 1-digit SOC (major group) level for 2021 and 2035. This illustrates that these differences are projected to widen as we move forward to 2035. Compared to the old projections, there are 394,000 more jobs in SOC1, 217,000 more in SOC6, and 227,000 more in SOC8 in 2035, counterbalanced by 454,000 fewer jobs in SOC3 and 342,000 fewer in SOC4.

The results are broadly consistent with the *anticipated* impact of re-coding that ONS were expecting. For example, for SOC2, there is a reallocation from sub-group 21 to sub-groups 22, 23, and 24, resulting in only a small net change in SOC2 overall as shown in Figure 1. Similarly, for SOC9, there is a large switch from sub-group 91 to sub-group 92, but the net change in SOC9 is small in total, as shown in Figure 1. In contrast, for SOC1, the changes are positive for both sub-groups. However, the differences are rather more substantial than ONS initially indicated.

Revised results at 2-digit level

The differences at the 2-digit (sub-major group level) between the original and corrected estimates for 2021 are shown in Table 2. Differences between the new and the old projections are presented in Figure 2. Annex B also presents a graphical comparison of the original (old) and revised (new) projections at the 2-digit level of SOC 2020. The dotted lines are based on the LFS historical data, the solid lines show the new projections, and the dashed lines are the old ones. There are some significant differences at the 2-digit level between the old and new results, especially for 2021, which reflects ONS statements that their recoding had introduced some new inconsistencies.

As noted above, the impact of the ONS revisions was rather more substantial than initially expected, covering a much larger range of occupations. This was not a complete surprise: ONS had indicated that they had made corrections across the board; and this is a zero-sum game, with occupational shares having to sum to 100%.

Main impacts at 2-digit level of SOC2020

At the 2-digit level, the sub-major groups most affected are:

- 12 Other managers and proprietors
- 21 Science, research, engineering and technology professionals
- 32 Health and social care associate professionals
- 41 Administrative occupations

- 91 Elementary trades and related occupations
- 92 Elementary administration and service occupations

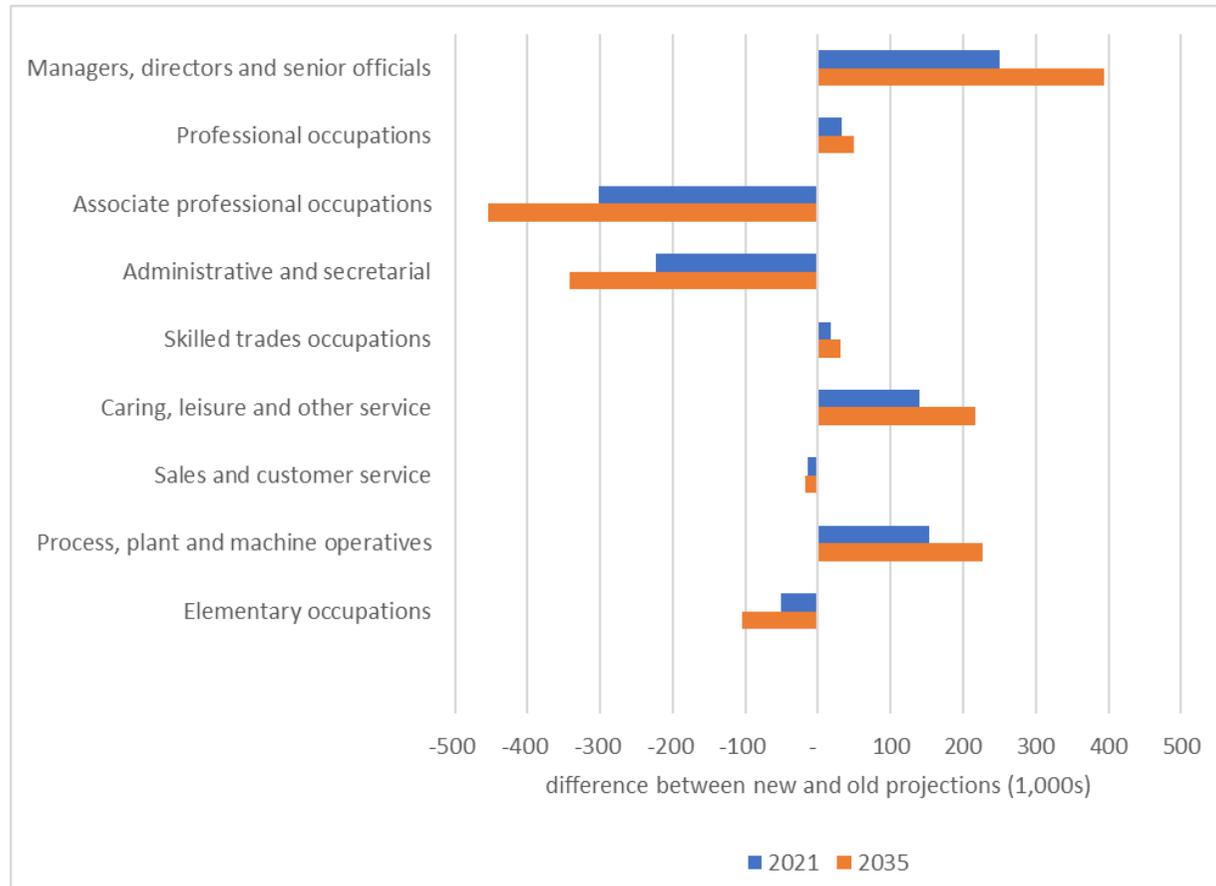
However, all the occupations are affected to some degree. Again, these differences widen as we move towards 2035.

Table 1 Differences in 1-digit SOC2020 groups between new and old Baseline results, 2021 (000s)

Levels (000s)	Baseline		Difference	
	Original	Corrected	(000s)	(%)
Managers, directors and senior officials	3,412	3,662	250	7.3%
Professional occupations	8,424	8,457	33	0.4%
Associate professional occupations	4,836	4,535	- 302	-6.2%
Administrative and secretarial	3,827	3,604	- 224	-5.8%
Skilled trades occupations	3,058	3,076	18	0.6%
Caring, leisure and other service	3,087	3,226	140	4.5%
Sales and customer service	2,788	2,774	- 15	-0.5%
Process, plant and machine operatives	2,039	2,192	152	7.5%
Elementary occupations	3,667	3,616	- 52	-1.4%
All occupations	35,140	35,140	0	0.0%

Source: IER estimates from SI35 Original and SI35 Corrected.

Figure 1 Differences in 1-digit SOC2020 group projections 2021 and 2035 (000s)



Source: IER estimates from SI35 Original and SI35 Corrected.

Table 2 Differences in 2-digit SOC2020 groups between new and old Baseline results, 2021 (000s)

Levels (000s)	Baseline original	Baseline corrected	Difference	% difference
11 Corporate managers and directors	2,285	2,340	54	2.40%
12 Other managers and proprietors	1,127	1,322	195	17.30%
21 Science, research, engineering and technology professionals	2,519	2,192	-327	-13.00%
22 Health professionals	1,582	1,710	128	8.10%
23 Teaching and other educational professionals	1,740	1,829	89	5.10%
24 Business, media and public service professionals	2,583	2,726	143	5.50%
31 Science, engineering and technology associate professionals	628	594	-34	-5.40%
32 Health and social care associate professionals	1,001	665	-336	-33.60%
33 Protective service occupations	324	442	118	36.40%
34 Culture, media and sports occupations	662	711	49	7.40%
35 Business and public service associate professionals	2,222	2,123	-99	-4.40%
41 Administrative occupations	3,155	2,852	-303	-9.60%
42 Secretarial and related occupations	672	751	79	11.80%
51 Skilled agricultural and related trades	357	369	12	3.30%
52 Skilled metal, electrical and electronic trades	1,103	1,107	4	0.30%
53 Skilled construction and building trades	924	959	35	3.80%
54 Textiles, printing and other skilled trades	674	641	-33	-4.90%
61 Caring personal service occupations	2,381	2,469	88	3.70%
62 Leisure, travel and related personal service occupations	679	727	48	7.10%
63 Community and civil enforcement occupations	27	30	3	12.30%
71 Sales occupations	2,151	2,044	-106	-4.90%
72 Customer service occupations	638	729	92	14.40%
81 Process, plant and machine operatives	817	920	103	12.60%
82 Transport and mobile machine drivers and operatives	1,222	1,272	50	4.10%
91 Elementary trades and related occupations	793	395	-398	-50.20%
92 Elementary administration and service occupations	2,875	3,221	346	12.00%
Total	35,140	35,140	0	0%

Source: IER estimates from SI35 Original and SI35 Corrected.

Figure 2 Differences in 2-digit SOC2020 projections 2021 and 2035 (000s)

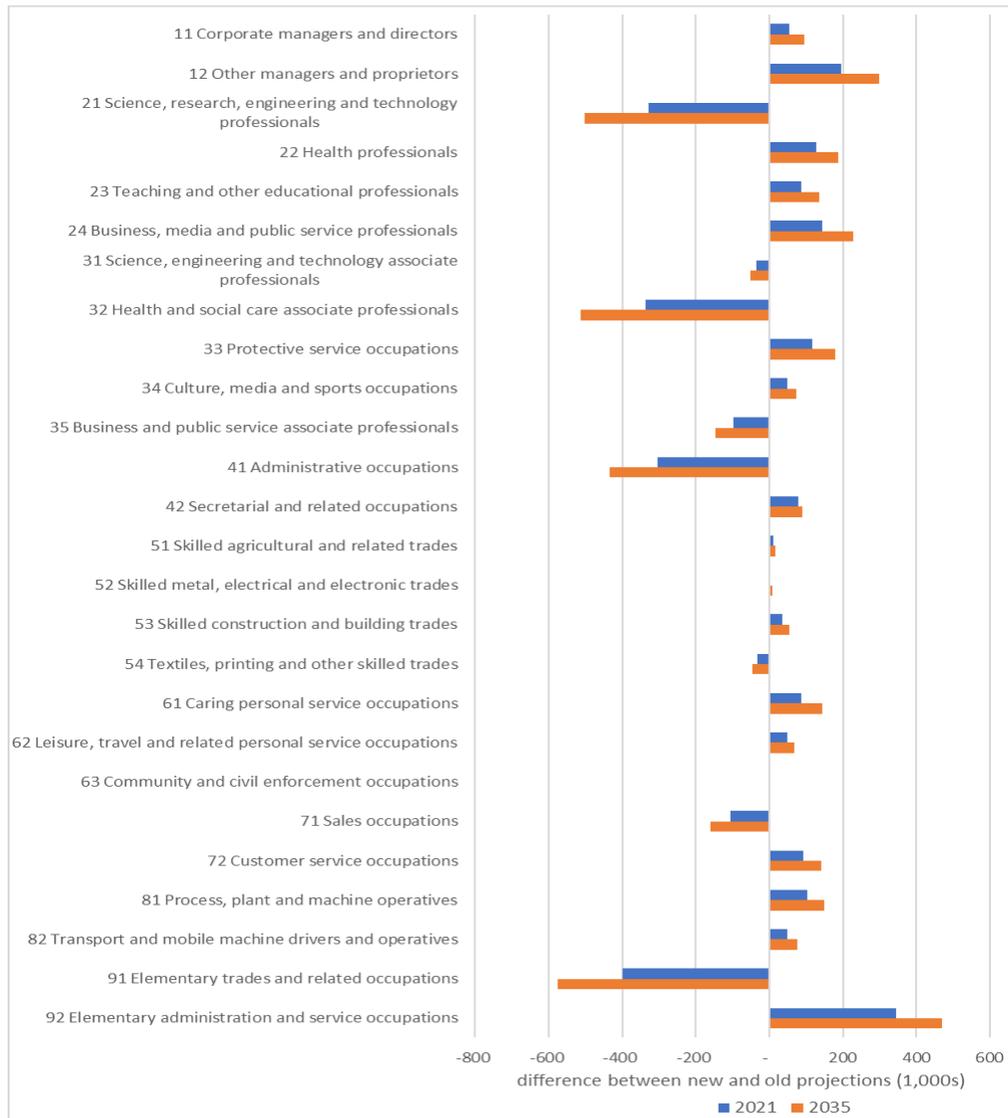


Table 3 Differences in 2-digit SOC2020 groups between new and old Baseline projections, 2021 and 2035 (000s)

SOC2020 Sub-Major groups (2-digit) (000s)	Baseline original		Baseline corrected		Difference	
	2021	2035	2021	2035	2021	2035
11 Corporate managers and directors	2,285	2,586	2,340	2,681	54	95
12 Other managers and proprietors	1,127	1,338	1,322	1,637	195	299
21 Science, research, engineering and technology professionals	2,519	3,065	2,192	2,563	-327	-502
22 Health professionals	1,582	1,774	1,710	1,963	128	188
23 Teaching and other educational professionals	1,740	1,947	1,829	2,082	89	135
24 Business, media and public service professionals	2,583	3,006	2,726	3,234	143	228
31 Science, engineering and technology associate professionals	628	711	594	660	-34	-51
32 Health and social care associate professionals	1,001	1,279	665	766	-336	-513
33 Protective service occupations	324	360	442	541	118	181
34 Culture, media and sports occupations	662	757	711	831	49	74
35 Business and public service associate professionals	2,222	2,425	2,123	2,280	-99	-145
41 Administrative occupations	3,155	3,117	2,852	2,685	-303	-433
42 Secretarial and related occupations	672	480	751	570	79	91
51 Skilled agricultural and related trades	357	407	369	423	12	17
52 Skilled metal, electrical and electronic trades	1,103	1,022	1,107	1,030	4	8
53 Skilled construction and building trades	924	835	959	889	35	53
54 Textiles, printing and other skilled trades	674	694	641	648	-33	-46
61 Caring personal service occupations	2,381	2,688	2,469	2,832	88	144
62 Leisure, travel and related personal service occupations	679	701	727	770	48	69
63 Community and civil enforcement occupations	27	30	30	34	3	3
71 Sales occupations	2,151	2,086	2,044	1,927	-106	-159
72 Customer service occupations	638	749	729	889	92	141
81 Process, plant and machine operatives	817	757	920	907	103	150
82 Transport and mobile machine drivers and operatives	1,222	1,195	1,272	1,272	50	77
91 Elementary trades and related occupations	793	944	395	368	-398	-576
92 Elementary administration and service occupations	2,875	2,614	3,221	3,086	346	471
Total	35,140	37,568	35,140	37,568	0	0

Detailed comparisons - Impacts at 4-digit level

At the 4-digit level, the differences in employment levels in the base year 2021 are even more noticeable, with a very large number of occupations affected. This reflects the substantial changes ONS have made to the LFS data.

While the rough orders of magnitude of the 4-digit employment levels within 2-digit categories and our projection trends remain the same, the absolute numbers are in many cases very different. Table 4 sets out some of the occupations where the largest impacts are observed in terms of absolute employment levels.

In percentage terms, there are also some other very large differences between the new and old projections. Unit groups with greater than +/- 250% differences between the new and old projections for 2021 are listed in Table 5 (rounded to the nearest 100). The statistical margins of error are of course much larger at the 4-digit level than at 1- or 2-digit levels. It is therefore not surprising to observe some quite significant differences.

Full set of revised results

A revised set of all of the charts and tables published in the original reports is available [here](#).

A revised set of Excel Workbooks, providing access to the detailed national, regional and sub-regional employment projections, and historical data upon which they are based, will be published in due course, and a link added to this document.

Table 4 Largest absolute differences in new vs old projections for 2021, 4-digit level

SOC2020 code and title	Baseline original	Baseline corrected	Difference	%
9131 Industrial cleaning process occupations	311,714	23,442	- 288,272	-92%
3231 Higher level teaching assistants	296,344	42,298	- 254,045	-86%
6131 Nursing auxiliaries and assistants	530,606	288,152	- 242,454	-46%
9223 Cleaners and domestics	357,412	594,766	237,353	66%
6112 Teaching assistants	108,313	332,467	224,154	207%
7112 Retail cashiers and check-out operators	362,870	151,430	- 211,440	-58%
7111 Sales and retail assistants	1,030,749	1,230,098	199,349	19%
2319 Teaching professionals n.e.c.	299,487	134,976	- 164,511	-55%
2313 Secondary education teaching professionals	376,885	506,984	130,099	35%
2133 IT business analysts, architects and systems designers	261,700	141,541	- 120,159	-46%

Table 5 Largest percentage differences in new vs old projections for 2021, 4-digit level

SOC2020 code and title	Baseline original	Baseline corrected	Difference	% Difference
5225 Air-conditioning and refrigeration installers and repairers	5,432	17,208	11,776	216.78%
6112 Teaching assistants	108,313	332,467	224,154	206.95%
1123 Production managers and directors in mining and energy	12,132	28,062	15,930	131.31%
1258 Directors in consultancy services	38,396	82,454	44,058	114.75%
2451 Architects	22,923	45,814	22,891	99.86%
1212 Managers and proprietors in forestry, fishing and related services	10,811	20,927	10,116	93.57%
9131 Industrial cleaning process occupations	311,714	23,442	- 288,272	-92.48%
3544 Data analysts	63,133	120,550	57,417	90.95%
3573 Information technology trainers	7,769	14,610	6,842	88.07%
3231 Higher level teaching assistants	296,344	42,298	- 254,045	-85.73%

4 Conclusions and recommendations

ONS recoding problems

In 2022, following publication of the Skills Imperative 2035 projections, the Office for National Statistics (ONS) announced that they had discovered an error in the way that occupational employment data had been coded in the Labour Force Survey (LFS). Given the central role that the LFS data played in assessing the structure of employment in the base year for the projections, it was decided to revise our employment projections using the corrected LFS data.

Assessing the Implications for the Skills Imperative 2035 projections

Employment projections were revised using the same macroeconomic and multisectoral employment scenario as used in the original project. The revised results therefore highlight the sensitivity of the projections to the corrections that ONS have made to the LFS employment estimates.

This Working Paper describes these **New** projections and compares them with the **Old** original ones. In their initial assessment ONS argued that the correction would only affect a limited number of occupations, with just a modest impact at the broader levels of the Standard Occupational Classification (SOC).

In practice, the correction for 2021, which was the base year for the SI35 projections has had a more significant impact at the 1- and 2-digit levels of SOC, as well as at the more detailed 4-digit level. Inevitably, this also has implications for our 2035 employment projections.

The revised projections

This Working Paper presents a brief summary of the revised occupational employment projections, based on the corrected LFS data published by ONS for 2021. A full set of detailed results, including corrected versions of all the tables and charts published in the original SI35 Reports is available [here](#).

The revised projections to 2035

The **New** results are compared with the **Old** results at 1-, 2- and 4 digit levels, focussing first on the structure of occupational employment in 2021 and then on the implications going forward to 2035. The impact of the error on historical estimates of occupational employment levels in 2021 is more significant than ONS initially indicated. However, the impact on historical and projected future *trends* in employment is modest. Therefore, the overall effect of the errors on our employment projections is fairly minimal. However, the errors do affect the scale of change projected in each occupation's share of UK employment, and the degree to which the change in share differs between the new and old projections varies by occupational group.

Recommendations

1. The overall effect of the LFS coding errors on our employment projections is fairly minimal. The projections indicate that the economy and the structure of employment will change significantly between now and 2035. There will be continued growth in demand for more skilled white-collar workers.
2. The Government needs to recognise the scale of projected changes and the set of challenges these will create, and start preparing for this now.
3. Employers and industry bodies also need to assess the implications of the projections for their own areas of interest and, in particular to note the trends in business critical occupations that they will need in future, and start planning what actions they need to take.

Annex A: ONS's Initial Estimate of the Impact of Recoding and subsequent re-assessment

Initial ONS statements

ONS's initial assessment of the impact of recoding is shown in Table 6, which focuses on the 4-digit level. The expectation was that the impact at 1- and 2-digit levels would be minor.

Table 6 ONS initial assessment of impact by SOC2020 4-digit code

SOC2020 Unit Group code and description	Estimated impact
1111 Chief executives and senior officials	Moderate impact
1112 Elected officers and representatives	Low impact
1121 Production managers and directors in manufacturing	High impact
1122 Production managers and directors in construction	High impact
1123 Production managers and directors in mining and energy	Low impact
1131 Financial managers and directors	High impact
1132 Marketing, sales and advertising directors	Moderate impact
1133 Public relations and communications directors	High impact
1134 Purchasing managers and directors	High impact
1135 Charitable organisation managers and directors	Moderate impact
1136 Human resource managers and directors	Low impact
1137 Information technology directors	Moderate impact
1139 Functional managers and directors n.e.c.	High impact
1140 Directors in logistics, warehousing and transport	Low impact
1150 Managers and directors in retail and wholesale	High impact

1161 Officers in armed forces	Low impact
1162 Senior police officers	Low impact
1163 Senior officers in fire, ambulance, prison and related services	High impact
1171 Health services and public health managers and directors	High impact
1172 Social services managers and directors	Moderate impact
1211 Managers and proprietors in agriculture and horticulture	Low impact
1212 Managers and proprietors in forestry, fishing and related services	Low impact
1221 Hotel and accommodation managers and proprietors	Low impact
1222 Restaurant and catering establishment managers and proprietors	Moderate impact
1223 Publicans and managers of licensed premises	High impact
1224 Leisure and sports managers	Moderate impact
1225 Travel agency managers and proprietors	Low impact
1231 Health care practice managers	Low impact
1232 Residential, day and domiciliary care managers and proprietors	Moderate impact
1233 Early education and childcare services proprietors	Low impact
1241 Managers in transport and distribution	High impact
1242 Managers in storage and warehousing	Low impact
1243 Managers in logistics	Low impact
1251 Property, housing and estate managers	High impact
1252 Garage managers and proprietors	High impact
1253 Hairdressing and beauty salon managers and proprietors	Low impact

1254 Waste disposal and environmental services managers	High impact
1255 Managers and directors in the creative industries	High impact
1256 Betting shop and gambling establishment managers	Low impact
1257 Hire services managers and proprietors	Low impact
1258 Directors in consultancy services	Low impact
1259 Managers and proprietors in other services n.e.c.	Low impact
2111 Chemical scientists	Moderate impact
2112 Biological scientists	High impact
2113 Biochemists and biomedical scientists	High impact
2114 Physical scientists	High impact
2115 Social and humanities scientists	Moderate impact
2119 Natural and social science professionals n.e.c.	High impact
2121 Civil engineers	Moderate impact
2122 Mechanical engineers	High impact
2123 Electrical engineers	High impact
2124 Electronics engineers	High impact
2125 Production and process engineers	High impact
2126 Aerospace engineers	High impact
2127 Engineering project managers and project engineers	Low impact
2129 Engineering professionals n.e.c.	High impact
2131 IT project managers	Moderate impact
2132 IT managers	High impact
2133 IT business analysts, architects and systems designers	High impact
2134 Programmers and software development professionals	High impact
2135 Cyber security professionals	High impact
2136 IT quality and testing professionals	High impact
2137 IT network professionals	Low impact

2139 Information technology professionals n.e.c.	High impact
2141 Web design professionals	Low impact
2142 Graphic and multimedia designers	High impact
2151 Conservation professionals	High impact
2152 Environment professionals	High impact
2161 Research and development (R&D) managers	Low impact
2162 Other researchers, unspecified discipline	High impact
2211 Generalist medical practitioners	Moderate impact
2212 Specialist medical practitioners	Moderate impact
2221 Physiotherapists	Low impact
2222 Occupational therapists	Low impact
2223 Speech and language therapists	Low impact
2224 Psychotherapists and cognitive behaviour therapists	Low impact
2225 Clinical psychologists	Low impact
2226 Other psychologists	Low impact
2229 Therapy professionals n.e.c.	Moderate impact
2231 Midwifery nurses	High impact
2232 Community nurses	Low impact
2233 Specialist nurses	Low impact
2234 Nurse practitioners	High impact
2235 Mental health nurses	Low impact
2236 Childrens nurses	Low impact
2237 Other nursing professionals	High impact
2240 Veterinarians	Low impact
2251 Pharmacists	Moderate impact
2252 Ophthalmic opticians	Low impact
2253 Dental practitioners	Moderate impact
2254 Medical radiographers	Moderate impact

2255 Paramedics	Low impact
2256 Podiatrists	High impact
2259 Other health professionals n.e.c.	High impact
2311 Higher education teaching professionals	High impact
2312 Further education teaching professionals	Low impact
2313 Secondary education teaching professionals	Low impact
2314 Primary education teaching professionals	Low impact
2315 Nursery education teaching professionals	Moderate impact
2316 Special needs education teaching professionals	High impact
2317 Teachers of English as a foreign language	Low impact
2319 Teaching professionals n.e.c.	High impact
2321 Head teachers and principals	High impact
2322 Education managers	Low impact
2323 Education advisers and school inspectors	Moderate impact
2324 Early education and childcare services managers	Low impact
2329 Other educational professionals n.e.c.	High impact
2411 Barristers and judges	Moderate impact
2412 Solicitors and lawyers	Moderate impact
2419 Legal professionals n.e.c.	Moderate impact
2421 Chartered and certified accountants	Moderate impact
2422 Finance and investment analysts and advisers	Low impact
2423 Taxation experts	Low impact
2431 Management consultants and business analysts	High impact
2432 Marketing and commercial managers	High impact
2433 Actuaries, economists and statisticians	Moderate impact
2434 Business and related research professionals	High impact
2435 Professional/Chartered company secretaries	High impact

2439 Business, research and administrative professionals n.e.c.	High impact
2440 Business and financial project management professionals	High impact
2451 Architects	High impact
2452 Chartered architectural technologists, planning officers and consultants	Low impact
2453 Quantity surveyors	Moderate impact
2454 Chartered surveyors	Moderate impact
2455 Construction project managers and related professionals	Low impact
2461 Social workers	Moderate impact
2462 Probation officers	Low impact
2463 Clergy	Low impact
2464 Youth work professionals	High impact
2469 Welfare professionals n.e.c.	Low impact
2471 Librarians	Low impact
2472 Archivists and curators	High impact
2481 Quality control and planning engineers	High impact
2482 Quality assurance and regulatory professionals	High impact
2483 Environmental health professionals	High impact
2491 Newspaper and periodical editors	Moderate impact
2492 Newspaper and periodical journalists and reporters	High impact
2493 Public relations professionals	High impact
2494 Advertising accounts managers and creative directors	Low impact
3111 Laboratory technicians	High impact
3112 Electrical and electronics technicians	High impact
3113 Engineering technicians	High impact
3114 Building and civil engineering technicians	High impact
3115 Quality assurance technicians	High impact
3116 Planning, process and production technicians	Low impact

3119 Science, engineering and production technicians n.e.c.	High impact
3120 CAD and drawing technicians	Moderate impact
3131 IT operations technicians	Moderate impact
3132 IT user support technicians	High impact
3133 Database administrators and web content technicians	Low impact
3211 Dispensing opticians	Low impact
3212 Pharmaceutical technicians	Low impact
3213 Medical and dental technicians	High impact
3214 Complementary health associate professionals	Moderate impact
3219 Health associate professionals n.e.c.	Moderate impact
3221 Youth and community workers	High impact
3222 Child and early years officers	High impact
3223 Housing officers	Moderate impact
3224 Counsellors	Low impact
3229 Welfare and housing associate professionals n.e.c.	High impact
3231 Higher level teaching assistants	High impact
3232 Early education and childcare practitioners	High impact
3240 Veterinary nurses	Low impact
3311 Non-commissioned officers and other ranks	Low impact
3312 Police officers (sergeant and below)	Moderate impact
3313 Fire service officers (watch manager and below)	Moderate impact
3314 Prison service officers (below principal officer)	Low impact
3319 Protective service associate professionals n.e.c.	Low impact
3411 Artists	High impact
3412 Authors, writers and translators	Moderate impact
3413 Actors, entertainers and presenters	High impact

3414 Dancers and choreographers	High impact
3415 Musicians	High impact
3416 Arts officers, producers and directors	Moderate impact
3417 Photographers, audio-visual and broadcasting equipment operators	Moderate impact
3421 Interior designers	High impact
3422 Clothing, fashion and accessories designers	High impact
3429 Design occupations n.e.c.	High impact
3431 Sports players	Moderate impact
3432 Sports coaches, instructors and officials	High impact
3433 Fitness and wellbeing instructors	Moderate impact
3511 Aircraft pilots and air traffic controllers	Moderate impact
3512 Ship and hovercraft officers	High impact
3520 Legal associate professionals	High impact
3531 Brokers	Moderate impact
3532 Insurance underwriters	Low impact
3533 Financial and accounting technicians	High impact
3534 Financial accounts managers	High impact
3541 Estimators, valuers and assessors	High impact
3542 Importers and exporters	Low impact
3543 Project support officers	High impact
3544 Data analysts	Moderate impact
3549 Business associate professionals n.e.c.	High impact
3551 Buyers and procurement officers	High impact
3552 Business sales executives	High impact
3553 Merchandisers	High impact
3554 Marketing associate professionals	High impact
3555 Estate agents and auctioneers	Moderate impact

3556 Sales accounts and business development managers	High impact
3557 Conference and exhibition managers and organisers	Low impact
3560 Public services associate professionals	Moderate impact
3571 Human resources and industrial relations officers	High impact
3572 Careers advisers and vocational guidance specialists	Low impact
3573 Information technology trainers	Low impact
3574 Other vocational and industrial trainers	Moderate impact
3581 Inspectors of standards and regulations	Low impact
3582 Health and safety managers and officers	High impact
4111 National government administrative occupations	High impact
4112 Local government administrative occupations	High impact
4113 Officers of non-governmental organisations	High impact
4121 Credit controllers	Low impact
4122 Book-keepers, payroll managers and wages clerks	Moderate impact
4123 Bank and post office clerks	High impact
4124 Finance officers	Low impact
4129 Financial administrative occupations n.e.c.	Moderate impact
4131 Records clerks and assistants	High impact
4132 Pensions and insurance clerks and assistants	Low impact
4133 Stock control clerks and assistants	High impact
4134 Transport and distribution clerks and assistants	High impact
4135 Library clerks and assistants	Low impact
4136 Human resources administrative occupations	Low impact
4141 Office managers	Low impact
4142 Office supervisors	High impact
4143 Customer service managers	High impact
4151 Sales administrators	High impact
4152 Data entry administrators	High impact
4159 Other administrative occupations n.e.c.	High impact
4211 Medical secretaries	Low impact

4212 Legal secretaries	Low impact
4213 School secretaries	High impact
4214 Company secretaries and administrators	High impact
4215 Personal assistants and other secretaries	Moderate impact
4216 Receptionists	Low impact
4217 Typists and related keyboard occupations	Low impact
5111 Farmers	Moderate impact
5112 Horticultural trades	High impact
5113 Gardeners and landscape gardeners	Low impact
5114 Groundsmen and greenkeepers	Low impact
5119 Agricultural and fishing trades n.e.c.	Moderate impact
5211 Sheet metal workers	Moderate impact
5212 Metal plate workers, smiths, moulders and related occupations	Moderate impact
5213 Welding trades	High impact
5214 Pipe fitters	Low impact
5221 Metal machining setters and setter-operators	High impact
5222 Tool makers, tool fitters and markers-out	Moderate impact
5223 Metal working production and maintenance fitters	High impact
5224 Precision instrument makers and repairers	High impact
5225 Air-conditioning and refrigeration installers and repairers	High impact
5231 Vehicle technicians, mechanics and electricians	High impact
5232 Vehicle body builders and repairers	Low impact
5233 Vehicle paint technicians	Low impact
5234 Aircraft maintenance and related trades	High impact
5235 Boat and ship builders and repairers	High impact
5236 Rail and rolling stock builders and repairers	High impact
5241 Electricians and electrical fitters	Moderate impact

5242 Telecoms and related network installers and repairers	Moderate impact
5243 TV, video and audio servicers and repairers	High impact
5244 Computer system and equipment installers and servicers	Moderate impact
5245 Security system installers and repairers	High impact
5246 Electrical service and maintenance mechanics and repairers	High impact
5249 Electrical and electronic trades n.e.c.	High impact
5250 Skilled metal, electrical and electronic trades supervisors	Low impact
5311 Steel erectors	High impact
5312 Stonemasons and related trades	Moderate impact
5313 Bricklayers	Moderate impact
5314 Roofers, roof tilers and slaters	High impact
5315 Plumbers & heating and ventilating installers and repairers	High impact
5316 Carpenters and joiners	Moderate impact
5317 Glaziers, window fabricators and fitters	High impact
5319 Construction and building trades n.e.c.	Moderate impact
5321 Plasterers	Low impact
5322 Floorers and wall tilers	Moderate impact
5323 Painters and decorators	High impact
5330 Construction and building trades supervisors	Low impact
5411 Upholsterers	Low impact
5412 Footwear and leather working trades	Moderate impact
5413 Tailors and dressmakers	High impact
5419 Textiles, garments and related trades n.e.c.	High impact
5421 Pre-press technicians	High impact

5422 Printers	High impact
5423 Print finishing and binding workers	Low impact
5431 Butchers	High impact
5432 Bakers and flour confectioners	High impact
5433 Fishmongers and poultry dressers	High impact
5434 Chefs	Low impact
5435 Cooks	Low impact
5436 Catering and bar managers	High impact
5441 Glass and ceramics makers, decorators and finishers	High impact
5442 Furniture makers and other craft woodworkers	High impact
5443 Florists	Low impact
5449 Other skilled trades n.e.c.	Moderate impact
6111 Early education and childcare assistants	High impact
6112 Teaching assistants	High impact
6113 Educational support assistants	High impact
6114 Childminders	Low impact
6116 Nannies and au pairs	Low impact
6117 Playworkers	Low impact
6121 Pest control officers	Low impact
6129 Animal care services occupations n.e.c.	Moderate impact
6131 Nursing auxiliaries and assistants	High impact
6132 Ambulance staff (excluding paramedics)	Low impact
6133 Dental nurses	Low impact
6134 Houseparents and residential wardens	High impact
6135 Care workers and home carers	Low impact
6136 Senior care workers	High impact
6137 Care escorts	High impact
6138 Undertakers, mortuary and crematorium assistants	Low impact
6211 Sports and leisure assistants	High impact
6212 Travel agents	Moderate impact
6213 Air travel assistants	High impact

6214 Rail travel assistants	High impact
6219 Leisure and travel service occupations n.e.c.	Moderate impact
6221 Hairdressers and barbers	Low impact
6222 Beauticians and related occupations	Moderate impact
6231 Housekeepers and related occupations	High impact
6232 Caretakers	Moderate impact
6240 Cleaning and housekeeping managers and supervisors	Low impact
6250 Bed and breakfast and guest house owners and proprietors	Low impact
6311 Police community support officers	Low impact
6312 Parking and civil enforcement occupations	High impact
7111 Sales and retail assistants	High impact
7112 Retail cashiers and check-out operators	High impact
7113 Telephone salespersons	High impact
7114 Pharmacy and optical dispensing assistants	Moderate impact
7115 Vehicle and parts salespersons and advisers	High impact
7121 Collector salespersons and credit agents	High impact
7122 Debt, rent and other cash collectors	High impact
7123 Roundspersons and van salespersons	High impact
7124 Market and street traders and assistants	High impact
7125 Visual merchandisers and related occupations	High impact
7129 Sales related occupations n.e.c.	High impact
7131 Shopkeepers	High impact
7132 Sales supervisors - retail and wholesale	Low impact
7211 Call and contact centre occupations	Moderate impact
7212 Telephonists	High impact
7213 Communication operators	High impact
7214 Market research interviewers	High impact

7219 Customer service occupations n.e.c.	Moderate impact
7220 Customer service supervisors	Moderate impact
8111 Food, drink and tobacco process operatives	Moderate impact
8112 Textile process operatives	High impact
8113 Chemical and related process operatives	High impact
8114 Plastics process operatives	High impact
8115 Metal making and treating process operatives	High impact
8119 Process operatives n.e.c.	High impact
8120 Metal working machine operatives	High impact
8131 Paper and wood machine operatives	High impact
8132 Mining and quarry workers and related operatives	High impact
8133 Energy plant operatives	High impact
8134 Water and sewerage plant operatives	High impact
8135 Printing machine assistants	High impact
8139 Plant and machine operatives n.e.c.	High impact
8141 Assemblers (electrical and electronic products)	High impact
8142 Assemblers (vehicles and metal goods)	High impact
8143 Routine inspectors and testers	Moderate impact
8144 Weighers, graders and sorters	High impact
8145 Tyre, exhaust and windscreen fitters	High impact
8146 Sewing machinists	High impact
8149 Assemblers and routine operatives n.e.c.	High impact
8151 Scaffolders, staggers and riggers	Moderate impact
8152 Road construction operatives	High impact
8153 Rail construction and maintenance operatives	High impact
8159 Construction operatives n.e.c.	High impact
8160 Production, factory and assembly supervisors	High impact
8211 Large goods vehicle drivers	Moderate impact

8212 Bus and coach drivers	Moderate impact
8213 Taxi and cab drivers and chauffeurs	Moderate impact
8214 Delivery drivers and couriers	Moderate impact
8215 Driving instructors	Low impact
8219 Road transport drivers n.e.c.	High impact
8221 Crane drivers	Low impact
8222 Fork-lift truck drivers	High impact
8229 Mobile machine drivers and operatives n.e.c.	Moderate impact
8231 Train and tram drivers	Low impact
8232 Marine and waterways transport operatives	High impact
8233 Air transport operatives	High impact
8234 Rail transport operatives	High impact
8239 Other drivers and transport operatives n.e.c.	High impact
9111 Farm workers	High impact
9112 Forestry and related workers	High impact
9119 Fishing and other elementary agriculture occupations n.e.c.	High impact
9121 Groundworkers	Low impact
9129 Elementary construction occupations n.e.c.	Moderate impact
9131 Industrial cleaning process occupations	High impact
9132 Packers, bottlers, canners and fillers	High impact
9139 Elementary process plant occupations n.e.c.	High impact
9211 Postal workers, mail sorters and messengers	Moderate impact
9219 Elementary administration occupations n.e.c.	High impact
9221 Window cleaners	Moderate impact
9222 Street cleaners	Low impact
9223 Cleaners and domestics	High impact
9224 Launderers, dry cleaners and pressers	High impact

9225 Refuse and salvage occupations	Low impact
9226 Vehicle valeters and cleaners	High impact
9229 Elementary cleaning occupations n.e.c.	High impact
9231 Security guards and related occupations	High impact
9232 School midday and crossing patrol occupations	High impact
9233 Exam invigilators	Low impact
9241 Shelf fillers	High impact
9249 Elementary sales occupations n.e.c.	Low impact
9251 Elementary storage supervisors	Low impact
9252 Warehouse operatives	Moderate impact
9253 Delivery operatives	High impact
9259 Elementary storage occupations n.e.c.	High impact
9261 Bar and catering supervisors	Moderate impact
9262 Hospital porters	Low impact
9263 Kitchen and catering assistants	Moderate impact
9264 Waiters and waitresses	Moderate impact
9265 Bar staff	Moderate impact
9266 Coffee shop workers	Low impact
9267 Leisure and theme park attendants	High impact
9269 Other elementary services occupations n.e.c.	High impact

Source: Office for National Statistics

Key	
Low impact: <5% affected	113 (27.4%)
Moderate impact: 5% to 50% affected	90 (21.8%)
High impact: >50% affected	209 (50.7%)

Source: Office for National Statistics

IER's subsequent analysis of impacts (LFS data)

Following the coding revisions, IER re-ran their analysis. The LFS data processing phase for the 2021 LFS (SPSS), in November 2023, highlighted that there were much larger differences between the original and corrected LFS results at 1 and 2-digit levels than had been expected, given the previous ONS statements about this.

For example, the analysis at the 1-digit level suggests much larger changes than indicated by ONS in their initial assessment of the possible impact of the revisions. The ONS statement from the 26th of September 2022² reported that the estimated changes at the 1-digit level were between -0.2% and 0.3%. The ONS statement released in July 2023,³ after all of the recoding work had been completed, only included specific details of the changes at the 4-digit level but suggested that there was '*minimal impact at the one-digit level*'.

The IER estimates of the impact are much more significant and are summarised in Table 7.

IER recognise that this table does not precisely replicate the chart produced by the ONS in the September 2022 statement, as that was based on those in the same job for at least 12 months and also only included the 4-digit SOC codes which had been identified as potentially highly impacted. However, if the analysis is restricted to just those 4-codes which were highly impacted then the percentage changes are even higher than those presented in Table 7. IER also identified an unexpected code - 6141 - within the LFS SOC20M variable. This resulted in a misallocation of 4-digit categories for all subsequent

cases. This code appeared to be a residual element from the SOC2010 classification.

ONS were approached about both these matters and confirmed that the 6141 was a clerical error. All cases subject to recoding were initially recoded by the ONS Classification Unit's automated machine learning tool. Those cases failing to meet their specified quality threshold were then sent for manual coding by Classification Unit's expert coders. The case in question was one of those clerical (i.e. manually coded) cases.

ONS checked the occupation title and description associated with this case and confirmed that the correct revised SOC2020 code should be 6131 Nursing auxiliaries and assistants. ONS also confirmed that in respect of the changes to 1- and 2-digit codes, the different coding methodologies outlined in their July 2023 article inevitably lead to differences between the coding outcomes at 1- and 2-digit, as well as the more detailed 4-digit level. ONS subsequently confirmed that IER's original vs revised Major Group totals for LFS JM21 are consistent with theirs.

Charts prepared by ONS showing the revisions to the major groups, JM21 to JS22, in the context of the previous three year's trends demonstrate that while the changes (against hypothetical correct data) seen in the revised data at major group level are higher than perhaps was initially suggested, they are largely in line with historic trends. The differences are most noticeable in 2021, which is the base year for IER's analysis.

2

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/theimpactofmiscodingofoccupationaldatainofficeforationalstatisticsocialsurveysuk/2022-09-26>

3

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/revisionofmiscodedoccupationaldataintheonslabourforcesurveyuk/january2021toseptember2022>

These differences are in line with IER's analysis in Table 1 in the main part of this note, which show quite significant changes at the 1-digit level (pre- versus post- the coding correction) ranging from -6.0% (SOC2020 major group 3) to 7.6% (SOC2020 major group 8) for 2021. The estimated changes at the major group level suggested in the September 2022 statement were based on ONS's initial assessment of the coding frame error. This assessment had three components:

1. ONS eliminated all index/coding frame entries that were not affected by the missing 'additional' information in the coding frame.
2. ONS flagged all SOC2020 4-digit codes in JM21 (January-March 2021 of the LFS) that showed a significant increase/decrease compared to the previous three year's quarterly data, using SOC2010 mapped to SOC2020 data
3. ONS flagged all SOC2020 4-digit codes where the flows from OD20 into JM21, and vice versa, exceed certain thresholds, again using SOC2010->2020 mapped data.

From that exercise ONS estimated the level of affectedness of each SOC2020 4-digit code. They then scaled up those estimates to the 1-digit major group level which resulted in the estimates given in the September 2022 statement. However, those estimates applied to *incorrect data vs hypothetical correct data*. What IER's analysis highlights is the differences between *incorrect data vs actual recoded data*.

ONS know from previous exercises that the mere act of recoding can introduce discontinuities, because different coders, even using the same coding methodology, can return different results. But in this case, we are also seeing discontinuities arising from very different coding methodologies. ONS also add that, although they identified a number of SOC codes as not affected by the coding frame error, some of these codes have seen changes to their original population. This is because

some of the affected cases, when recoded, were recoded into these nominally unaffected codes.

Table 8 shows the differences between the 4-digit occupational shares in the original and corrected LFS results published by ONS for 2021.

Table 7 IER estimates of the impact at 1-digit level (raw LFS data)

SOC2020 major groups	Jan-Mar 2021 (4th edition)	Jan-Mar 2021 (5th edition)	Difference	
			000s	%
1 Managers, Directors and Senior Officials	3,377,873	3,615,592	237,719	7.0%
2 Professional Occupations	8,137,963	8,071,576	- 66,387	-0.8%
3 Associate Professional Occupations	4,670,417	4,383,889	- 286,528	-6.1%
4 Administrative and Secretarial Occs.	3,542,808	3,362,132	- 180,676	-5.1%
5 Skilled Trades Occupations	2,891,817	2,982,461	90,644	3.1%
6 Caring, Leisure and Other Service Occs.	2,600,091	2,745,188	145,097	5.6%
7 Sales and Customer Service Occs.	2,247,230	2,267,692	20,462	0.9%
8 Process, Plant and Machine Operatives	1,825,715	1,965,124	139,409	7.6%
9 Elementary Occupations	2,804,039	2,713,942	- 90,097	-3.2%
Total	32,097,953	32,107,596	9,643	0.0%

Source: IER estimates based on LFS data.

Table 8 Differences in 4-digit LFS SOC2020 estimates 2021 (%)

	LFS (2021) original	LFS (2021 & 2022) corrected
1111 Chief executives and senior officials	0.31%	0.43%
1112 Elected officers and representatives	0.04%	0.04%
1121 Production managers and directors in manufacturing	0.72%	0.77%
1122 Production managers and directors in construction	0.45%	0.50%
1123 Production managers and directors in mining and energy	0.04%	0.08%
1131 Financial managers and directors	1.40%	1.00%
1132 Marketing, sales and advertising directors	0.72%	0.80%
1133 Public relations and communications directors	0.08%	0.04%
1134 Purchasing managers and directors	0.23%	0.17%
1135 Charitable organisation managers and directors	0.12%	0.16%
1136 Human resource managers and directors	0.66%	0.71%
1137 Information technology directors	0.42%	0.56%
1139 Functional managers and directors n.e.c.	0.39%	0.28%
1140 Directors in logistics, warehousing and transport	0.04%	0.08%
1150 Managers and directors in retail and wholesale	0.93%	0.88%
1161 Officers in armed forces	0.10%	0.10%
1162 Senior police officers	0.05%	0.05%
1163 Senior officers in fire, ambulance, prison and related services	0.03%	0.04%
1171 Health services and public health managers and directors	0.20%	0.17%
1172 Social services managers and directors	0.09%	0.14%

1211 Managers and proprietors in agriculture and horticulture	0.08%	0.09%
1212 Managers and proprietors in forestry, fishing and related services	0.03%	0.06%
1221 Hotel and accommodation managers and proprietors	0.13%	0.17%
1222 Restaurant and catering establishment managers and proprietors	0.42%	0.48%
1223 Publicans and managers of licensed premises	0.10%	0.07%
1224 Leisure and sports managers	0.16%	0.22%
1225 Travel agency managers and proprietors	0.02%	0.04%
1231 Health care practice managers	0.06%	0.11%
1232 Residential, day and domiciliary care managers and proprietors	0.17%	0.22%
1233 Early education and childcare services proprietors	0.02%	0.02%
1241 Managers in transport and distribution	0.48%	0.24%
1242 Managers in storage and warehousing	0.24%	0.25%
1243 Managers in logistics	0.13%	0.14%
1251 Property, housing and estate managers	0.54%	0.60%
1252 Garage managers and proprietors	0.05%	0.07%
1253 Hairdressing and beauty salon managers and proprietors	0.06%	0.05%
1254 Waste disposal and environmental services managers	0.04%	0.05%
1255 Managers and directors in the creative industries	0.23%	0.16%
1256 Betting shop and gambling establishment managers	0.06%	0.06%
1257 Hire services managers and proprietors	0.03%	0.05%
1258 Directors in consultancy services	0.12%	0.24%
1259 Managers and proprietors in other services n.e.c.	0.24%	0.42%

2111 Chemical scientists	0.07%	0.13%
2112 Biological scientists	0.16%	0.09%
2113 Biochemists and biomedical scientists	0.16%	0.16%
2114 Physical scientists	0.13%	0.09%
2115 Social and humanities scientists	0.10%	0.13%
2119 Natural and social science professionals n.e.c.	0.09%	0.08%
2121 Civil engineers	0.30%	0.37%
2122 Mechanical engineers	0.19%	0.23%
2123 Electrical engineers	0.12%	0.10%
2124 Electronics engineers	0.08%	0.12%
2125 Production and process engineers	0.16%	0.12%
2126 Aerospace engineers	0.17%	0.08%
2127 Engineering project managers and project engineers	0.12%	0.16%
2129 Engineering professionals n.e.c.	0.51%	0.24%
2131 IT project managers	0.21%	0.36%
2132 IT managers	0.83%	0.64%
2133 IT business analysts, architects and systems designers	0.80%	0.45%
2134 Programmers and software development professionals	1.50%	1.50%
2135 Cyber security professionals	0.13%	0.11%
2136 IT quality and testing professionals	0.13%	0.10%
2137 IT network professionals	0.08%	0.11%
2139 Information technology professionals n.e.c.	0.54%	0.44%
2141 Web design professionals	0.09%	0.10%
2142 Graphic and multimedia designers	0.36%	0.33%
2151 Conservation professionals	0.06%	0.06%
2152 Environment professionals	0.15%	0.16%

2161 Research and development (R&D) managers	0.22%	0.31%
2162 Other researchers, unspecified discipline	0.22%	0.18%
2211 Generalist medical practitioners	0.56%	0.56%
2212 Specialist medical practitioners	0.48%	0.54%
2221 Physiotherapists	0.18%	0.19%
2222 Occupational therapists	0.14%	0.14%
2223 Speech and language therapists	0.07%	0.08%
2224 Psychotherapists and cognitive behaviour therapists	0.11%	0.12%
2225 Clinical psychologists	0.05%	0.07%
2226 Other psychologists	0.07%	0.10%
2229 Therapy professionals n.e.c.	0.13%	0.17%
2231 Midwifery nurses	0.15%	0.12%
2232 Community nurses	0.25%	0.25%
2233 Specialist nurses	0.21%	0.26%
2234 Nurse practitioners	0.16%	0.12%
2235 Mental health nurses	0.12%	0.16%
2236 Children's nurses	0.07%	0.10%
2237 Other nursing professionals	0.77%	1.11%
2240 Veterinarians	0.06%	0.07%
2251 Pharmacists	0.23%	0.22%
2252 Optometrists	0.07%	0.07%
2253 Dental practitioners	0.11%	0.11%
2254 Medical radiographers	0.10%	0.12%
2255 Paramedics	0.09%	0.12%
2256 Podiatrists	0.05%	0.04%
2259 Other health professionals n.e.c.	0.26%	0.17%
2311 Higher education teaching professionals	0.69%	0.71%
2312 Further education teaching professionals	0.20%	0.23%

2313 Secondary education teaching professionals	1.11%	1.42%
2314 Primary education teaching professionals	1.12%	1.30%
2315 Nursery education teaching professionals	0.06%	0.07%
2316 Special needs education teaching professionals	0.28%	0.21%
2317 Teachers of English as a foreign language	0.10%	0.09%
2319 Teaching professionals n.e.c.	0.87%	0.38%
2321 Head teachers and principals	0.15%	0.09%
2322 Education managers	0.14%	0.20%
2323 Education advisers and school inspectors	0.12%	0.16%
2324 Early education and childcare services managers	0.12%	0.12%
2329 Other educational professionals n.e.c	0.17%	0.14%
2411 Barristers and judges	0.10%	0.10%
2412 Solicitors and lawyers	0.53%	0.61%
2419 Legal professionals n.e.c.	0.21%	0.25%
2421 Chartered and certified accountants	0.61%	0.64%
2422 Finance and investment analysts and advisers	0.79%	0.90%
2423 Taxation experts	0.19%	0.20%
2431 Management consultants and business analysts	0.57%	0.58%
2432 Marketing and commercial managers	0.43%	0.32%
2433 Actuaries, economists and statisticians	0.19%	0.27%
2434 Business and related research professionals	0.16%	0.21%
2435 Professional/Chartered company secretaries	0.02%	0.02%
2439 Business, research and administrative professionals n.e.c.	0.24%	0.26%
2440 Business and financial project management professionals	1.02%	0.78%
2451 Architects	0.07%	0.14%

2452 Chartered architectural technologists, planning officers and consultants	0.11%	0.18%
2453 Quantity surveyors	0.18%	0.20%
2454 Chartered surveyors	0.19%	0.23%
2455 Construction project managers and related professionals	0.17%	0.31%
2461 Social workers	0.34%	0.41%
2462 Probation officers	0.05%	0.05%
2463 Clergy	0.18%	0.21%
2464 Youth work professionals	0.05%	0.03%
2469 Welfare professionals n.e.c.	0.07%	0.08%
2471 Librarians	0.08%	0.06%
2472 Archivists and curators	0.05%	0.05%
2481 Quality control and planning engineers	0.08%	0.14%
2482 Quality assurance and regulatory professionals	0.38%	0.36%
2483 Environmental health professionals	0.02%	0.04%
2491 Newspaper and periodical editors	0.10%	0.13%
2492 Newspaper and periodical journalists and reporters	0.21%	0.16%
2493 Public relations professionals	0.20%	0.23%
2494 Advertising accounts managers and creative directors	0.14%	0.18%
3111 Laboratory technicians	0.28%	0.18%
3112 Electrical and electronics technicians	0.06%	0.06%
3113 Engineering technicians	0.19%	0.14%
3114 Building and civil engineering technicians	0.05%	0.02%
3115 Quality assurance technicians	0.12%	0.08%
3116 Planning, process and production technicians	0.09%	0.09%
3119 Science, engineering and production technicians n.e.c.	0.12%	0.12%

3120 CAD, drawing and architectural technicians	0.16%	0.22%
3131 IT operations technicians	0.27%	0.34%
3132 IT user support technicians	0.41%	0.29%
3133 Database administrators and web content technicians	0.16%	0.21%
3211 Dispensing opticians	0.03%	0.02%
3212 Pharmaceutical technicians	0.10%	0.11%
3213 Medical and dental technicians	0.15%	0.09%
3214 Complementary health associate professionals	0.10%	0.11%
3219 Health associate professionals n.e.c.	0.08%	0.10%
3221 Youth and community workers	0.20%	0.20%
3222 Child and early years officers	0.15%	0.14%
3223 Housing officers	0.18%	0.20%
3224 Counsellors	0.11%	0.12%
3229 Welfare and housing associate professionals n.e.c.	0.53%	0.37%
3231 Higher level teaching assistants	0.79%	0.12%
3232 Early education and childcare practitioners	0.23%	0.19%
3240 Veterinary nurses	0.06%	0.06%
3311 Non-commissioned officers and other ranks	0.17%	0.19%
3312 Police officers (sergeant and below)	0.33%	0.56%
3313 Fire service officers (watch manager and below)	0.10%	0.12%
3314 Prison service officers (below principal officer)	0.13%	0.14%
3319 Protective service associate professionals n.e.c.	0.26%	0.34%
3411 Artists	0.11%	0.16%
3412 Authors, writers and translators	0.28%	0.36%
3413 Actors, entertainers and presenters	0.18%	0.13%

3414 Dancers and choreographers	0.04%	0.04%
3415 Musicians	0.12%	0.13%
3416 Arts officers, producers and directors	0.27%	0.35%
3417 Photographers, audio-visual and broadcasting equipment operators	0.23%	0.27%
3421 Interior designers	0.08%	0.09%
3422 Clothing, fashion and accessories designers	0.10%	0.07%
3429 Design occupations n.e.c.	0.11%	0.07%
3431 Sports players	0.03%	0.05%
3432 Sports coaches, instructors and officials	0.30%	0.24%
3433 Fitness and wellbeing instructors	0.22%	0.20%
3511 Aircraft pilots and air traffic controllers	0.08%	0.08%
3512 Ship and hovercraft officers	0.05%	0.06%
3520 Legal associate professionals	0.22%	0.17%
3531 Brokers	0.14%	0.18%
3532 Insurance underwriters	0.14%	0.14%
3533 Financial and accounting technicians	0.04%	0.05%
3534 Financial accounts managers	0.46%	0.43%
3541 Estimators, valuers and assessors	0.24%	0.16%
3542 Importers and exporters	0.03%	0.02%
3543 Project support officers	0.22%	0.13%
3544 Data analysts	0.18%	0.37%
3549 Business associate professionals n.e.c.	0.34%	0.25%
3551 Buyers and procurement officers	0.22%	0.25%
3552 Business sales executives	0.57%	0.42%
3553 Merchandisers	0.06%	0.08%
3554 Marketing associate professionals	0.63%	0.48%
3555 Estate agents and auctioneers	0.15%	0.18%
3556 Sales accounts and business development managers	1.09%	0.81%

3557 Events and exhibition managers and organisers	0.18%	0.25%
3560 Public services associate professionals	0.34%	0.46%
3571 Human resources and industrial relations officers	0.57%	0.51%
3572 Careers advisers and vocational guidance specialists	0.11%	0.11%
3573 Information technology trainers	0.02%	0.05%
3574 Other vocational and industrial trainers	0.49%	0.55%
3581 Inspectors of standards and regulations	0.12%	0.16%
3582 Health and safety managers and officers	0.24%	0.22%
4111 National government administrative occupations	0.65%	0.63%
4112 Local government administrative occupations	0.42%	0.42%
4113 Officers of non-governmental organisations	0.39%	0.16%
4121 Credit controllers	0.14%	0.14%
4122 Book-keepers, payroll managers and wages clerks	1.46%	1.53%
4123 Bank and post office clerks	0.32%	0.27%
4124 Finance officers	0.16%	0.15%
4129 Financial administrative occupations n.e.c.	0.54%	0.60%
4131 Records clerks and assistants	0.41%	0.37%
4132 Pensions and insurance clerks and assistants	0.25%	0.28%
4133 Stock control clerks and assistants	0.28%	0.22%
4134 Transport and distribution clerks and assistants	0.24%	0.18%
4135 Library clerks and assistants	0.08%	0.10%
4136 Human resources administrative occupations	0.11%	0.18%
4141 Office managers	0.54%	0.65%
4142 Office supervisors	0.15%	0.07%

4143 Customer service managers	0.46%	0.21%
4151 Sales administrators	0.48%	0.17%
4152 Data entry administrators	0.14%	0.08%
4159 Other administrative occupations n.e.c.	1.87%	1.62%
4211 Medical secretaries	0.22%	0.24%
4212 Legal secretaries	0.12%	0.16%
4213 School secretaries	0.27%	0.18%
4214 Company secretaries and administrators	0.07%	0.08%
4215 Personal assistants and other secretaries	0.46%	0.61%
4216 Receptionists	0.60%	0.67%
4217 Typists and related keyboard occupations	0.02%	0.02%
5111 Farmers	0.31%	0.39%
5112 Horticultural trades	0.04%	0.02%
5113 Gardeners and landscape gardeners	0.46%	0.49%
5114 Groundsmen and greenkeepers	0.09%	0.09%
5119 Agricultural and fishing trades n.e.c.	0.11%	0.11%
5211 Sheet metal workers	0.04%	0.05%
5212 Metal plate workers, smiths, moulders and related occupations	0.03%	0.03%
5213 Welding trades	0.09%	0.16%
5214 Pipe fitters	0.01%	0.03%
5221 Metal machining setters and setter-operators	0.10%	0.08%
5222 Tool makers, tool fitters and markers-out	0.02%	0.03%
5223 Metal working production and maintenance fitters	0.52%	0.49%
5224 Precision instrument makers and repairers	0.06%	0.08%
5225 Air-conditioning and refrigeration installers and repairers	0.02%	0.05%
5231 Vehicle technicians, mechanics and electricians	0.45%	0.48%

5232 Vehicle body builders and repairers	0.08%	0.09%
5233 Vehicle paint technicians	0.05%	0.05%
5234 Aircraft maintenance and related trades	0.25%	0.09%
5235 Boat and ship builders and repairers	0.03%	0.04%
5236 Rail and rolling stock builders and repairers	0.04%	0.05%
5241 Electricians and electrical fitters	0.72%	0.74%
5242 Telecoms and related network installers and repairers	0.23%	0.26%
5243 TV, video and audio servicers and repairers	0.02%	0.02%
5244 Computer system and equipment installers and servicers	0.11%	0.16%
5245 Security system installers and repairers	0.04%	0.06%
5246 Electrical service and maintenance mechanics and repairers	0.11%	0.08%
5249 Electrical and electronic trades n.e.c.	0.10%	0.06%
5250 Skilled metal, electrical and electronic trades supervisors	0.11%	0.14%
5311 Steel erectors	0.01%	0.02%
5312 Stonemasons and related trades	0.03%	0.04%
5313 Bricklayers	0.17%	0.14%
5314 Roofers, roof tilers and slaters	0.11%	0.10%
5315 Plumbers & heating and ventilating installers and repairers	0.44%	0.47%
5316 Carpenters and joiners	0.62%	0.63%
5317 Glaziers, window fabricators and fitters	0.20%	0.11%
5319 Construction and building trades n.e.c.	0.61%	0.69%
5321 Plasterers	0.16%	0.17%
5322 Floorers and wall tilers	0.11%	0.14%
5323 Painters and decorators	0.26%	0.27%
5330 Construction and building trades supervisors	0.18%	0.19%
5411 Upholsterers	0.06%	0.07%

5412 Footwear and leather working trades	0.01%	0.02%
5413 Tailors and dressmakers	0.03%	0.03%
5419 Textiles, garments and related trades n.e.c.	0.03%	0.03%
5421 Pre-press technicians	0.01%	0.01%
5422 Printers	0.04%	0.06%
5423 Print finishing and binding workers	0.03%	0.03%
5431 Butchers	0.10%	0.09%
5432 Bakers and flour confectioners	0.12%	0.10%
5433 Fishmongers and poultry dressers	0.02%	0.01%
5434 Chefs	0.59%	0.62%
5435 Cooks	0.20%	0.20%
5436 Catering and bar managers	0.26%	0.20%
5441 Glass and ceramics makers, decorators and finishers	0.05%	0.02%
5442 Furniture makers and other craft woodworkers	0.17%	0.09%
5443 Florists	0.05%	0.04%
5449 Other skilled trades n.e.c.	0.12%	0.18%
6111 Early education and childcare assistants	0.42%	0.41%
6112 Teaching assistants	0.30%	0.89%
6113 Educational support assistants	0.41%	0.44%
6114 Childminders	0.15%	0.17%
6116 Nannies and au pairs	0.07%	0.07%
6117 Playworkers	0.06%	0.07%
6121 Pest control officers	0.03%	0.02%
6129 Animal care services occupations n.e.c.	0.26%	0.29%
6131 Nursing auxiliaries and assistants	1.36%	0.77%
6132 Ambulance staff (excluding paramedics)	0.11%	0.11%
6133 Dental nurses	0.15%	0.15%
6134 Houseparents and residential wardens	0.07%	0.06%

6135 Care workers and home carers	2.43%	2.73%
6136 Senior care workers	0.31%	0.23%
6137 Care escorts	0.06%	0.08%
6138 Undertakers, mortuary and crematorium assistants	0.07%	0.09%
6211 Sports and leisure assistants	0.19%	0.19%
6212 Travel agents	0.11%	0.11%
6213 Air travel assistants	0.12%	0.11%
6214 Rail travel assistants	0.06%	0.07%
6219 Leisure and travel service occupations n.e.c.	0.08%	0.11%
6221 Hairdressers and barbers	0.49%	0.47%
6222 Beauticians and related occupations	0.23%	0.28%
6231 Housekeepers and related occupations	0.12%	0.14%
6232 Caretakers	0.21%	0.25%
6240 Cleaning and housekeeping managers and supervisors	0.21%	0.26%
6250 Bed and breakfast and guest house owners and proprietors	0.02%	0.04%
6311 Police community support officers	0.04%	0.04%
6312 Parking and civil enforcement occupations	0.03%	0.05%
7111 Sales and retail assistants	2.46%	2.88%
7112 Retail cashiers and check-out operators	0.89%	0.35%
7113 Telephone salespersons	0.21%	0.06%
7114 Pharmacy and optical dispensing assistants	0.30%	0.27%
7115 Vehicle and parts salespersons and advisers	0.11%	0.10%
7121 Collector salespersons and credit agents	0.02%	0.02%
7122 Debt, rent and other cash collectors	0.07%	0.09%
7123 Roundspersons and van salespersons	0.06%	0.02%
7124 Market and street traders and assistants	0.05%	0.06%

7125 Visual merchandisers and related occupations	0.03%	0.01%
7129 Sales related occupations n.e.c.	0.21%	0.10%
7131 Shopkeepers and owners - retail and wholesale	0.30%	0.29%
7132 Sales supervisors - retail and wholesale	0.49%	0.54%
7211 Call and contact centre occupations	0.33%	0.33%
7212 Telephonists	0.02%	0.02%
7213 Communication operators	0.07%	0.09%
7214 Market research interviewers	0.05%	0.06%
7219 Customer service occupations n.e.c.	1.06%	1.13%
7220 Customer service supervisors	0.20%	0.19%
8111 Food, drink and tobacco process operatives	0.41%	0.54%
8112 Textile process operatives	0.04%	0.02%
8113 Chemical and related process operatives	0.13%	0.08%
8114 Plastics process operatives	0.06%	0.09%
8115 Metal making and treating process operatives	0.06%	0.06%
8119 Process operatives n.e.c.	0.08%	0.12%
8120 Metal working machine operatives	0.13%	0.13%
8131 Paper and wood machine operatives	0.07%	0.09%
8132 Mining and quarry workers and related operatives	0.03%	0.02%
8133 Energy plant operatives	0.04%	0.02%
8134 Water and sewerage plant operatives	0.05%	0.07%
8135 Printing machine assistants	0.02%	0.03%
8139 Plant and machine operatives n.e.c.	0.07%	0.10%
8141 Assemblers (electrical and electronic products)	0.08%	0.09%
8142 Assemblers (vehicles and metal goods)	0.10%	0.15%
8143 Routine inspectors and testers	0.23%	0.24%

8144 Weighers, graders and sorters	0.06%	0.05%
8145 Tyre, exhaust and windscreen fitters	0.03%	0.03%
8146 Sewing machinists	0.06%	0.09%
8149 Assemblers and routine operatives n.e.c.	0.09%	0.07%
8151 Scaffolders, staggers and riggers	0.08%	0.08%
8152 Road construction operatives	0.05%	0.06%
8153 Rail construction and maintenance operatives	0.02%	0.02%
8159 Construction operatives n.e.c.	0.24%	0.23%
8160 Production, factory and assembly supervisors	0.09%	0.13%
8211 Large goods vehicle drivers	0.78%	0.89%
8212 Bus and coach drivers	0.35%	0.34%
8213 Taxi and cab drivers and chauffeurs	0.45%	0.51%
8214 Delivery drivers and couriers	0.89%	0.99%
8215 Driving instructors	0.12%	0.13%
8219 Road transport drivers n.e.c.	0.24%	0.11%
8221 Crane drivers	0.04%	0.04%
8222 Fork-lift truck drivers	0.18%	0.20%
8229 Mobile machine drivers and operatives n.e.c.	0.15%	0.20%
8231 Train and tram drivers	0.07%	0.07%
8232 Marine and waterways transport operatives	0.03%	0.01%
8233 Air transport operatives	0.02%	0.02%
8234 Rail transport operatives	0.05%	0.04%
8239 Other drivers and transport operatives n.e.c.	0.04%	0.08%
9111 Farm workers	0.12%	0.08%
9112 Forestry and related workers	0.02%	0.02%
9119 Fishing and other elementary agriculture occupations n.e.c.	0.07%	0.08%
9121 Groundworkers	0.09%	0.12%

9129 Elementary construction occupations n.e.c.	0.32%	0.39%
9131 Industrial cleaning process occupations	0.76%	0.07%
9132 Packers, bottlers, canners and fillers	0.29%	0.27%
9139 Elementary process plant occupations n.e.c.	0.22%	0.14%
9211 Postal workers, mail sorters and messengers	0.42%	0.47%
9219 Elementary administration occupations n.e.c.	0.16%	0.06%
9221 Window cleaners	0.10%	0.12%
9222 Street cleaners	0.03%	0.03%
9223 Cleaners and domestics	0.92%	1.51%
9224 Launderers, dry cleaners and pressers	0.06%	0.05%
9225 Refuse and salvage occupations	0.14%	0.13%
9226 Vehicle valeters and cleaners	0.07%	0.05%
9229 Elementary cleaning occupations n.e.c.	0.03%	0.02%
9231 Security guards and related occupations	0.68%	0.45%
9232 School midday and crossing patrol occupations	0.21%	0.20%
9233 Exam invigilators	0.07%	0.08%
9241 Shelf fillers	0.16%	0.18%
9249 Elementary sales occupations n.e.c.	0.09%	0.12%
9251 Elementary storage supervisors	0.11%	0.12%
9252 Warehouse operatives	1.22%	1.35%
9253 Delivery operatives	0.05%	0.05%
9259 Elementary storage occupations n.e.c.	0.04%	0.05%
9261 Bar and catering supervisors	0.15%	0.16%
9262 Hospital porters	0.05%	0.05%
9263 Kitchen and catering assistants	1.10%	1.29%
9264 Waiters and waitresses	0.58%	0.79%
9265 Bar staff	0.47%	0.54%

9266 Coffee shop workers	0.12%	0.15%
9267 Leisure and theme park attendants	0.09%	0.10%
9269 Other elementary services occupations n.e.c.	0.13%	0.08%
Grand Total	100.00%	100.00%

Table 9 Differences in 4-digit SOC2020 groups between new and old baseline results, 2021 (000s)

Levels (000s)	Baseline original	Baseline corrected	Difference	% difference
1111 Chief executives and senior officials	101,374	141,827	40,454	40%
1112 Elected officers and representatives	13,337	11,808	-1,529	-11%
1121 Production managers and directors in manufacturing	230,372	258,484	28,112	12%
1122 Production managers and directors in construction	152,725	168,635	15,910	10%
1123 Production managers and directors in mining and energy	12,132	28,062	15,930	131%
1131 Financial managers and directors	444,425	332,478	-111,947	-25%
1132 Marketing, sales and advertising directors	232,882	268,296	35,415	15%
1133 Public relations and communications directors	30,954	13,906	-17,048	-55%
1134 Purchasing managers and directors	75,215	58,444	-16,771	-22%
1135 Charitable organisation managers and directors	33,641	52,923	19,282	57%
1136 Human resource managers and directors	207,996	238,410	30,414	15%
1137 Information technology directors	138,943	187,681	48,737	35%
1139 Functional managers and directors n.e.c.	133,155	92,119	-41,035	-31%
1140 Directors in logistics, warehousing and transport	14,787	25,429	10,642	72%
1150 Managers and directors in retail and wholesale	303,362	294,030	-9,332	-3%
1161 Officers in armed forces	32,449	33,988	1,539	5%
1162 Senior police officers	15,127	15,389	261	2%
1163 Senior officers in fire, ambulance, prison and related services	11,831	14,959	3,129	26%
1171 Health services and public health managers and directors	65,522	55,577	-9,944	-15%
1172 Social services managers and directors	34,959	47,100	12,141	35%
1211 Managers and proprietors in agriculture and horticulture	25,114	31,678	6,564	26%

1212 Managers and proprietors in forestry, fishing and related services	10,811	20,927	10,116	94%
1221 Hotel and accommodation managers and proprietors	41,526	57,578	16,052	39%
1222 Restaurant and catering establishment managers and proprietors	138,840	166,751	27,911	20%
1223 Publicans and managers of licensed premises	28,753	23,730	-5,023	-17%
1224 Leisure and sports managers	56,790	77,416	20,626	36%
1225 Travel agency managers and proprietors	8,246	14,999	6,752	82%
1231 Health care practice managers	26,444	37,099	10,655	40%
1232 Residential, day and domiciliary care managers and proprietors	56,840	76,700	19,860	35%
1233 Early education and childcare services proprietors	4,968	7,465	2,497	50%
1241 Managers in transport and distribution	158,866	83,800	-75,067	-47%
1242 Managers in storage and warehousing	80,923	85,331	4,408	5%
1243 Managers in logistics	42,361	46,874	4,514	11%
1251 Property, housing and estate managers	178,628	207,974	29,345	16%
1252 Garage managers and proprietors	17,126	25,485	8,358	49%
1253 Hairdressing and beauty salon managers and proprietors	18,722	18,511	-210	-1%
1254 Waste disposal and environmental services managers	11,806	18,198	6,392	54%
1255 Managers and directors in the creative industries	74,340	53,689	-20,651	-28%
1256 Betting shop and gambling establishment managers	15,745	22,285	6,540	42%
1257 Hire services managers and proprietors	11,082	17,980	6,898	62%
1258 Directors in consultancy services	38,396	82,454	44,058	115%
1259 Managers and proprietors in other services n.e.c.	80,576	145,199	64,623	80%
2111 Chemical scientists	22,662	39,551	16,889	75%
2112 Biological scientists	48,663	28,500	-20,163	-41%

2113 Biochemists and biomedical scientists	54,387	49,065	-5,322	-10%
2114 Physical scientists	41,452	29,154	-12,298	-30%
2115 Social and humanities scientists	38,535	40,203	1,668	4%
2119 Natural and social science professionals n.e.c.	28,163	26,143	-2,020	-7%
2121 Civil engineers	98,007	116,412	18,405	19%
2122 Mechanical engineers	60,985	73,917	12,931	21%
2123 Electrical engineers	38,509	32,672	-5,837	-15%
2124 Electronics engineers	25,076	37,918	12,843	51%
2125 Production and process engineers	50,769	37,899	-12,870	-25%
2126 Aerospace engineers	56,087	23,777	-32,310	-58%
2127 Engineering project managers and project engineers	38,589	50,298	11,709	30%
2129 Engineering professionals n.e.c.	165,134	75,556	-89,578	-54%
2131 IT project managers	70,963	115,232	44,269	62%
2132 IT managers	267,829	200,824	-67,006	-25%
2133 IT business analysts, architects and systems designers	261,700	141,541	-120,159	-46%
2134 Programmers and software development professionals	505,332	471,632	-33,700	-7%
2135 Cyber security professionals	38,856	34,246	-4,611	-12%
2136 IT quality and testing professionals	41,876	32,584	-9,293	-22%
2137 IT network professionals	26,503	33,216	6,713	25%
2139 Information technology professionals n.e.c.	175,487	139,762	-35,724	-20%
2141 Web design professionals	28,006	32,260	4,253	15%
2142 Graphic and multimedia designers	116,440	102,907	-13,533	-12%
2151 Conservation professionals	24,917	20,507	-4,410	-18%

2152 Environment professionals	52,575	51,257	-1,317	-3%
2161 Research and development (R&D) managers	74,038	97,276	23,238	31%
2162 Other researchers, unspecified discipline	67,629	57,915	-9,714	-14%
2211 Generalist medical practitioners	189,157	190,552	1,394	1%
2212 Specialist medical practitioners	169,774	183,847	14,073	8%
2221 Physiotherapists	65,002	64,661	-342	-1%
2222 Occupational therapists	46,544	49,262	2,718	6%
2223 Speech and language therapists	24,739	26,126	1,386	6%
2224 Psychotherapists and cognitive behaviour therapists	38,897	40,290	1,393	4%
2225 Clinical psychologists	20,533	25,098	4,565	22%
2226 Other psychologists	30,952	33,073	2,121	7%
2229 Therapy professionals n.e.c.	47,566	57,575	10,009	21%
2231 Midwifery nurses	45,811	42,535	-3,277	-7%
2232 Community nurses	86,210	86,590	380	0%
2233 Specialist nurses	76,148	88,316	12,168	16%
2234 Nurse practitioners	57,739	42,397	-15,342	-27%
2235 Mental health nurses	47,547	54,057	6,510	14%
2236 Children's nurses	24,855	33,721	8,866	36%
2237 Other nursing professionals	259,180	378,083	118,903	46%
2240 Veterinarians	23,327	22,397	-930	-4%
2251 Pharmacists	80,935	75,676	-5,260	-6%
2252 Optometrists	23,538	24,903	1,365	6%
2253 Dental practitioners	37,440	36,206	-1,234	-3%

2254 Medical radiographers	41,763	41,815	52	0%
2255 Paramedics	34,436	39,611	5,175	15%
2256 Podiatrists	16,093	15,076	-1,016	-6%
2259 Other health professionals n.e.c.	93,693	58,113	-35,580	-38%
2311 Higher education teaching professionals	247,515	252,639	5,124	2%
2312 Further education teaching professionals	63,269	83,285	20,016	32%
2313 Secondary education teaching professionals	376,885	506,984	130,099	35%
2314 Primary education teaching professionals	361,992	463,753	101,761	28%
2315 Nursery education teaching professionals	22,687	25,893	3,206	14%
2316 Special needs education teaching professionals	98,109	75,768	-22,341	-23%
2317 Teachers of English as a foreign language	30,702	30,541	-161	-1%
2319 Teaching professionals n.e.c.	299,487	134,976	-164,511	-55%
2321 Head teachers and principals	51,072	31,852	-19,220	-38%
2322 Education managers	49,921	72,522	22,601	45%
2323 Education advisers and school inspectors	41,608	56,503	14,894	36%
2324 Early education and childcare services managers	39,525	44,475	4,951	13%
2329 Other educational professionals n.e.c	57,482	49,605	-7,877	-14%
2411 Barristers and judges	34,838	33,057	-1,781	-5%
2412 Solicitors and lawyers	182,297	201,781	19,484	11%
2419 Legal professionals n.e.c.	73,471	82,198	8,726	12%
2421 Chartered and certified accountants	204,433	209,897	5,464	3%
2422 Finance and investment analysts and advisers	257,402	296,666	39,264	15%
2423 Taxation experts	57,751	66,088	8,337	14%

2431 Management consultants and business analysts	194,661	188,810	-5,851	-3%
2432 Marketing and commercial managers	141,938	105,908	-36,031	-25%
2433 Actuaries, economists and statisticians	63,006	88,488	25,482	40%
2434 Business and related research professionals	51,702	68,515	16,813	33%
2435 Professional/Chartered company secretaries	4,628	5,273	645	14%
2439 Business, research and administrative professionals n.e.c.	85,741	86,970	1,229	1%
2440 Business and financial project management professionals	325,553	256,338	-69,215	-21%
2451 Architects	22,923	45,814	22,891	100%
2452 Chartered architectural technologists, planning officers and consultants	38,703	57,620	18,917	49%
2453 Quantity surveyors	57,239	64,972	7,733	14%
2454 Chartered surveyors	62,281	75,196	12,915	21%
2455 Construction project managers and related professionals	54,909	101,600	46,691	85%
2461 Social workers	119,676	133,629	13,952	12%
2462 Probation officers	14,162	16,840	2,678	19%
2463 Clergy	59,756	67,702	7,946	13%
2464 Youth work professionals	14,908	9,349	-5,560	-37%
2469 Welfare professionals n.e.c.	22,984	25,407	2,423	11%
2471 Librarians	22,848	20,504	-2,344	-10%
2472 Archivists and curators	17,178	15,598	-1,580	-9%
2481 Quality control and planning engineers	29,352	45,079	15,726	54%
2482 Quality assurance and regulatory professionals	133,528	117,285	-16,243	-12%
2483 Environmental health professionals	8,607	12,694	4,087	47%
2491 Newspaper and periodical editors	33,499	41,665	8,166	24%

2492 Newspaper and periodical journalists and reporters	70,351	52,974	-17,376	-25%
2493 Public relations professionals	73,990	73,973	-16	0%
2494 Advertising accounts managers and creative directors	48,588	57,978	9,390	19%
3111 Laboratory technicians	89,456	59,765	-29,692	-33%
3112 Electrical and electronics technicians	21,252	19,029	-2,223	-10%
3113 Engineering technicians	61,633	46,640	-14,994	-24%
3114 Building and civil engineering technicians	15,053	7,964	-7,088	-47%
3115 Quality assurance technicians	38,982	27,641	-11,341	-29%
3116 Planning, process and production technicians	29,367	31,102	1,734	6%
3119 Science, engineering and production technicians n.e.c.	38,533	41,061	2,528	7%
3120 CAD, drawing and architectural technicians	53,572	74,464	20,891	39%
3131 IT operations technicians	91,876	115,929	24,054	26%
3132 IT user support technicians	132,835	97,467	-35,368	-27%
3133 Database administrators and web content technicians	55,779	73,067	17,288	31%
3211 Dispensing opticians	8,479	6,756	-1,723	-20%
3212 Pharmaceutical technicians	37,779	38,200	422	1%
3213 Medical and dental technicians	52,832	31,762	-21,071	-40%
3214 Complementary health associate professionals	32,373	40,682	8,309	26%
3219 Health associate professionals n.e.c.	25,808	36,769	10,961	42%
3221 Youth and community workers	74,184	74,060	-124	0%
3222 Child and early years officers	65,109	51,595	-13,514	-21%
3223 Housing officers	63,603	74,146	10,543	17%
3224 Counsellors	38,343	44,077	5,734	15%

3229 Welfare and housing associate professionals n.e.c.	197,485	134,541	-62,944	-32%
3231 Higher level teaching assistants	296,344	42,298	-254,045	-86%
3232 Early education and childcare practitioners	85,597	69,306	-16,292	-19%
3240 Veterinary nurses	22,750	20,589	-2,160	-9%
3311 Non-commissioned officers and other ranks	53,259	62,676	9,417	18%
3312 Police officers (sergeant and below)	109,945	184,073	74,128	67%
3313 Fire service officers (watch manager and below)	34,346	38,560	4,213	12%
3314 Prison service officers (below principal officer)	44,109	45,309	1,200	3%
3319 Protective service associate professionals n.e.c.	82,111	111,124	29,013	35%
3411 Artists	38,717	52,471	13,755	36%
3412 Authors, writers and translators	89,580	118,708	29,129	33%
3413 Actors, entertainers and presenters	54,987	41,412	-13,575	-25%
3414 Dancers and choreographers	13,270	12,019	-1,250	-9%
3415 Musicians	36,773	42,970	6,197	17%
3416 Arts officers, producers and directors	89,968	116,039	26,071	29%
3417 Photographers, audio-visual and broadcasting equipment operators	71,386	89,811	18,425	26%
3421 Interior designers	23,485	30,159	6,674	28%
3422 Clothing, fashion and accessories designers	29,550	24,376	-5,174	-18%
3429 Design occupations n.e.c.	31,742	24,301	-7,441	-23%
3431 Sports players	12,851	14,884	2,033	16%
3432 Sports coaches, instructors and officials	101,862	78,663	-23,199	-23%
3433 Fitness and wellbeing instructors	67,710	65,069	-2,640	-4%
3511 Aircraft pilots and air traffic controllers	24,975	24,972	-3	0%

3512 Ship and hovercraft officers	18,579	20,034	1,455	8%
3520 Legal associate professionals	67,791	55,730	-12,062	-18%
3531 Brokers	41,593	57,167	15,574	37%
3532 Insurance underwriters	46,312	46,174	-138	0%
3533 Financial and accounting technicians	16,628	15,299	-1,329	-8%
3534 Financial accounts managers	140,043	139,898	-144	0%
3541 Estimators, valuers and assessors	74,368	50,501	-23,866	-32%
3542 Importers and exporters	8,461	7,776	-684	-8%
3543 Project support officers	70,483	41,051	-29,432	-42%
3544 Data analysts	63,133	120,550	57,417	91%
3549 Business associate professionals n.e.c.	105,702	79,286	-26,417	-25%
3551 Buyers and procurement officers	69,843	79,533	9,690	14%
3552 Business sales executives	177,232	135,741	-41,491	-23%
3553 Merchandisers	20,049	25,979	5,929	30%
3554 Marketing associate professionals	196,643	154,658	-41,985	-21%
3555 Estate agents and auctioneers	53,333	59,721	6,388	12%
3556 Sales accounts and business development managers	355,203	262,319	-92,884	-26%
3557 Events and exhibition managers and organisers	59,655	82,022	22,367	37%
3560 Public services associate professionals	107,994	149,541	41,547	38%
3571 Human resources and industrial relations officers	184,727	163,256	-21,470	-12%
3572 Careers advisers and vocational guidance specialists	31,525	34,216	2,691	9%
3573 Information technology trainers	7,769	14,610	6,842	88%
3574 Other vocational and industrial trainers	156,684	179,069	22,385	14%

3581 Inspectors of standards and regulations	45,131	51,315	6,185	14%
3582 Health and safety managers and officers	77,729	72,653	-5,076	-7%
4111 National government administrative occupations	230,078	225,628	-4,450	-2%
4112 Local government administrative occupations	148,772	148,810	38	0%
4113 Officers of non-governmental organisations	132,749	57,355	-75,393	-57%
4121 Credit controllers	44,715	51,504	6,789	15%
4122 Book-keepers, payroll managers and wages clerks	502,749	544,236	41,487	8%
4123 Bank and post office clerks	112,639	97,568	-15,071	-13%
4124 Finance officers	52,570	53,433	863	2%
4129 Financial administrative occupations n.e.c.	181,115	213,042	31,927	18%
4131 Records clerks and assistants	146,957	129,639	-17,318	-12%
4132 Pensions and insurance clerks and assistants	86,252	98,332	12,081	14%
4133 Stock control clerks and assistants	96,699	77,699	-19,000	-20%
4134 Transport and distribution clerks and assistants	85,348	62,677	-22,671	-27%
4135 Library clerks and assistants	29,154	33,847	4,693	16%
4136 Human resources administrative occupations	40,566	64,027	23,461	58%
4141 Office managers	187,825	230,468	42,644	23%
4142 Office supervisors	51,617	25,455	-26,163	-51%
4143 Customer service managers	163,832	74,150	-89,681	-55%
4151 Sales administrators	168,427	59,585	-108,842	-65%
4152 Data entry administrators	46,079	29,631	-16,448	-36%
4159 Other administrative occupations n.e.c.	646,854	575,192	-71,663	-11%
4211 Medical secretaries	80,058	92,369	12,310	15%

4212 Legal secretaries	46,246	60,130	13,884	30%
4213 School secretaries	98,736	68,067	-30,669	-31%
4214 Company secretaries and administrators	24,233	31,025	6,793	28%
4215 Personal assistants and other secretaries	181,531	233,482	51,951	29%
4216 Receptionists	235,917	258,335	22,418	10%
4217 Typists and related keyboard occupations	5,498	7,858	2,360	43%
5111 Farmers	109,440	128,450	19,010	17%
5112 Horticultural trades	13,070	8,256	-4,814	-37%
5113 Gardeners and landscape gardeners	165,415	164,047	-1,368	-1%
5114 Groundsmen and greenkeepers	30,761	30,324	-437	-1%
5119 Agricultural and fishing trades n.e.c.	38,619	37,966	-653	-2%
5211 Sheet metal workers	11,708	16,783	5,075	43%
5212 Metal plate workers, smiths, moulders and related occupations	10,292	10,802	510	5%
5213 Welding trades	32,752	53,199	20,447	62%
5214 Pipe fitters	7,349	10,966	3,617	49%
5221 Metal machining setters and setter-operators	34,150	27,769	-6,381	-19%
5222 Tool makers, tool fitters and markers-out	8,482	10,193	1,711	20%
5223 Metal working production and maintenance fitters	177,063	162,675	-14,387	-8%
5224 Precision instrument makers and repairers	20,171	26,608	6,437	32%
5225 Air-conditioning and refrigeration installers and repairers	5,432	17,208	11,776	217%
5231 Vehicle technicians, mechanics and electricians	162,575	159,010	-3,565	-2%
5232 Vehicle body builders and repairers	26,461	28,704	2,243	8%
5233 Vehicle paint technicians	14,242	16,731	2,489	17%

5234 Aircraft maintenance and related trades	85,931	30,319	-55,611	-65%
5235 Boat and ship builders and repairers	10,238	12,564	2,326	23%
5236 Rail and rolling stock builders and repairers	11,864	16,492	4,628	39%
5241 Electricians and electrical fitters	245,108	245,411	303	0%
5242 Telecoms and related network installers and repairers	73,830	85,888	12,058	16%
5243 TV, video and audio servicers and repairers	6,324	6,186	-138	-2%
5244 Computer system and equipment installers and servicers	36,716	53,501	16,785	46%
5245 Security system installers and repairers	16,497	20,688	4,191	25%
5246 Electrical service and maintenance mechanics and repairers	37,436	27,162	-10,274	-27%
5249 Electrical and electronic trades n.e.c.	32,030	21,240	-10,791	-34%
5250 Skilled metal, electrical and electronic trades supervisors	36,527	46,668	10,141	28%
5311 Steel erectors	4,796	6,652	1,856	39%
5312 Stonemasons and related trades	10,909	13,408	2,499	23%
5313 Bricklayers	51,563	46,205	-5,358	-10%
5314 Roofers, roof tilers and slaters	34,623	33,460	-1,163	-3%
5315 Plumbers & heating and ventilating installers and repairers	142,205	150,754	8,549	6%
5316 Carpenters and joiners	189,873	203,247	13,374	7%
5317 Glaziers, window fabricators and fitters	62,014	33,944	-28,070	-45%
5319 Construction and building trades n.e.c.	203,190	221,581	18,391	9%
5321 Plasterers	52,186	54,833	2,647	5%
5322 Floorers and wall tilers	34,546	45,941	11,395	33%
5323 Painters and decorators	84,423	86,858	2,436	3%
5330 Construction and building trades supervisors	53,804	62,490	8,686	16%

5411 Upholsterers	20,319	24,577	4,258	21%
5412 Footwear and leather working trades	5,573	6,051	477	9%
5413 Tailors and dressmakers	12,304	12,262	-42	0%
5419 Textiles, garments and related trades n.e.c.	9,866	9,920	54	1%
5421 Pre-press technicians	3,169	2,043	-1,127	-36%
5422 Printers	13,951	22,469	8,518	61%
5423 Print finishing and binding workers	10,567	11,854	1,287	12%
5431 Butchers	33,800	30,341	-3,459	-10%
5432 Bakers and flour confectioners	42,848	35,057	-7,791	-18%
5433 Fishmongers and poultry dressers	4,679	4,691	12	0%
5434 Chefs	211,313	219,711	8,397	4%
5435 Cooks	69,218	72,243	3,025	4%
5436 Catering and bar managers	92,709	69,691	-23,018	-25%
5441 Glass and ceramics makers, decorators and finishers	18,486	7,812	-10,674	-58%
5442 Furniture makers and other craft woodworkers	62,267	33,667	-28,600	-46%
5443 Florists	15,907	15,752	-155	-1%
5449 Other skilled trades n.e.c.	46,593	62,466	15,873	34%
6111 Early education and childcare assistants	160,870	154,449	-6,421	-4%
6112 Teaching assistants	108,313	332,467	224,154	207%
6113 Educational support assistants	154,082	163,805	9,723	6%
6114 Childminders	55,217	63,626	8,408	15%
6116 Nannies and au pairs	26,626	27,125	499	2%
6117 Playworkers	23,129	25,401	2,272	10%

6121 Pest control officers	11,429	8,915	-2,515	-22%
6129 Animal care services occupations n.e.c.	100,110	109,432	9,322	9%
6131 Nursing auxiliaries and assistants	530,606	288,152	-242,454	-46%
6132 Ambulance staff (excluding paramedics)	38,210	40,545	2,335	6%
6133 Dental nurses	61,563	57,381	-4,182	-7%
6134 Houseparents and residential wardens	28,254	24,321	-3,932	-14%
6135 Care workers and home carers	905,735	1,022,597	116,862	13%
6136 Senior care workers	121,302	87,548	-33,754	-28%
6137 Care escorts	27,787	29,884	2,096	8%
6138 Undertakers, mortuary and crematorium assistants	27,485	32,977	5,492	20%
6211 Sports and leisure assistants	74,989	67,211	-7,778	-10%
6212 Travel agents	37,121	39,066	1,945	5%
6213 Air travel assistants	43,366	41,233	-2,133	-5%
6214 Rail travel assistants	23,277	25,413	2,136	9%
6219 Leisure and travel service occupations n.e.c.	32,554	38,130	5,577	17%
6221 Hairdressers and barbers	173,562	167,713	-5,849	-3%
6222 Beauticians and related occupations	92,173	100,126	7,953	9%
6231 Housekeepers and related occupations	41,390	51,622	10,232	25%
6232 Caretakers	74,182	88,949	14,767	20%
6240 Cleaning and housekeeping managers and supervisors	77,774	93,920	16,147	21%
6250 Bed and breakfast and guest house owners and proprietors	8,573	13,883	5,310	62%
6311 Police community support officers	12,982	12,940	-41	0%
6312 Parking and civil enforcement occupations	13,949	17,299	3,350	24%

7111 Sales and retail assistants	1,030,749	1,230,098	199,349	19%
7112 Retail cashiers and check-out operators	362,870	151,430	-211,440	-58%
7113 Telephone salespersons	77,847	23,868	-53,979	-69%
7114 Pharmacy and optical dispensing assistants	118,218	117,300	-918	-1%
7115 Vehicle and parts salespersons and advisers	49,173	44,810	-4,363	-9%
7121 Collector salespersons and credit agents	9,865	8,577	-1,288	-13%
7122 Debt, rent and other cash collectors	30,969	36,556	5,588	18%
7123 Roundspersons and van salespersons	21,360	7,292	-14,068	-66%
7124 Market and street traders and assistants	22,991	25,321	2,330	10%
7125 Visual merchandisers and related occupations	10,250	6,247	-4,004	-39%
7129 Sales related occupations n.e.c.	84,579	40,327	-44,252	-52%
7131 Shopkeepers and owners - retail and wholesale	125,159	122,175	-2,984	-2%
7132 Sales supervisors - retail and wholesale	206,683	230,255	23,572	11%
7211 Call and contact centre occupations	121,782	132,941	11,159	9%
7212 Telephonists	9,703	7,126	-2,577	-27%
7213 Communication operators	27,494	35,151	7,656	28%
7214 Market research interviewers	17,129	23,764	6,636	39%
7219 Customer service occupations n.e.c.	391,610	452,557	60,948	16%
7220 Customer service supervisors	70,002	77,903	7,901	11%
8111 Food, drink and tobacco process operatives	143,987	188,560	44,573	31%
8112 Textile process operatives	14,950	8,566	-6,384	-43%
8113 Chemical and related process operatives	41,485	29,759	-11,726	-28%
8114 Plastics process operatives	19,718	32,906	13,187	67%

8115 Metal making and treating process operatives	19,013	22,592	3,579	19%
8119 Process operatives n.e.c.	28,698	43,177	14,479	50%
8120 Metal working machine operatives	45,631	45,804	172	0%
8131 Paper and wood machine operatives	29,212	30,115	903	3%
8132 Mining and quarry workers and related operatives	9,444	6,715	-2,728	-29%
8133 Energy plant operatives	13,058	7,083	-5,975	-46%
8134 Water and sewerage plant operatives	15,063	24,646	9,583	64%
8135 Printing machine assistants	7,481	11,927	4,446	59%
8139 Plant and machine operatives n.e.c.	25,372	33,897	8,525	34%
8141 Assemblers (electrical and electronic products)	24,737	30,965	6,228	25%
8142 Assemblers (vehicles and metal goods)	34,243	52,985	18,741	55%
8143 Routine inspectors and testers	79,806	83,302	3,495	4%
8144 Weighers, graders and sorters	19,113	18,785	-328	-2%
8145 Tyre, exhaust and windscreen fitters	10,696	10,013	-683	-6%
8146 Sewing machinists	22,918	30,464	7,547	33%
8149 Assemblers and routine operatives n.e.c.	40,119	25,014	-15,106	-38%
8151 Scaffolders, staggers and riggers	24,229	28,839	4,610	19%
8152 Road construction operatives	18,812	19,596	783	4%
8153 Rail construction and maintenance operatives	8,620	7,179	-1,441	-17%
8159 Construction operatives n.e.c.	89,618	79,467	-10,151	-11%
8160 Production, factory and assembly supervisors	31,049	47,383	16,334	53%
8211 Large goods vehicle drivers	285,168	312,264	27,096	10%
8212 Bus and coach drivers	118,946	117,651	-1,295	-1%

8213 Taxi and cab drivers and chauffeurs	155,294	176,932	21,638	14%
8214 Delivery drivers and couriers	311,106	347,274	36,168	12%
8215 Driving instructors	42,551	46,427	3,875	9%
8219 Road transport drivers n.e.c.	85,172	37,483	-47,689	-56%
8221 Crane drivers	13,286	13,016	-270	-2%
8222 Fork-lift truck drivers	69,296	69,404	108	0%
8229 Mobile machine drivers and operatives n.e.c.	59,727	69,019	9,292	16%
8231 Train and tram drivers	25,613	25,444	-168	-1%
8232 Marine and waterways transport operatives	11,618	4,007	-7,612	-66%
8233 Air transport operatives	6,469	8,509	2,041	32%
8234 Rail transport operatives	17,414	15,345	-2,069	-12%
8239 Other drivers and transport operatives n.e.c.	20,501	29,068	8,568	42%
9111 Farm workers	46,298	28,261	-18,037	-39%
9112 Forestry and related workers	8,322	7,829	-493	-6%
9119 Fishing and other elementary agriculture occupations n.e.c.	28,485	27,236	-1,249	-4%
9121 Groundworkers	46,504	40,223	-6,282	-14%
9129 Elementary construction occupations n.e.c.	129,486	130,755	1,270	1%
9131 Industrial cleaning process occupations	311,714	23,442	-288,272	-92%
9132 Packers, bottlers, canners and fillers	123,654	90,252	-33,402	-27%
9139 Elementary process plant occupations n.e.c.	98,254	46,962	-51,293	-52%
9211 Postal workers, mail sorters and messengers	175,097	182,684	7,587	4%
9219 Elementary administration occupations n.e.c.	60,458	25,454	-35,003	-58%
9221 Window cleaners	34,558	48,603	14,045	41%

9222 Street cleaners	12,648	13,116	468	4%
9223 Cleaners and domestics	357,412	594,766	237,353	66%
9224 Launderers, dry cleaners and pressers	20,732	19,661	-1,072	-5%
9225 Refuse and salvage occupations	50,373	52,388	2,015	4%
9226 Vehicle valeters and cleaners	27,409	21,254	-6,155	-22%
9229 Elementary cleaning occupations n.e.c.	12,258	7,045	-5,213	-43%
9231 Security guards and related occupations	261,783	176,596	-85,186	-33%
9232 School midday and crossing patrol occupations	75,809	77,916	2,107	3%
9233 Exam invigilators	26,110	32,235	6,124	23%
9241 Shelf fillers	58,300	68,826	10,527	18%
9249 Elementary sales occupations n.e.c.	35,664	46,557	10,893	31%
9251 Elementary storage supervisors	41,492	45,977	4,484	11%
9252 Warehouse operatives	488,565	531,460	42,895	9%
9253 Delivery operatives	21,800	19,053	-2,747	-13%
9259 Elementary storage occupations n.e.c.	15,184	18,796	3,612	24%
9261 Bar and catering supervisors	53,404	61,732	8,328	16%
9262 Hospital porters	16,933	19,251	2,319	14%
9263 Kitchen and catering assistants	439,973	508,467	68,493	16%
9264 Waiters and waitresses	260,034	307,005	46,971	18%
9265 Bar staff	190,461	210,668	20,207	11%
9266 Coffee shop workers	54,752	59,940	5,188	9%
9267 Leisure and theme park attendants	36,388	40,566	4,178	11%
9269 Other elementary services occupations n.e.c.	47,089	30,781	-16,308	-35%

Grand Total	35,139,638	35,139,638	0	0%
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Annex B: Graphical presentation of impacts at 2-digit level

Key

The following charts show how the ONS corrections have impacted on the estimates of employment by occupation at the 2-digit level 2021-2035. The differences shown are those between original (old) and revised (new) projections at the 2-digit level of SOC 2020. The dotted lines are based on the LFS historical data, the solid lines show the new projections, and the dashed lines are the original projections to 2035.

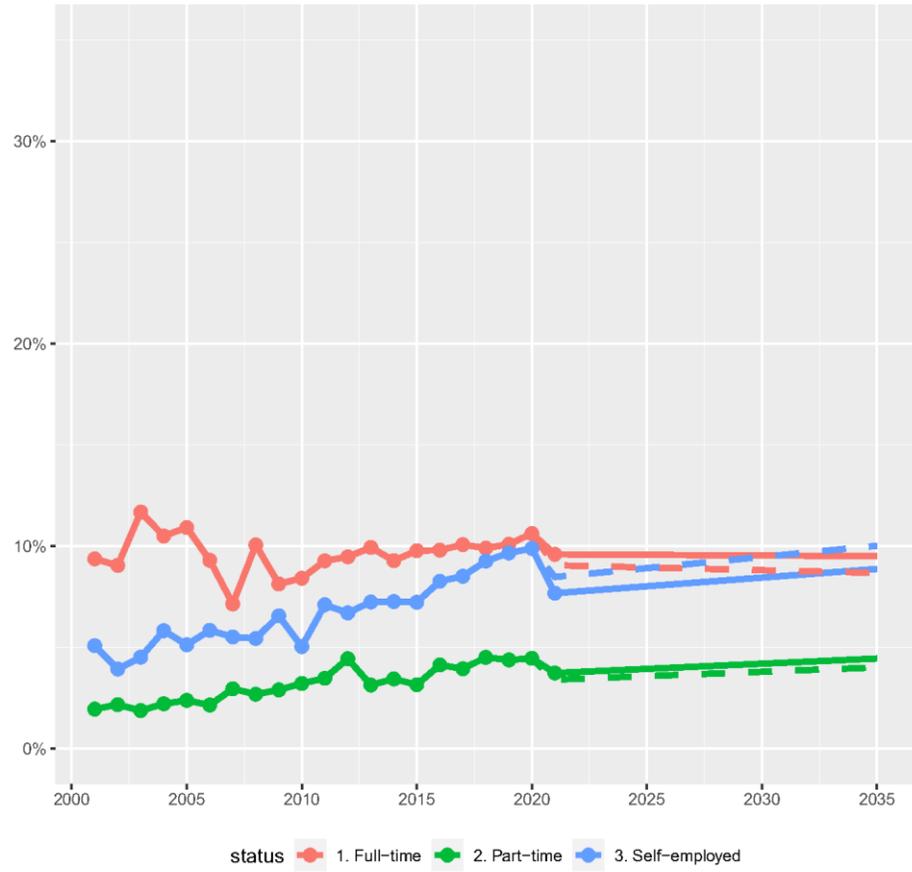
Results are presented separately by gender and employment status (full and part-time employee or self-employed).

These employment estimates are based on a combination of LFS and various other data as described in the Technical Report.⁴

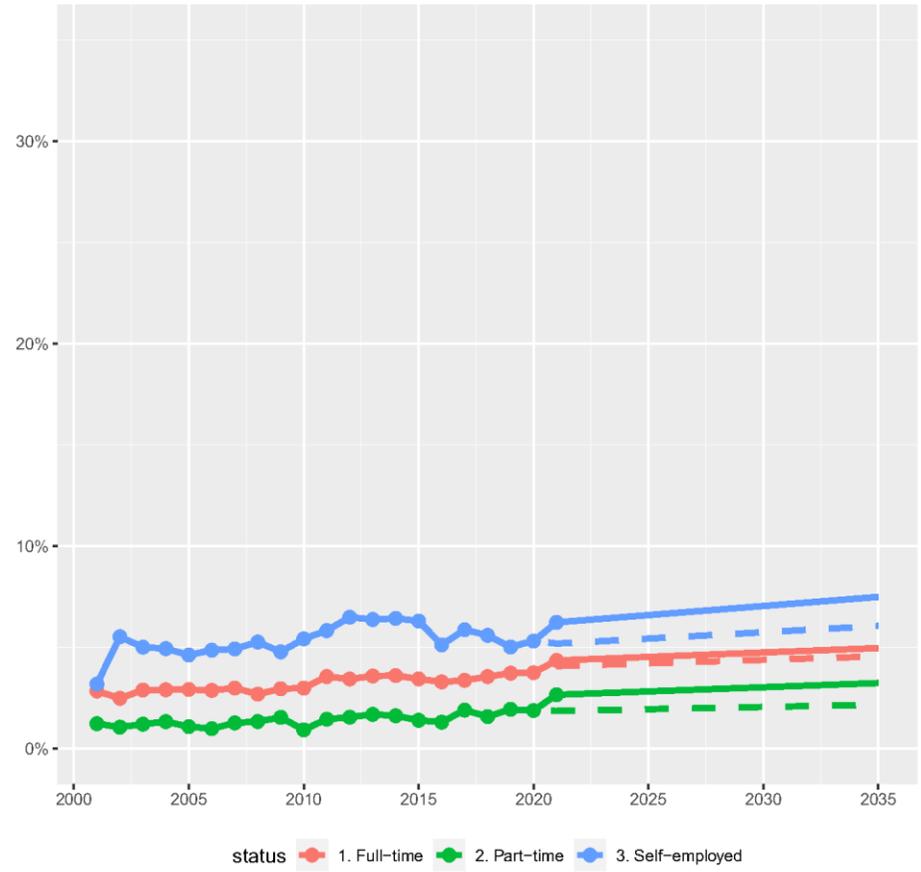
There are some significant differences at the 2-digit level between the old and new results, especially for 2021, which reflects ONS statements that their recoding had introduced some new inconsistencies.

⁴ Wilson, R. Bosworth, D., Bosworth, L., Cardenas Rubio, J., Day, R., Patel, S., Thong, C., and Bui, H. (2022). *The Skills Imperative 2035: Occupational Outlook – Long-run employment prospects for the UK. Working Paper 2c: Technical report on sources and methods*. Slough: NFER.

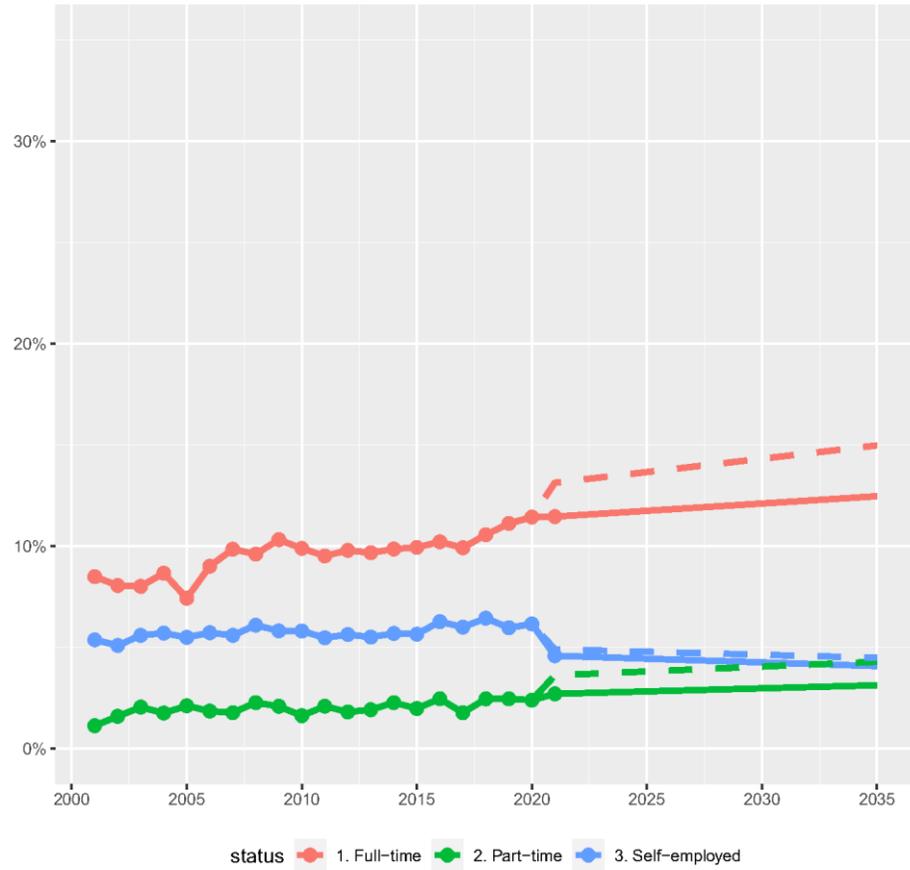
1. Males 11 Corporate managers and directors



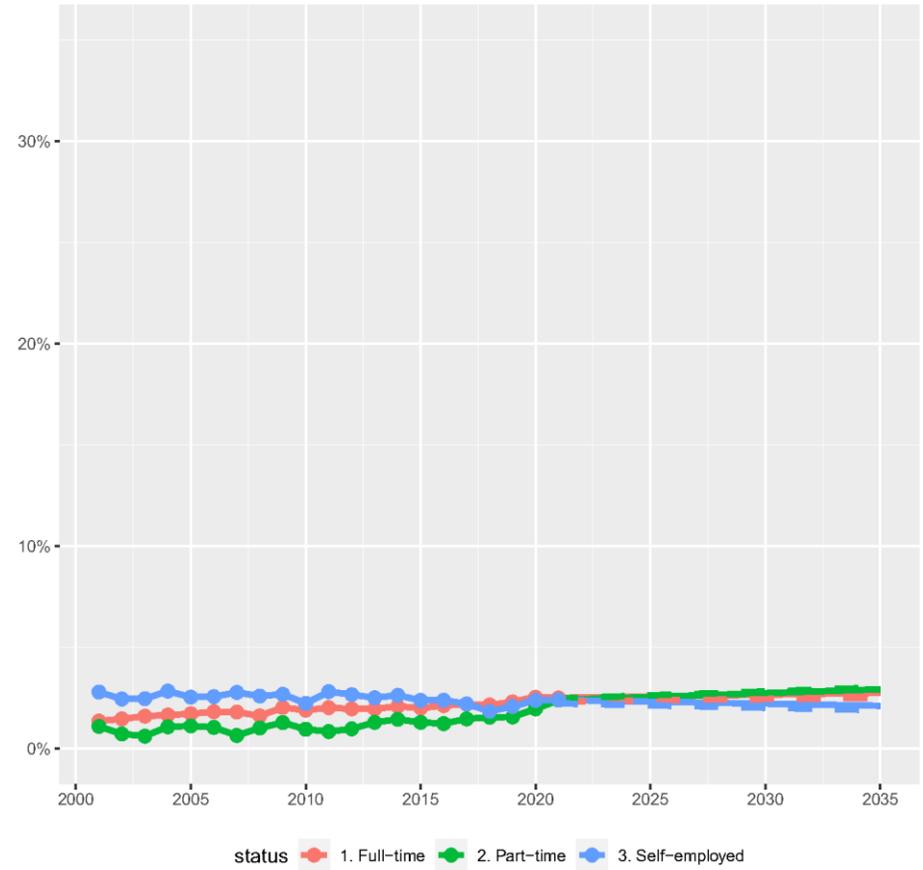
1. Males 12 Other managers and proprietors



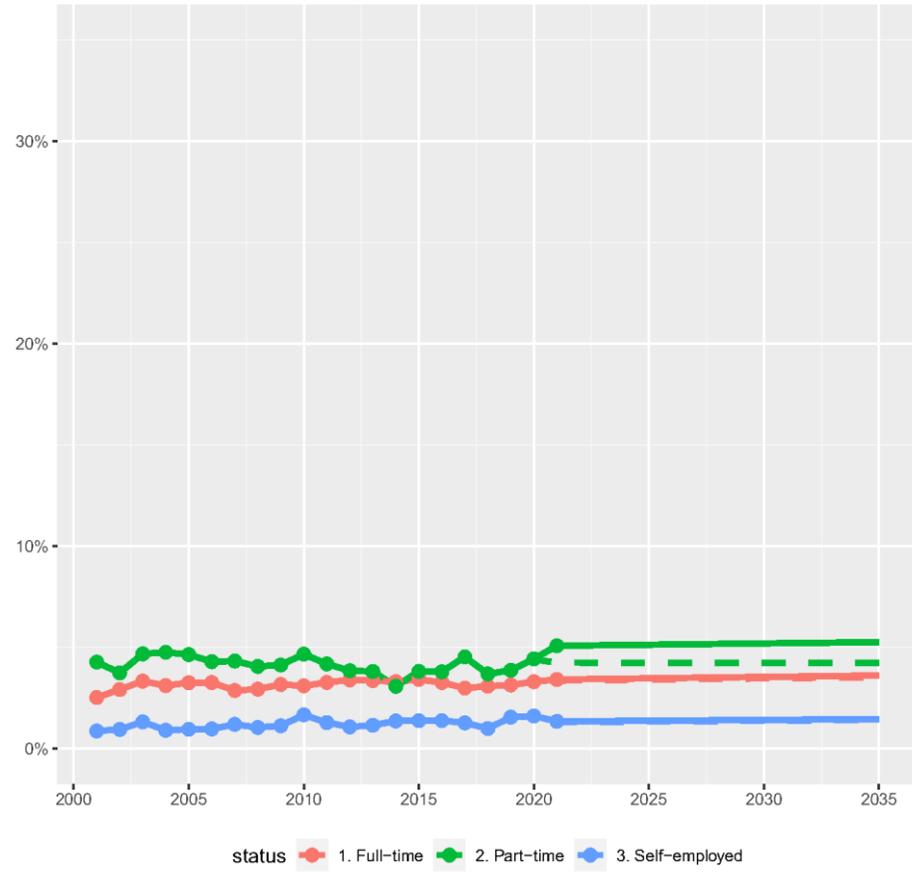
1. Males 21 Science, research, engineering and technology professionals



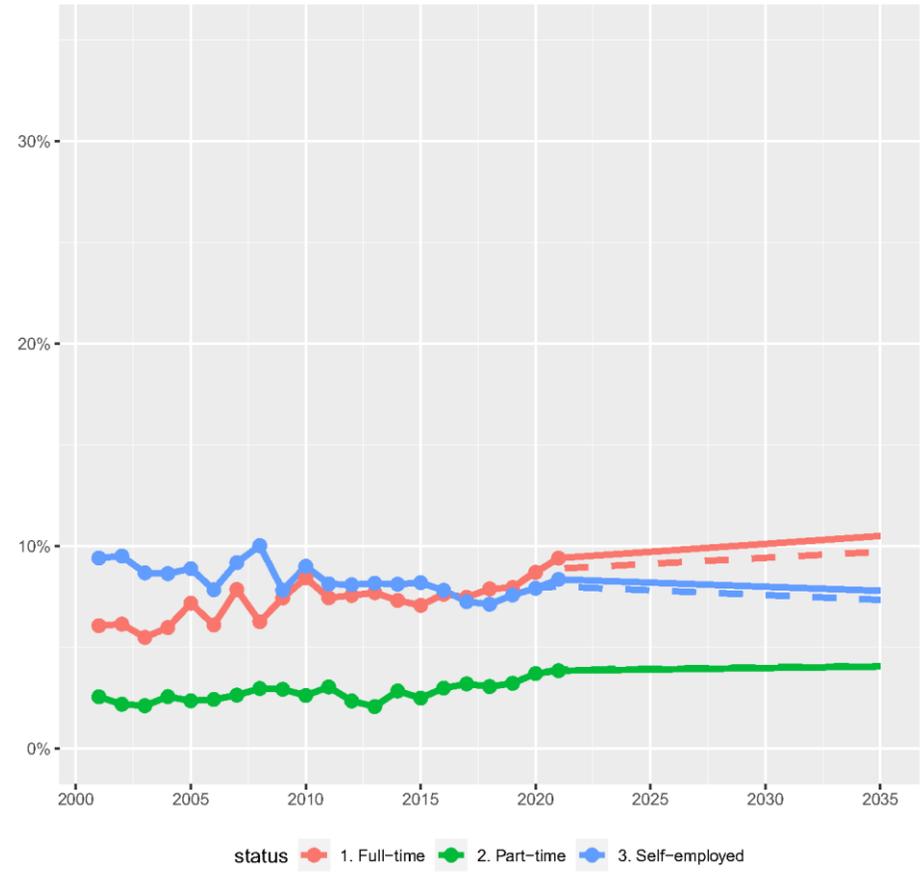
1. Males 22 Health professionals



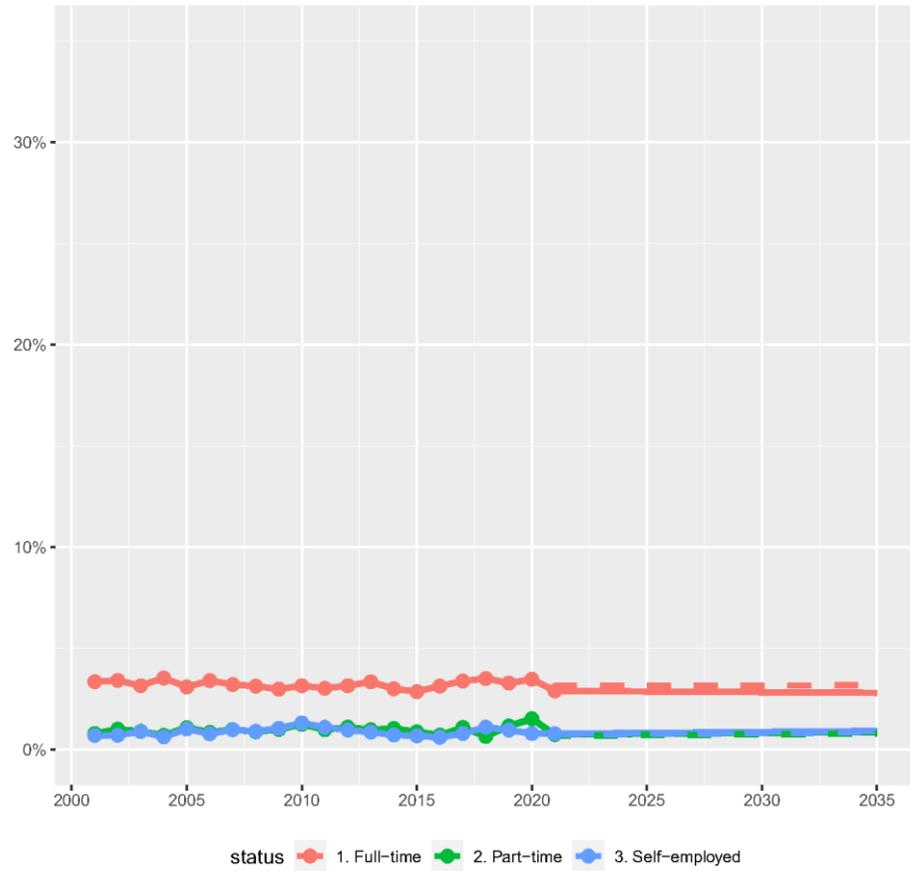
1. Males 23 Teaching and other educational professionals



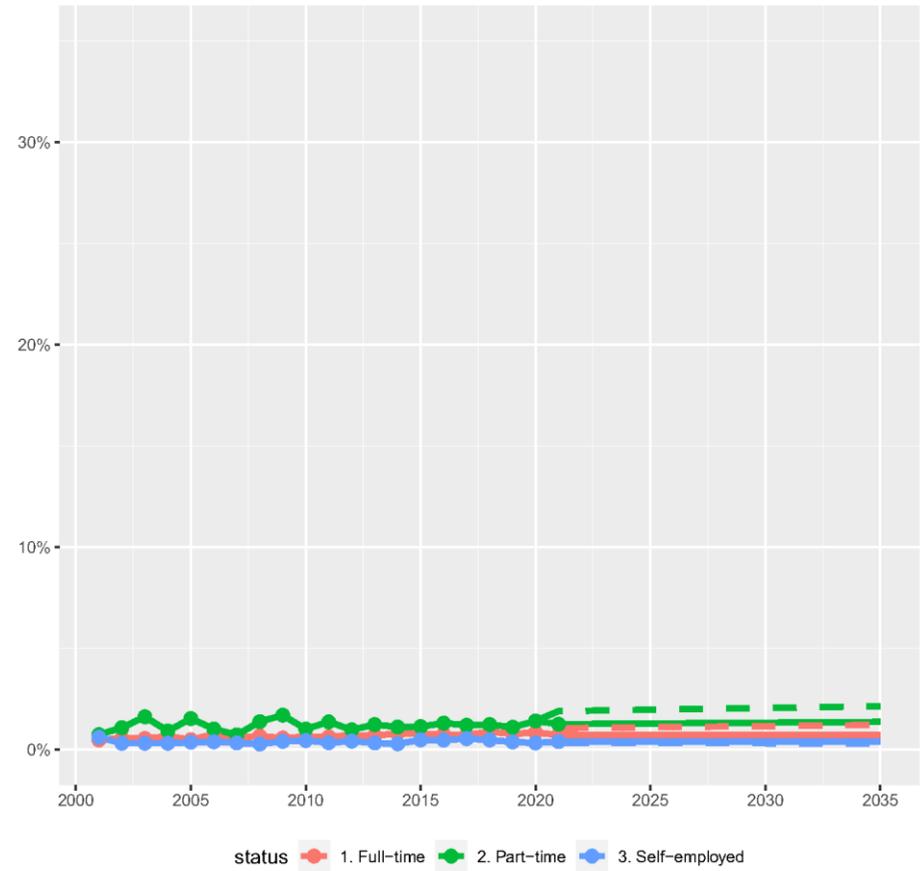
1. Males 24 Business, media and public service professionals



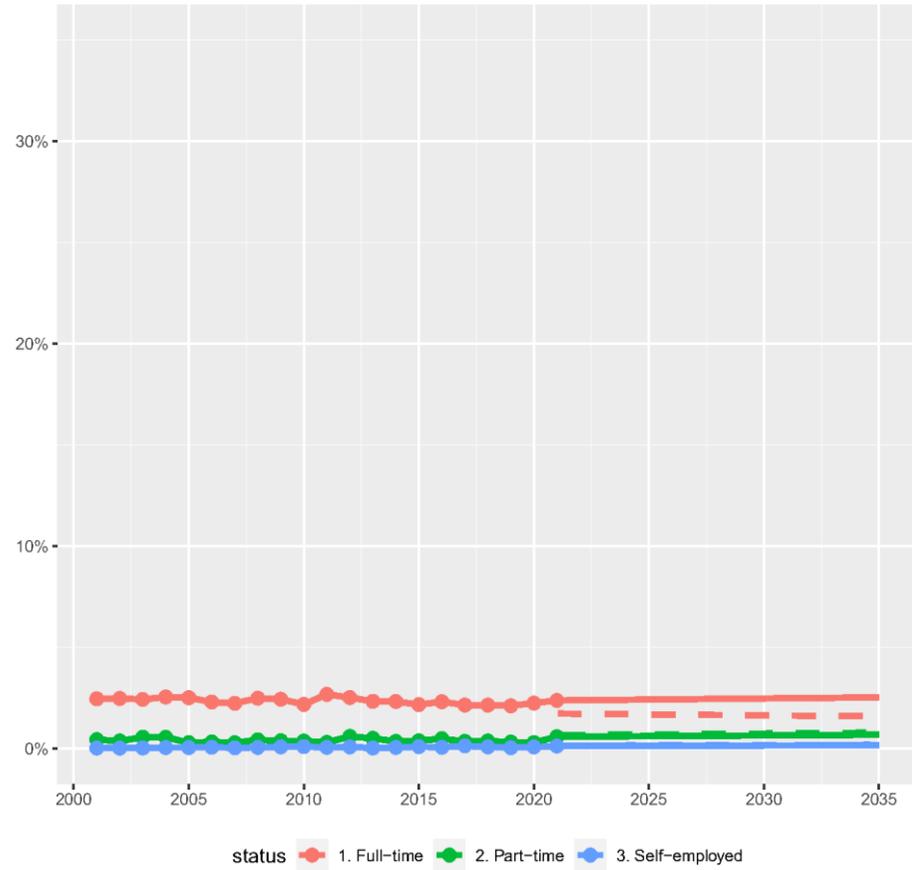
1. Males 31 Science, engineering and technology associate professionals



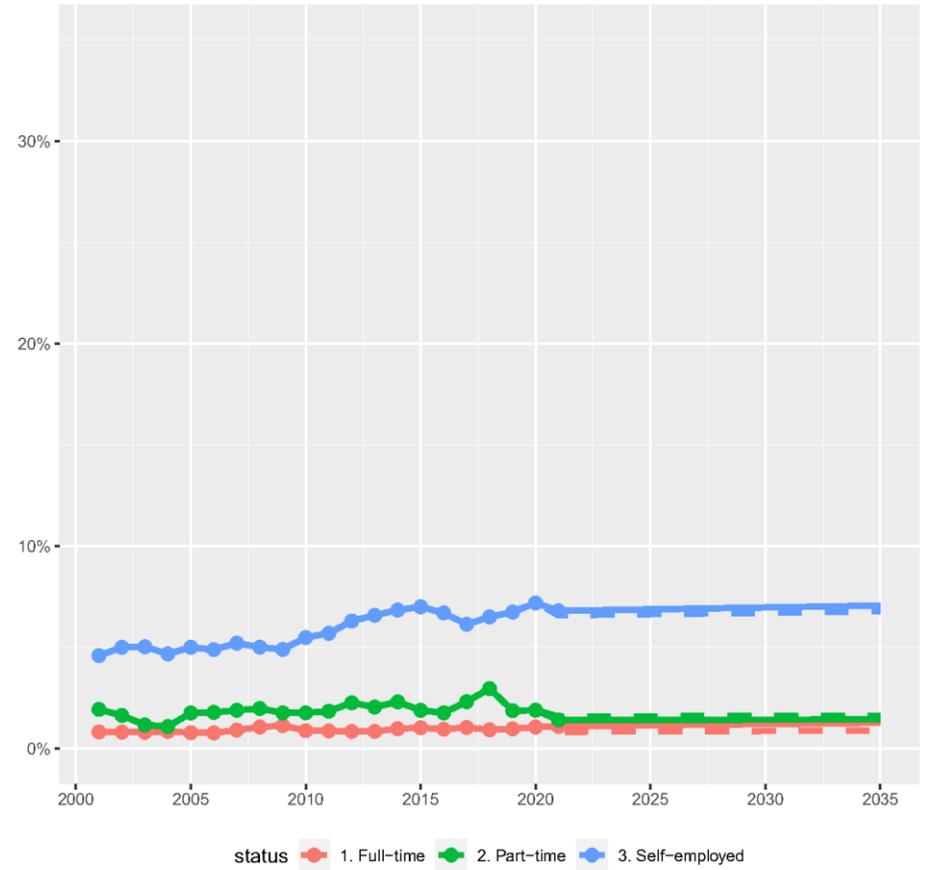
1. Males 32 Health and social care associate professionals



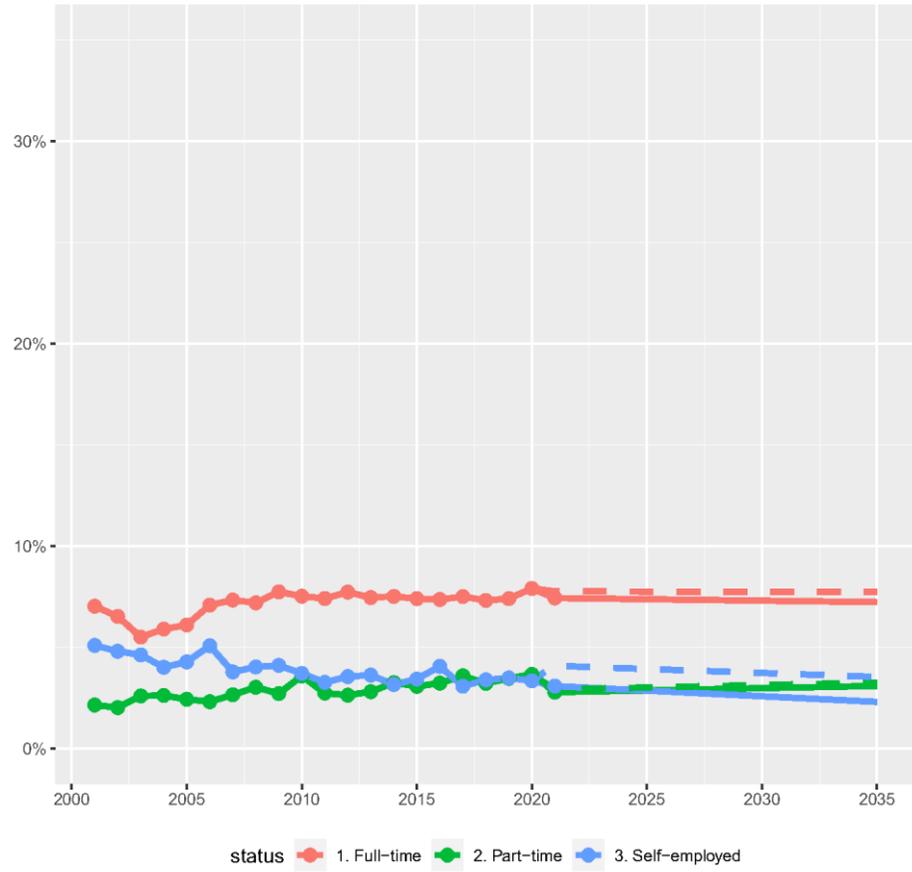
1. Males 33 Protective service occupations



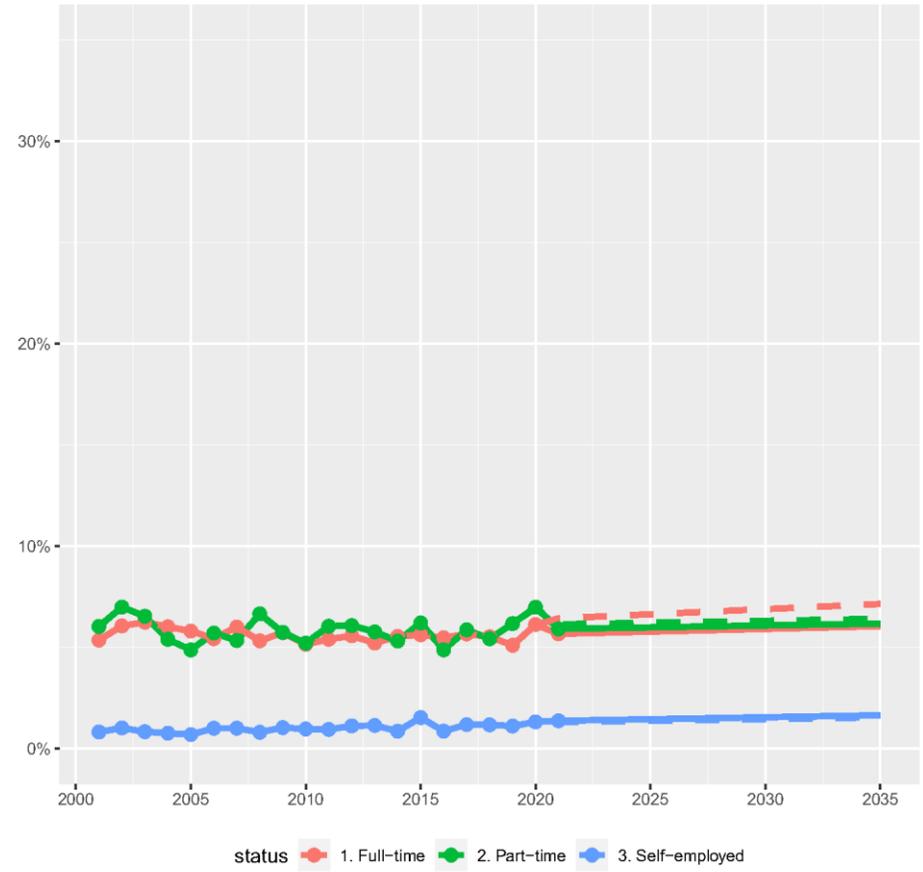
1. Males 34 Culture, media and sports occupations



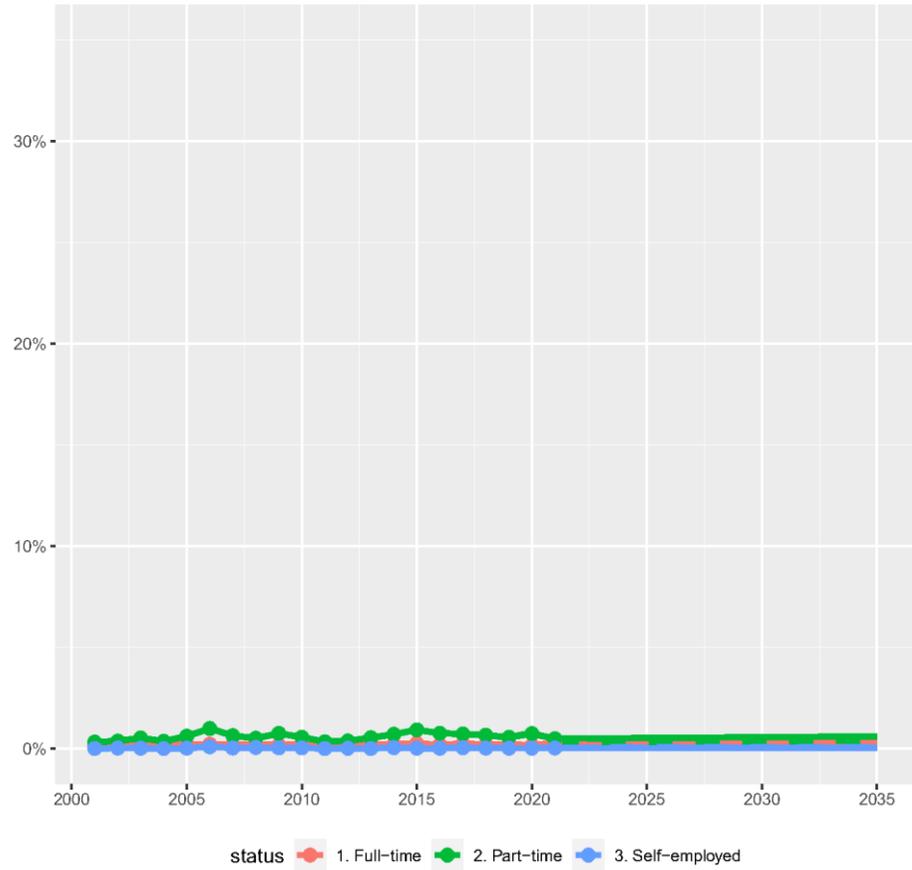
1. Males 35 Business and public service associate professionals



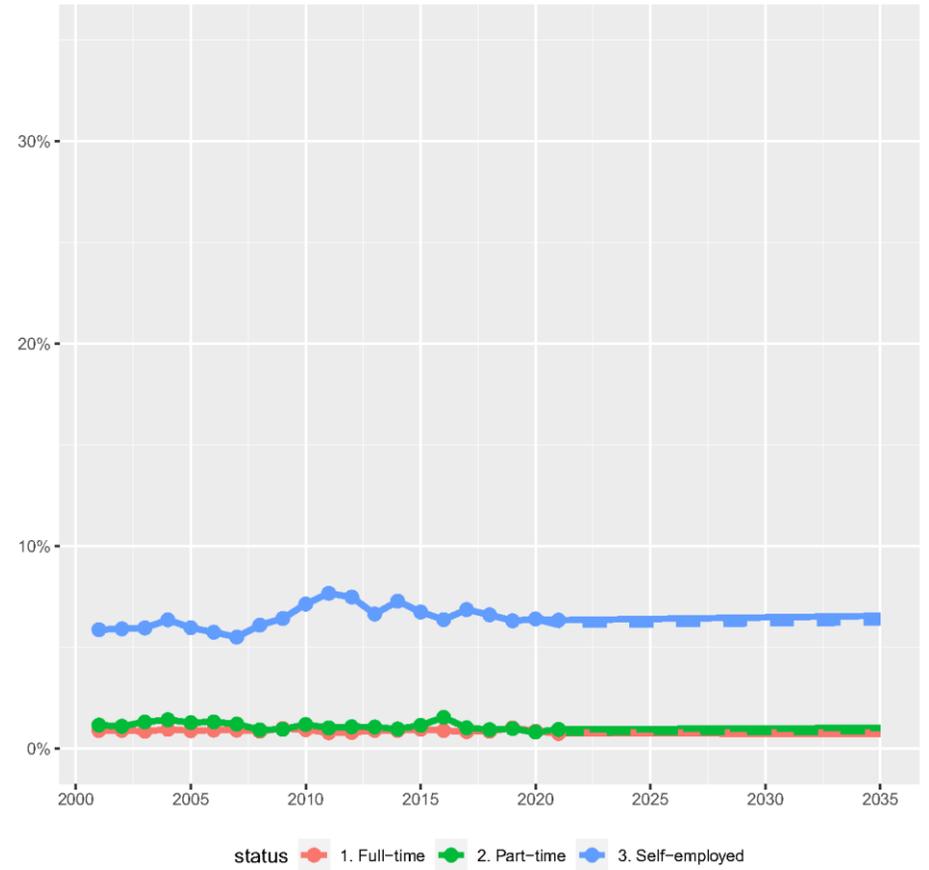
1. Males 41 Administrative occupations



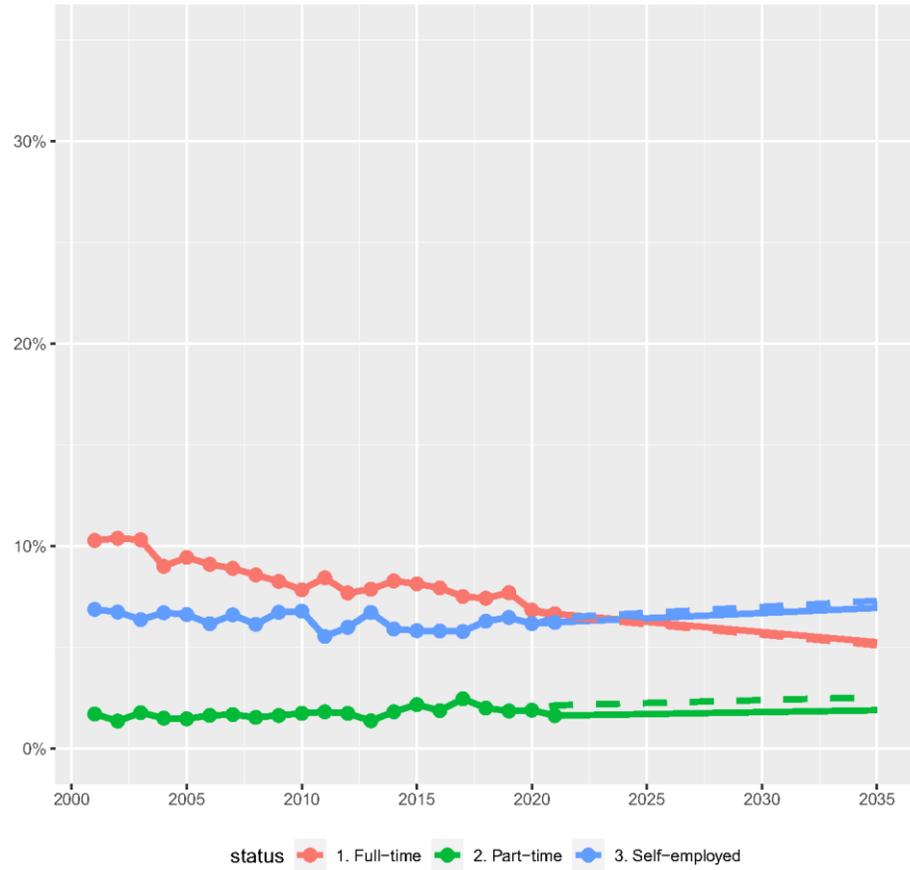
1. Males 42 Secretarial and related occupations



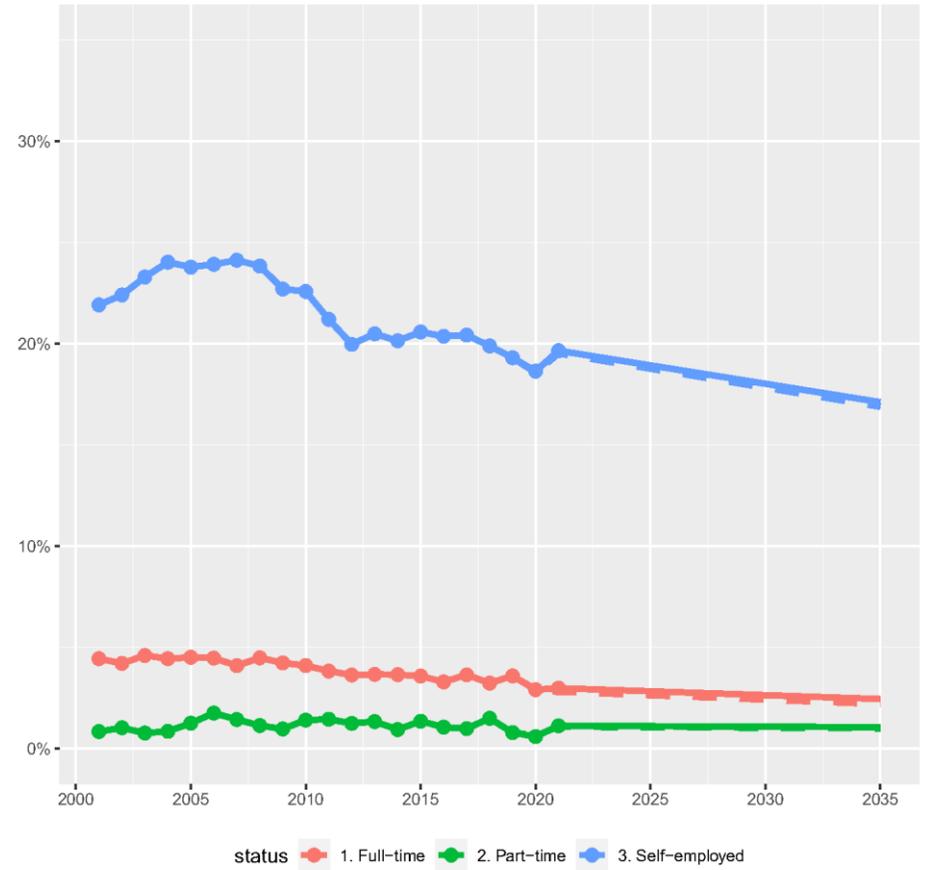
1. Males 51 Skilled agricultural and related trades



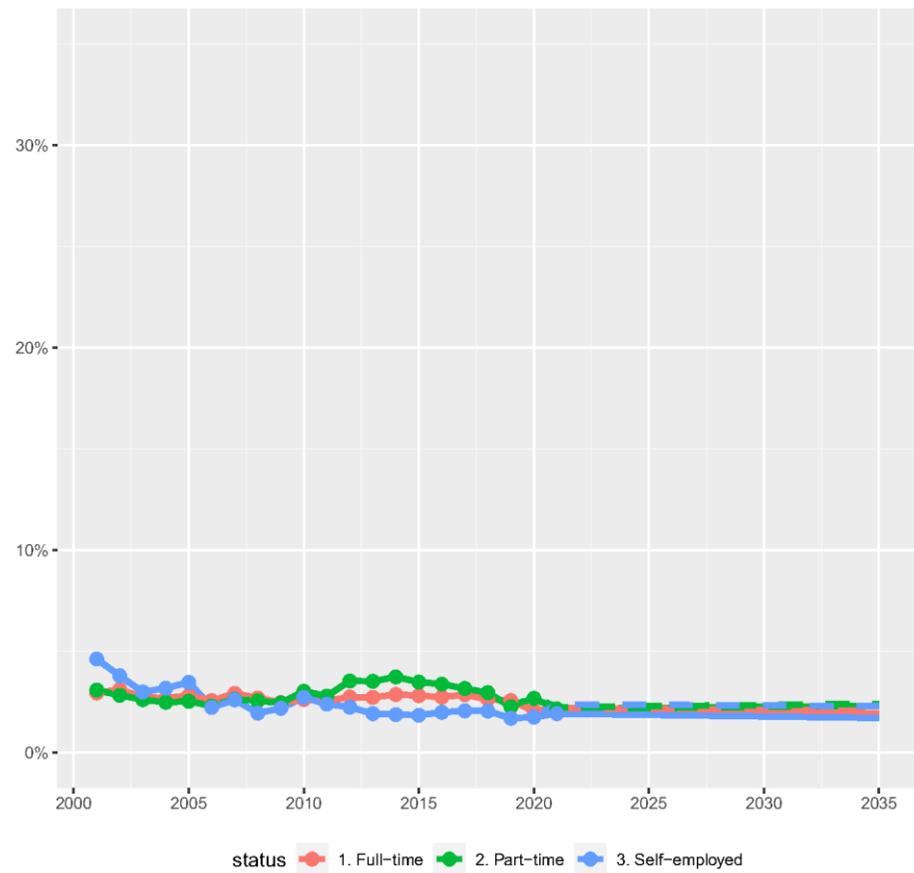
1. Males 52 Skilled metal, electrical and electronic trades



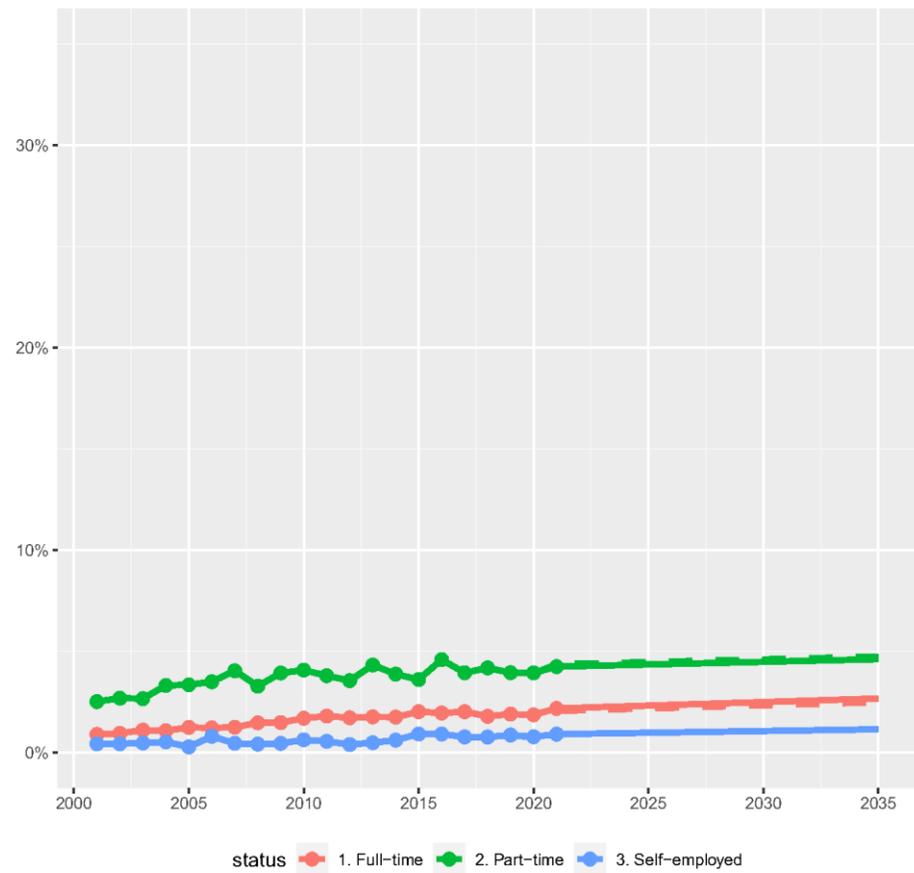
1. Males 53 Skilled construction and building trades



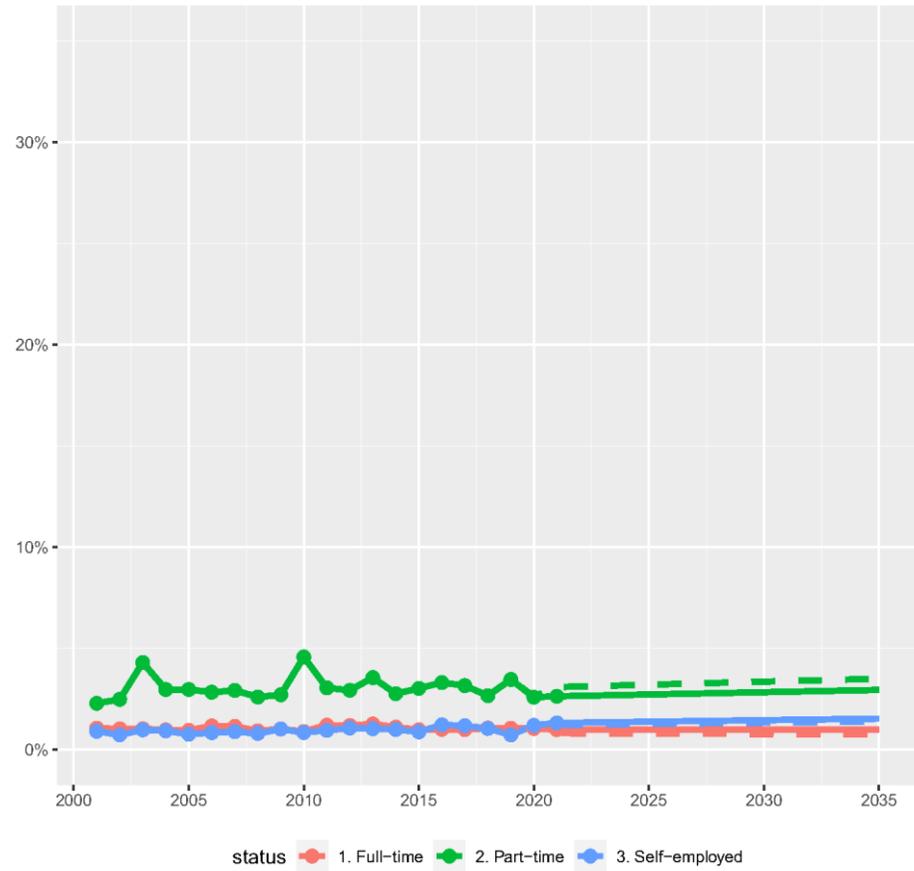
1. Males 54 Textiles, printing and other skilled trades



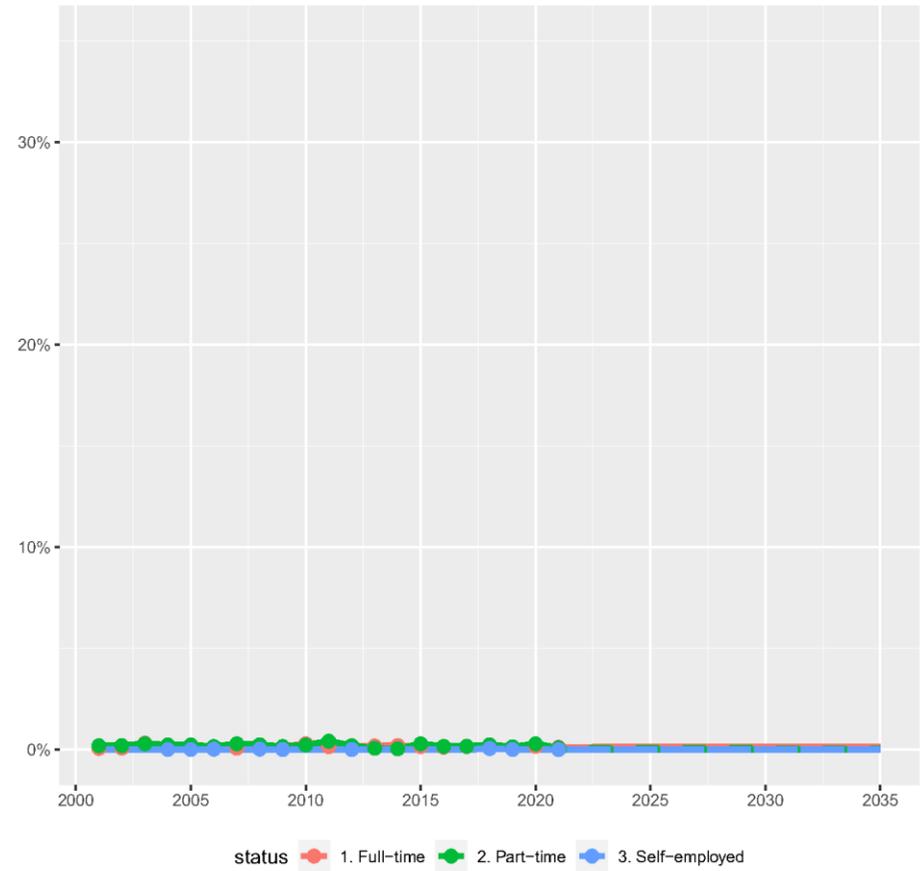
1. Males 61 Caring personal service occupations



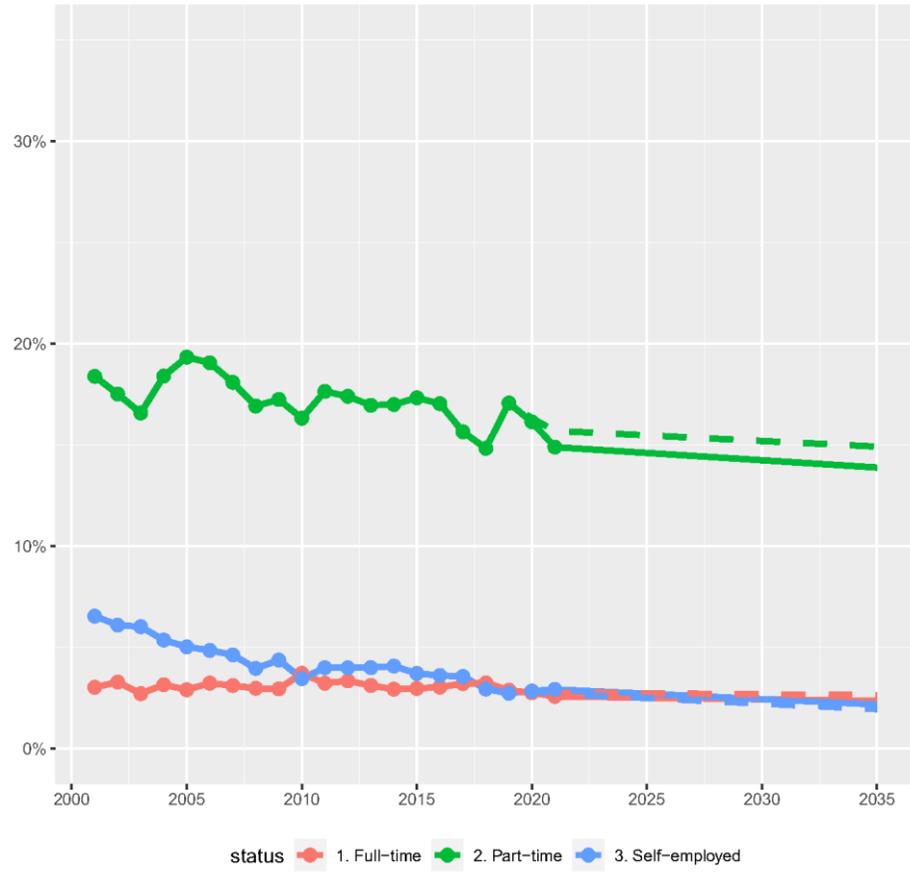
1. Males 62 Leisure, travel and related personal service occupations



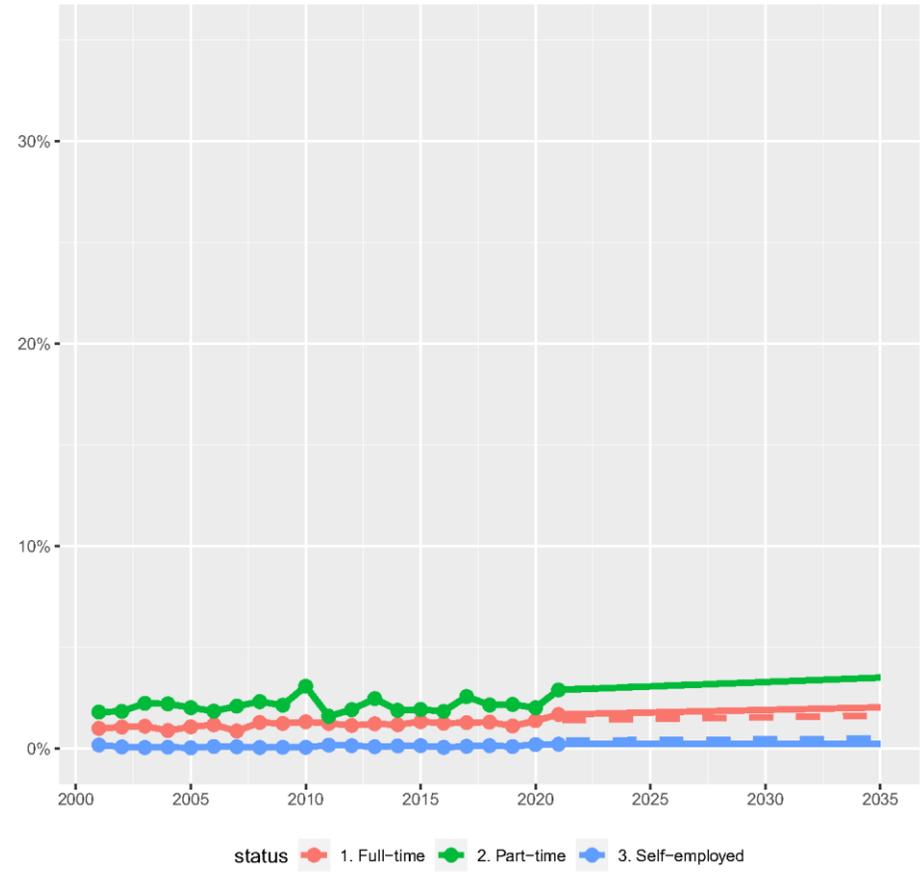
1. Males 63 Community and civil enforcement occupations



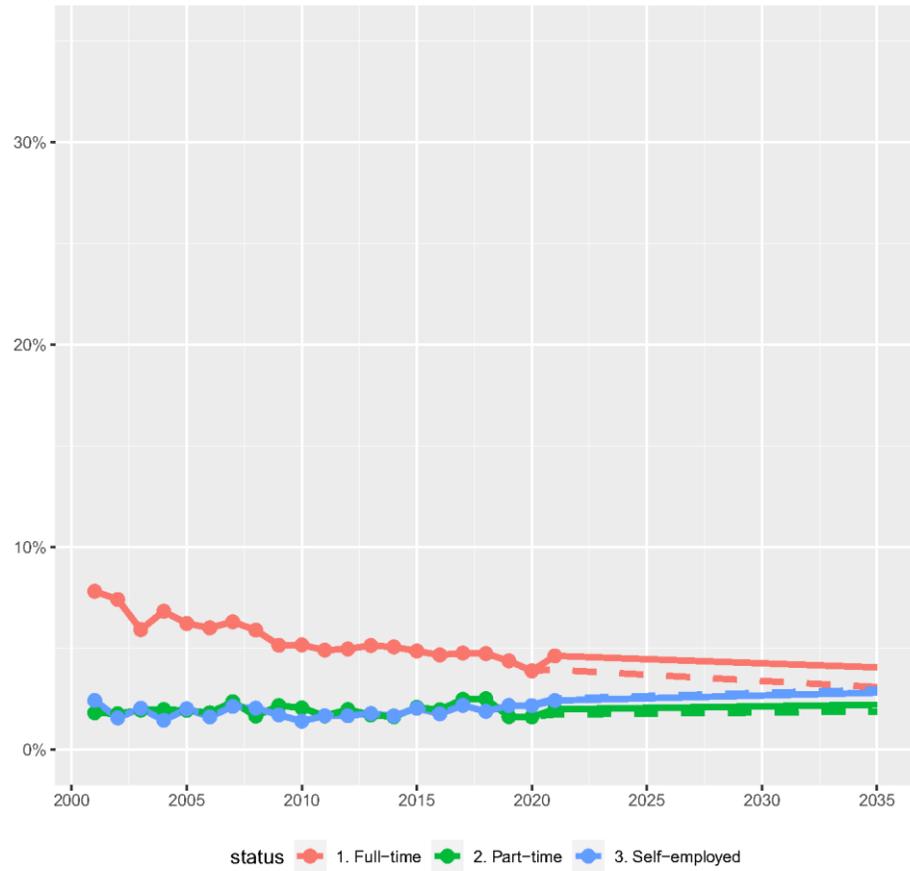
1. Males 71 Sales occupations



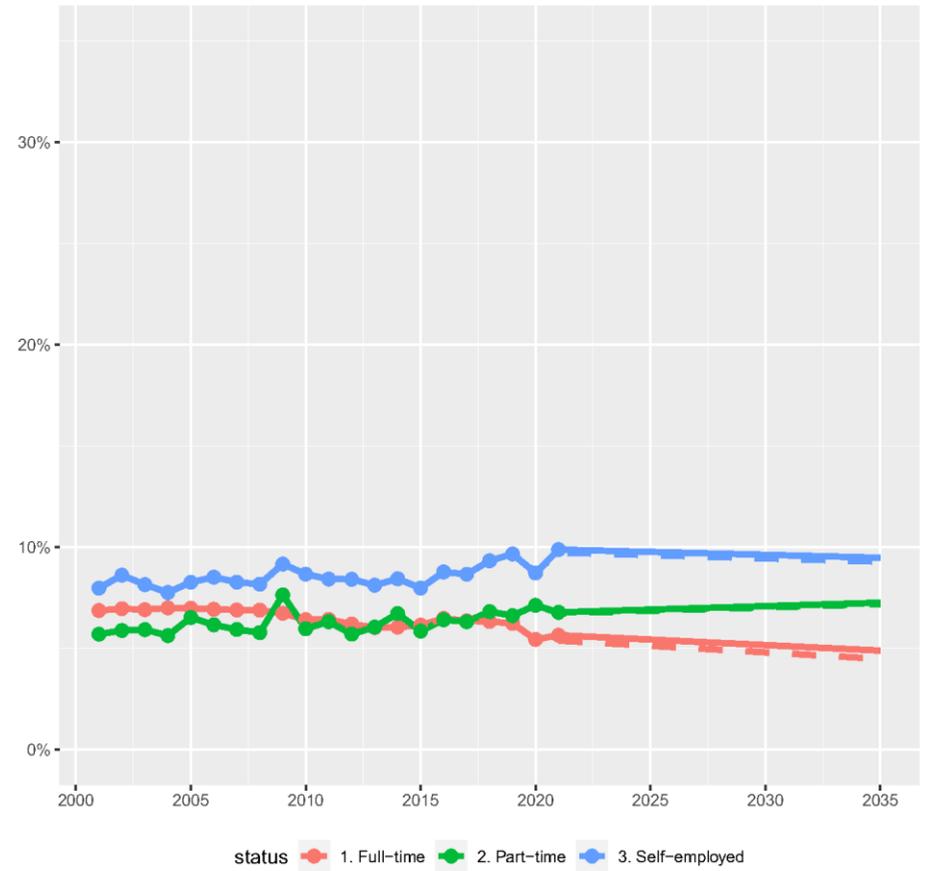
1. Males 72 Customer service occupations



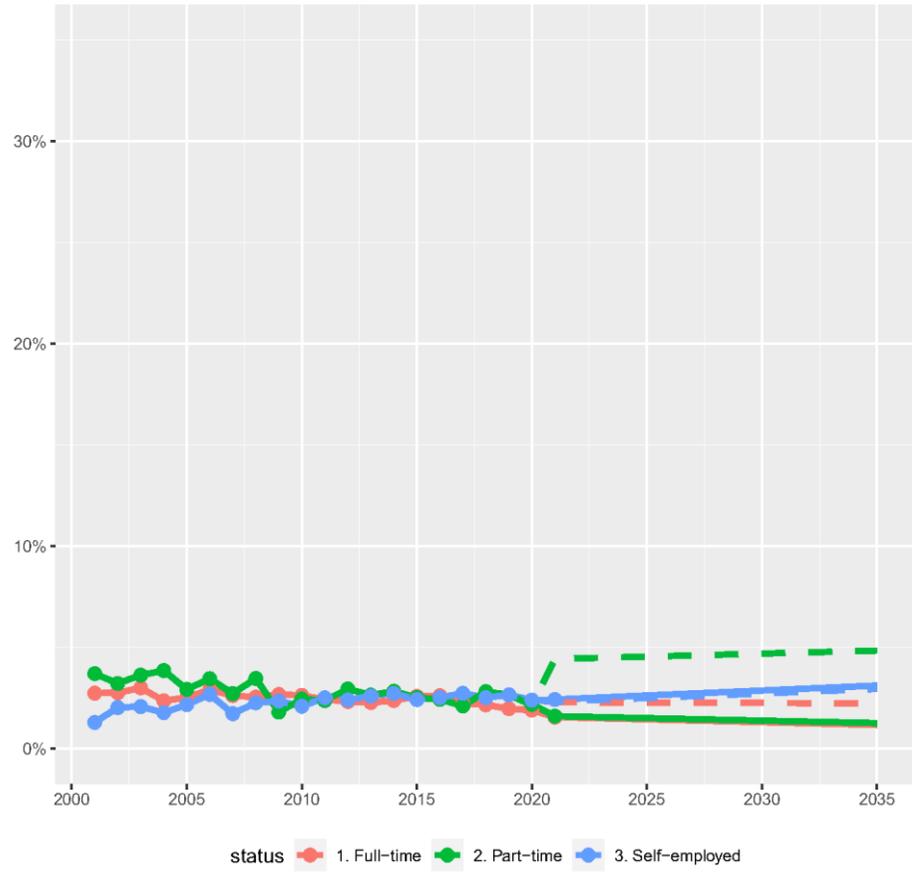
1. Males 81 Process, plant and machine operatives



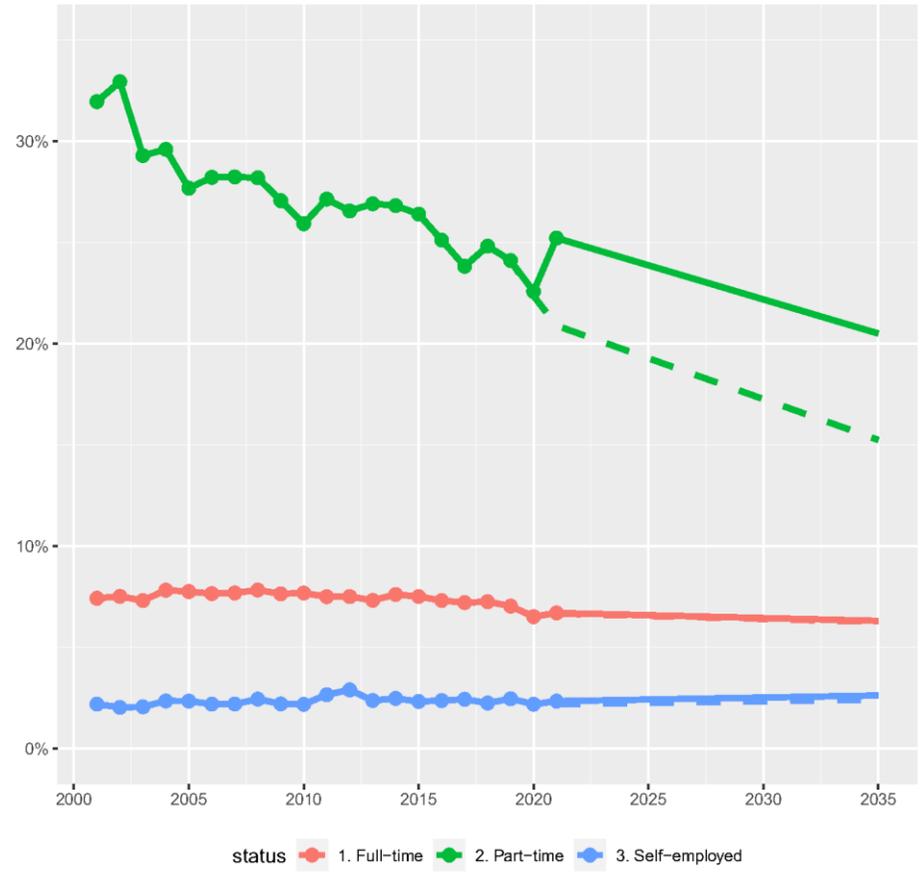
1. Males 82 Transport and mobile machine drivers and operatives



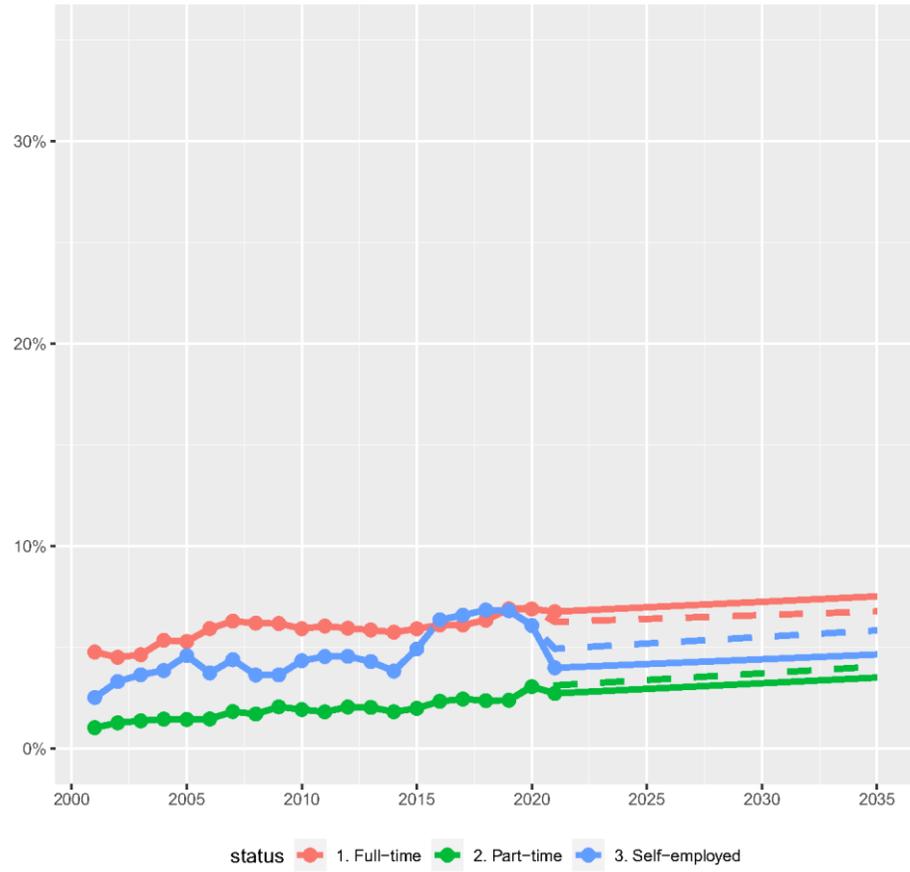
1. Males 91 Elementary trades and related occupations



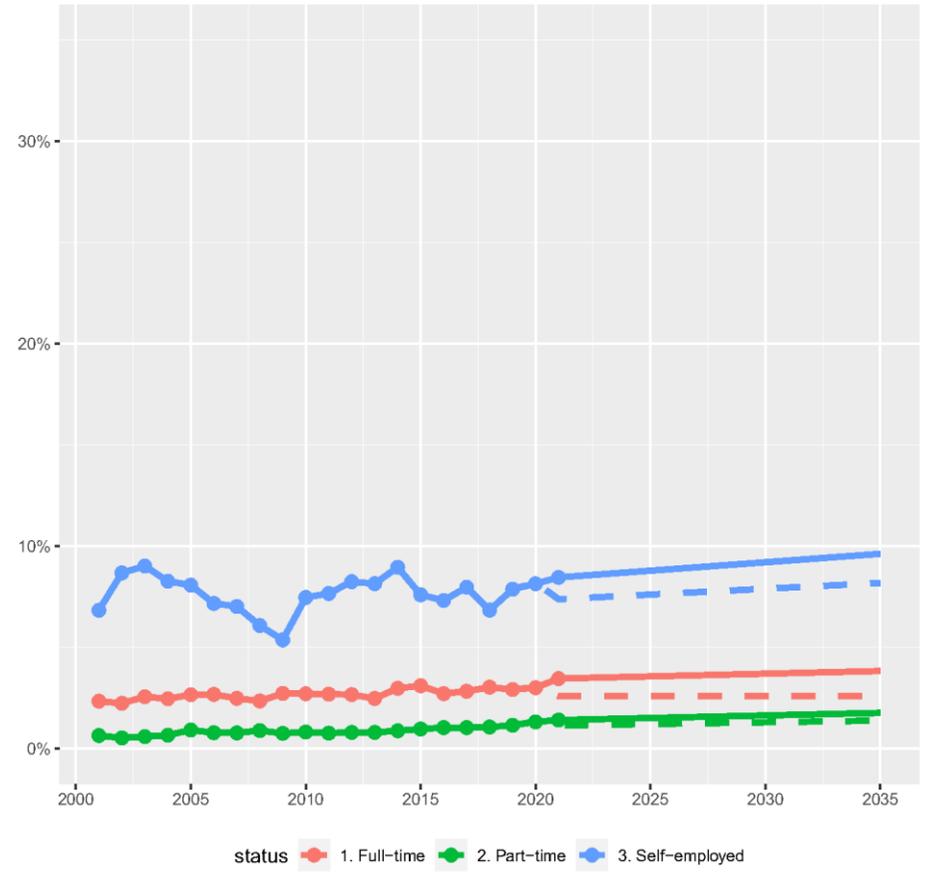
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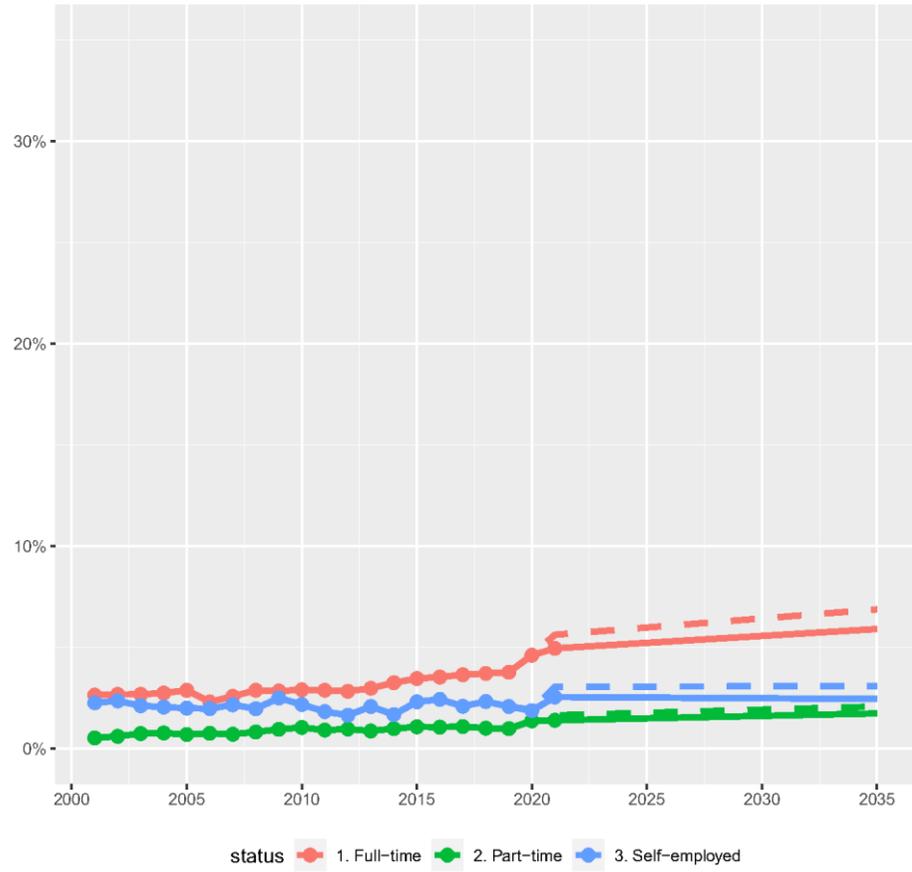
2. Females 11 Corporate managers and directors



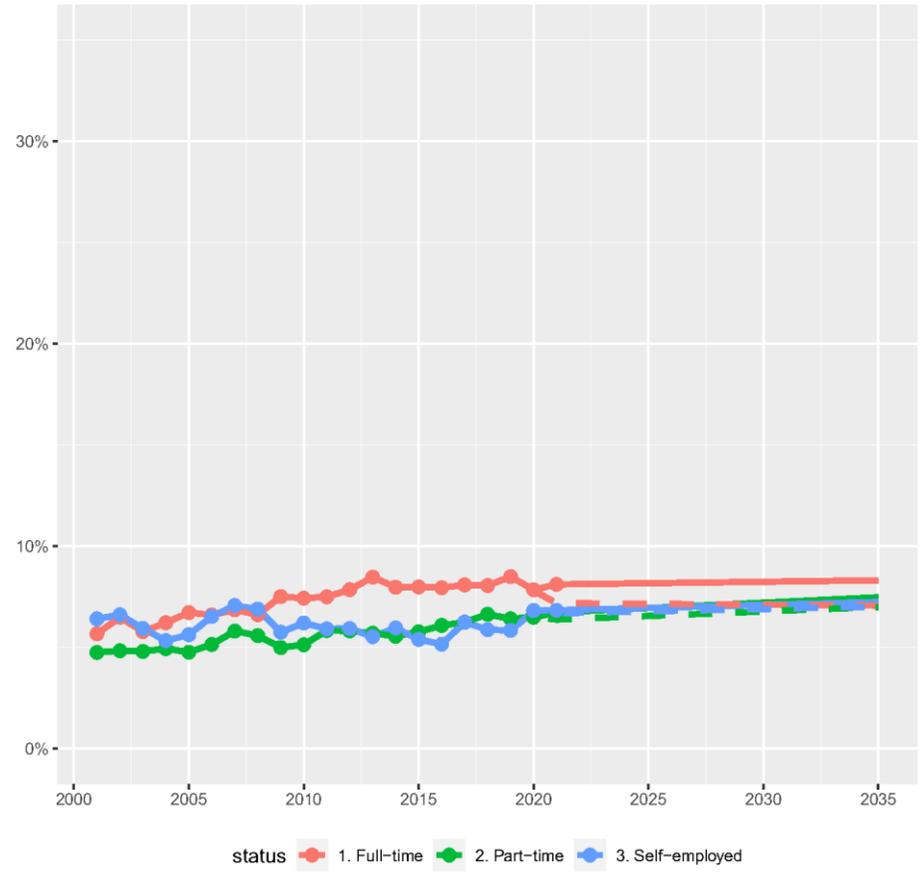
2. Females 12 Other managers and proprietors



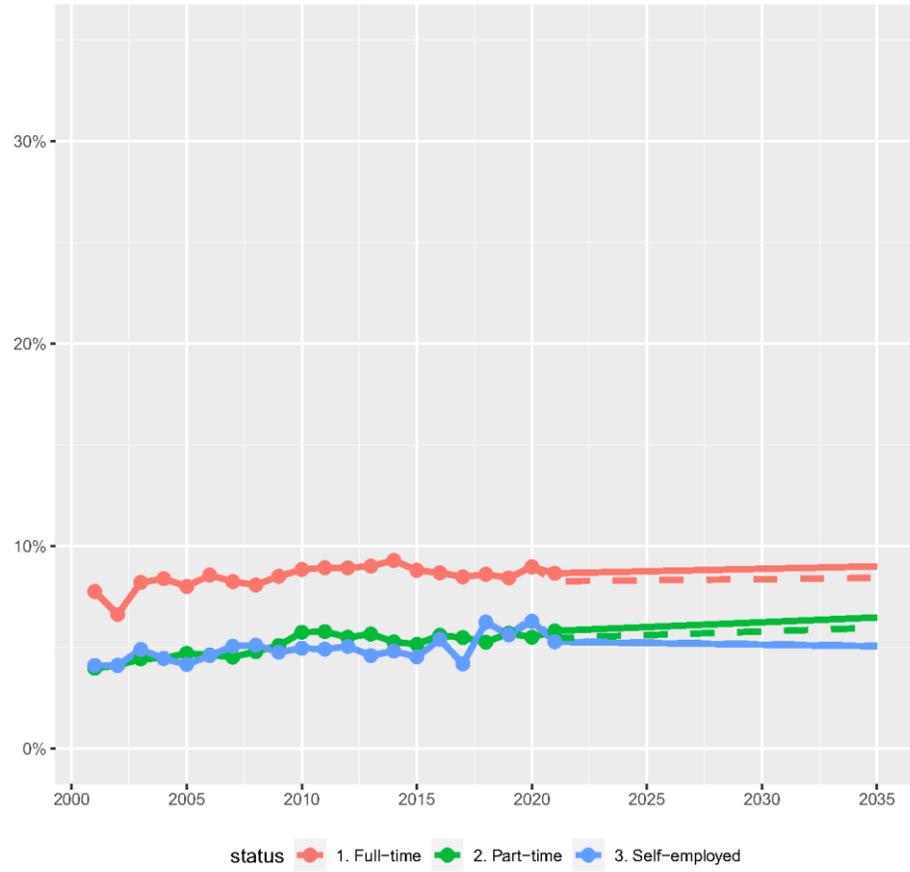
2. Females 21 Science, research, engineering and technology professionals



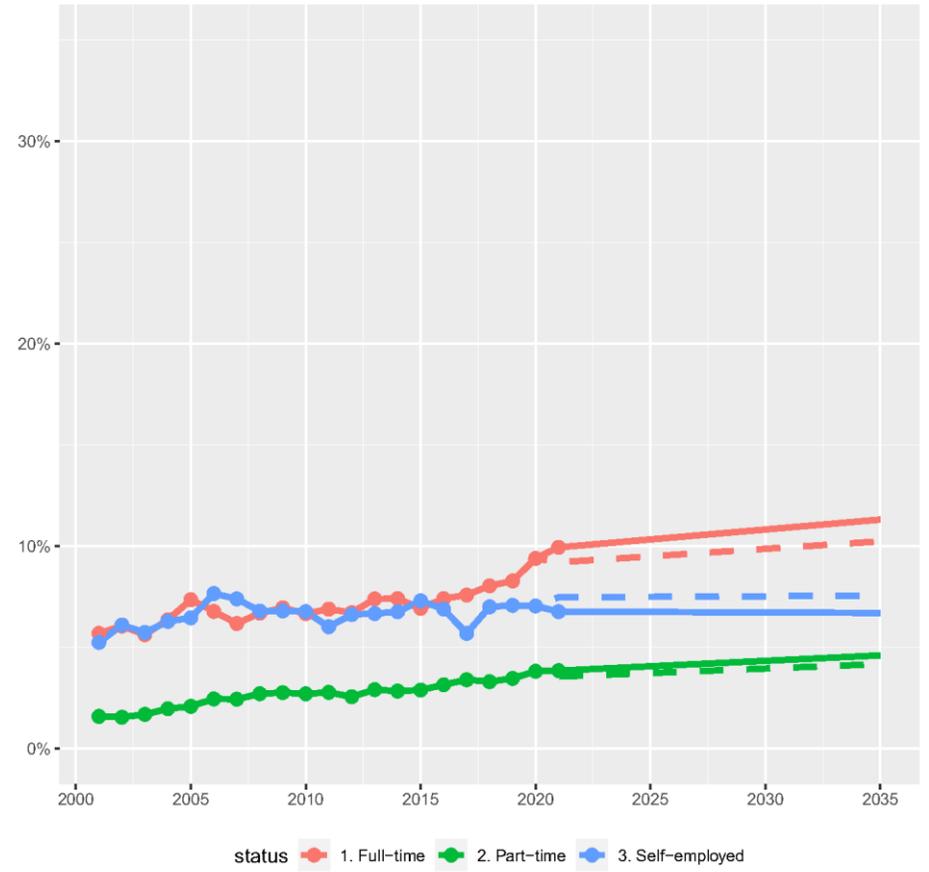
2. Females 22 Health professionals



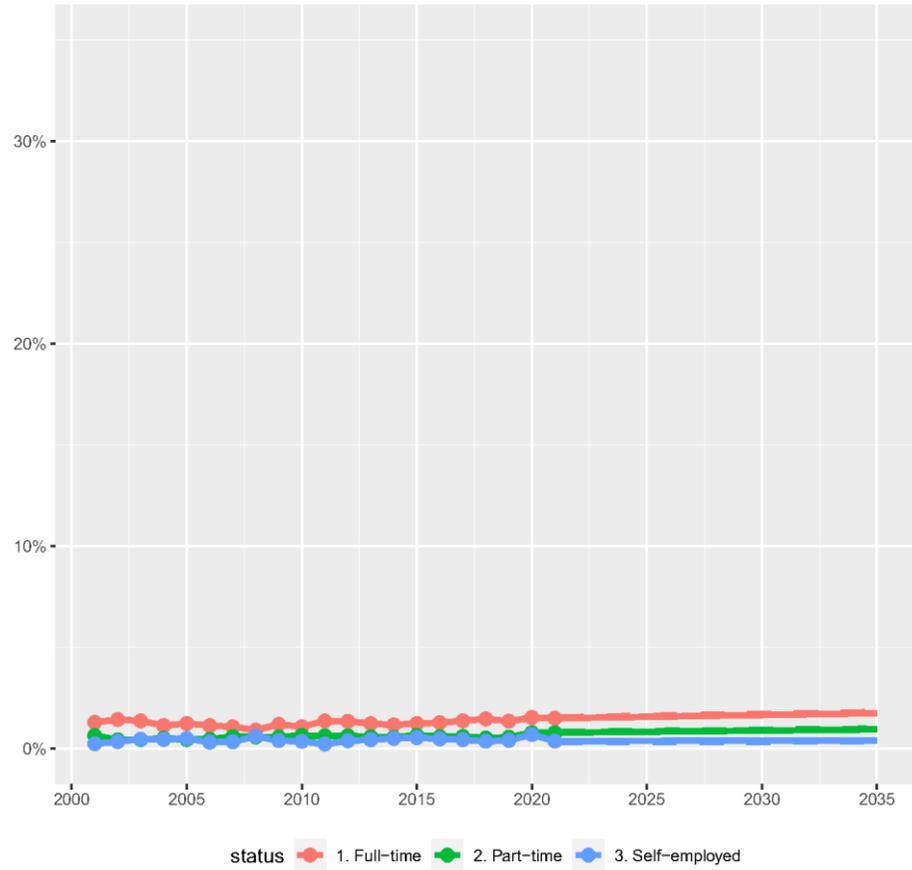
2. Females 23 Teaching and other educational professionals



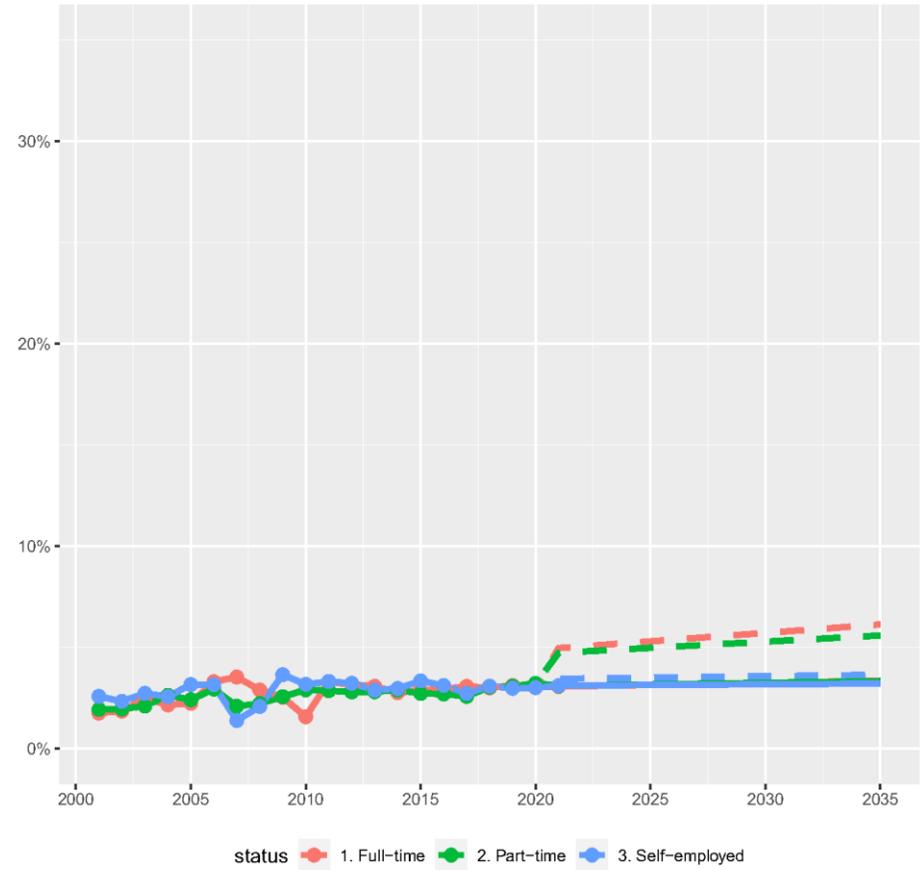
2. Females 24 Business, media and public service professionals



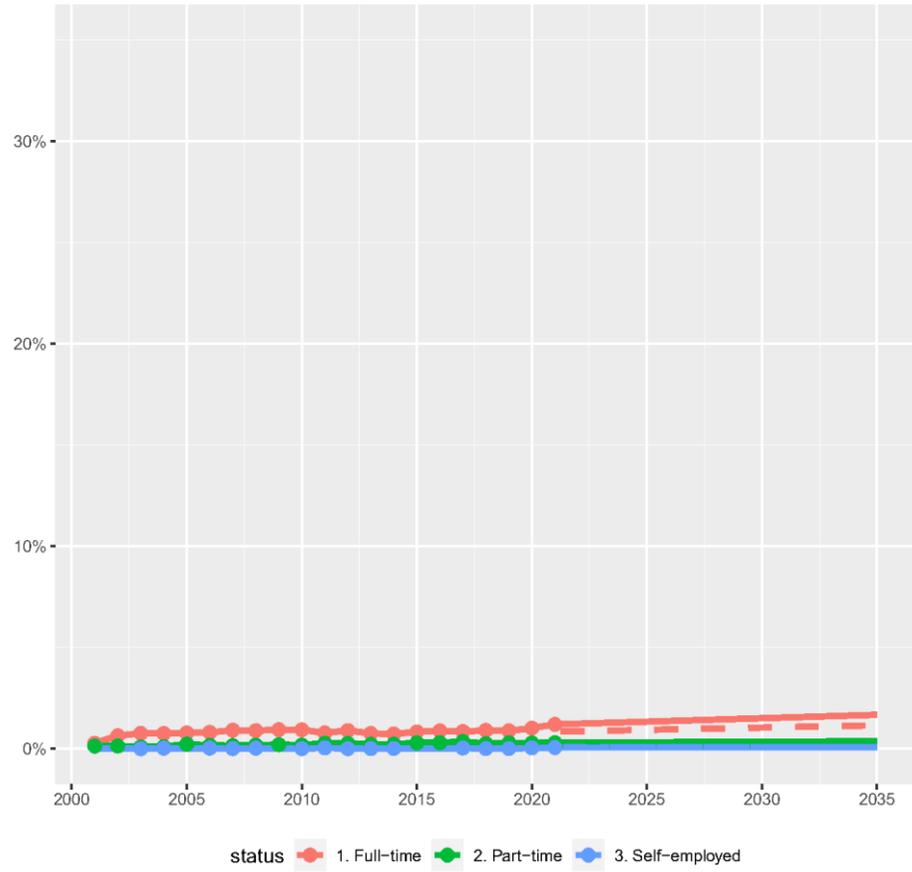
2. Females 31 Science, engineering and technology associate professionals



2. Females 32 Health and social care associate professionals



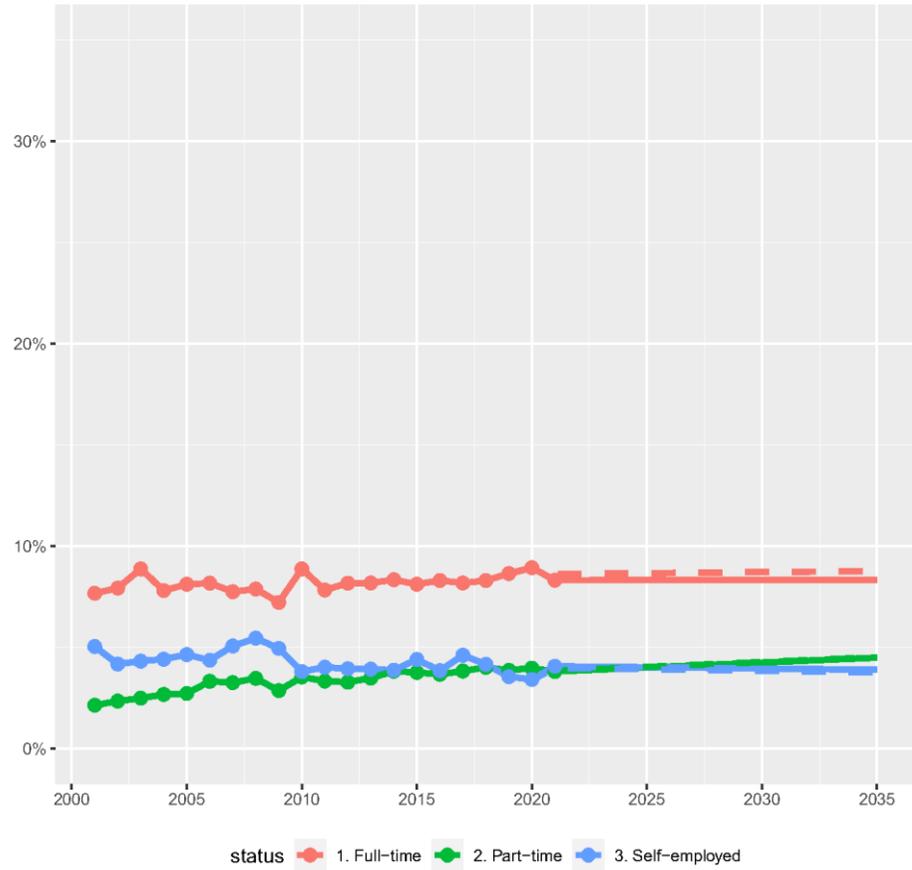
2. Females 33 Protective service occupations



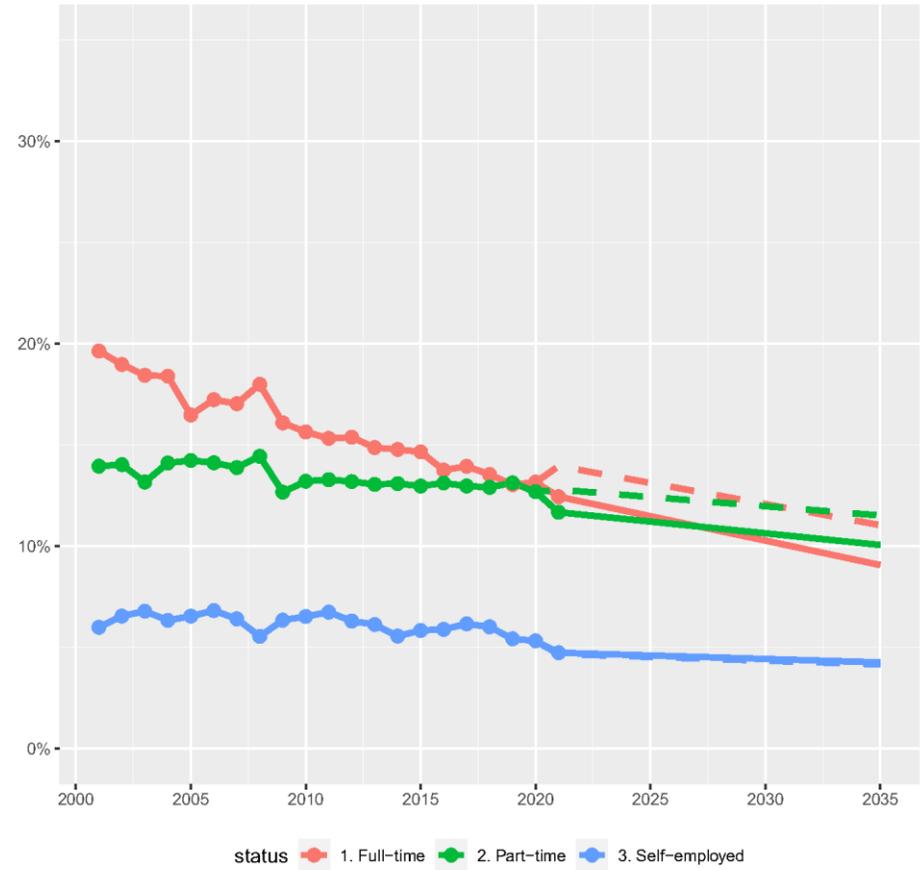
2. Females 34 Culture, media and sports occupations



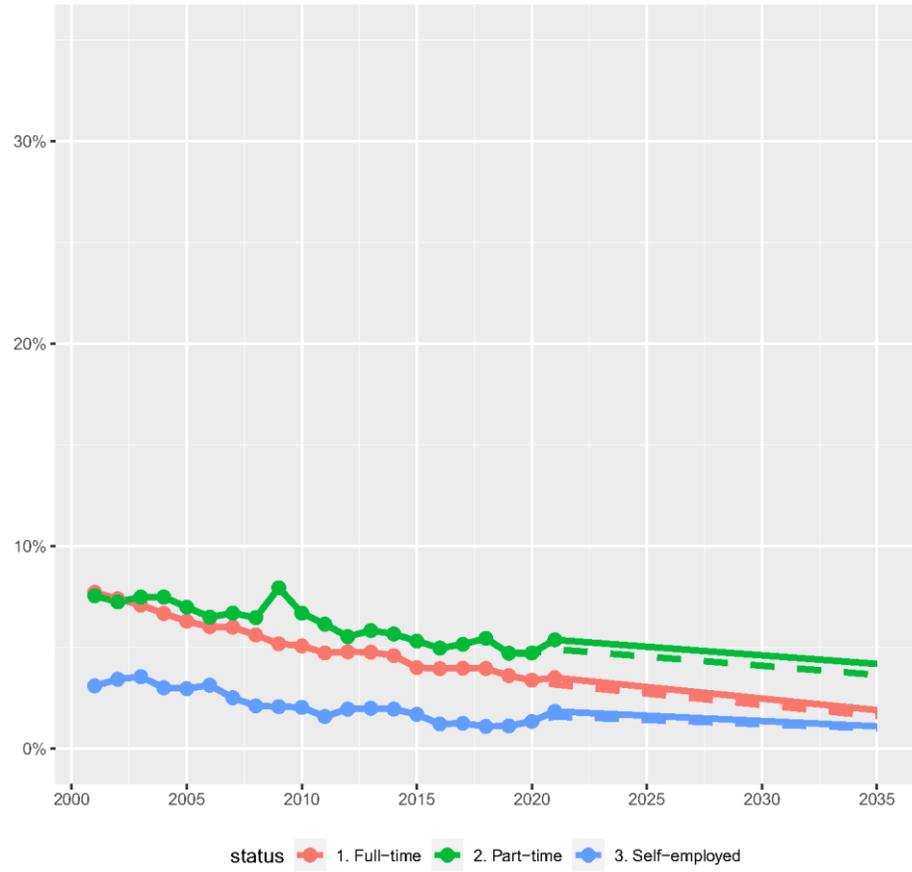
2. Females 35 Business and public service associate professionals



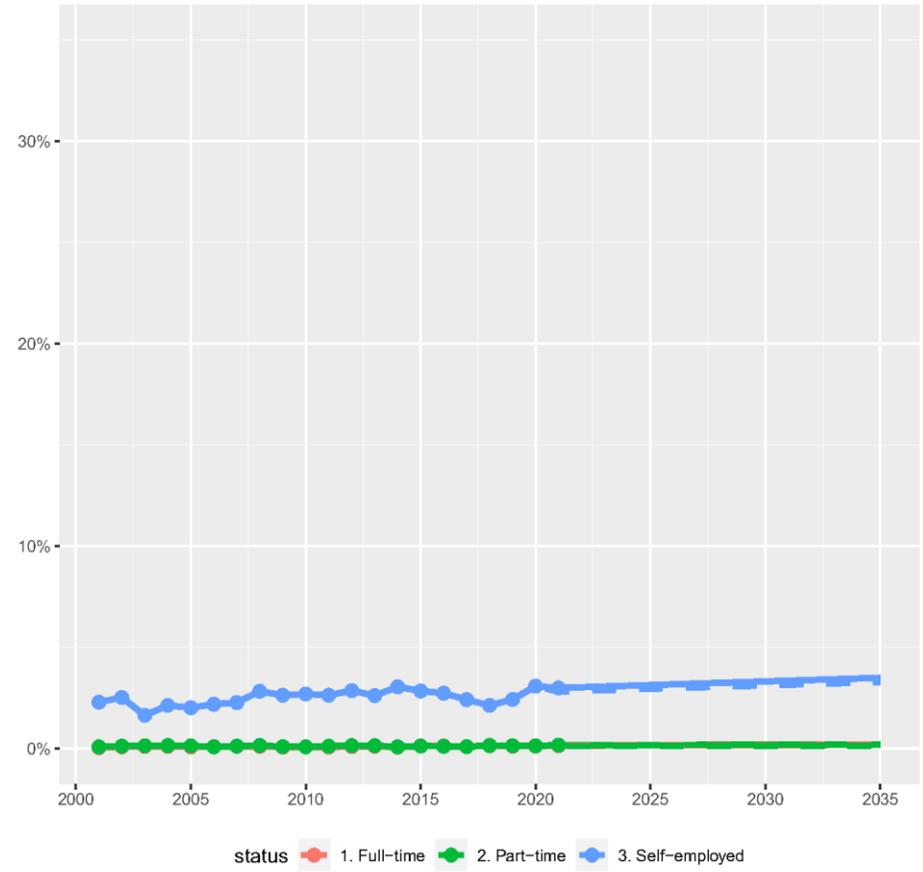
2. Females 41 Administrative occupations



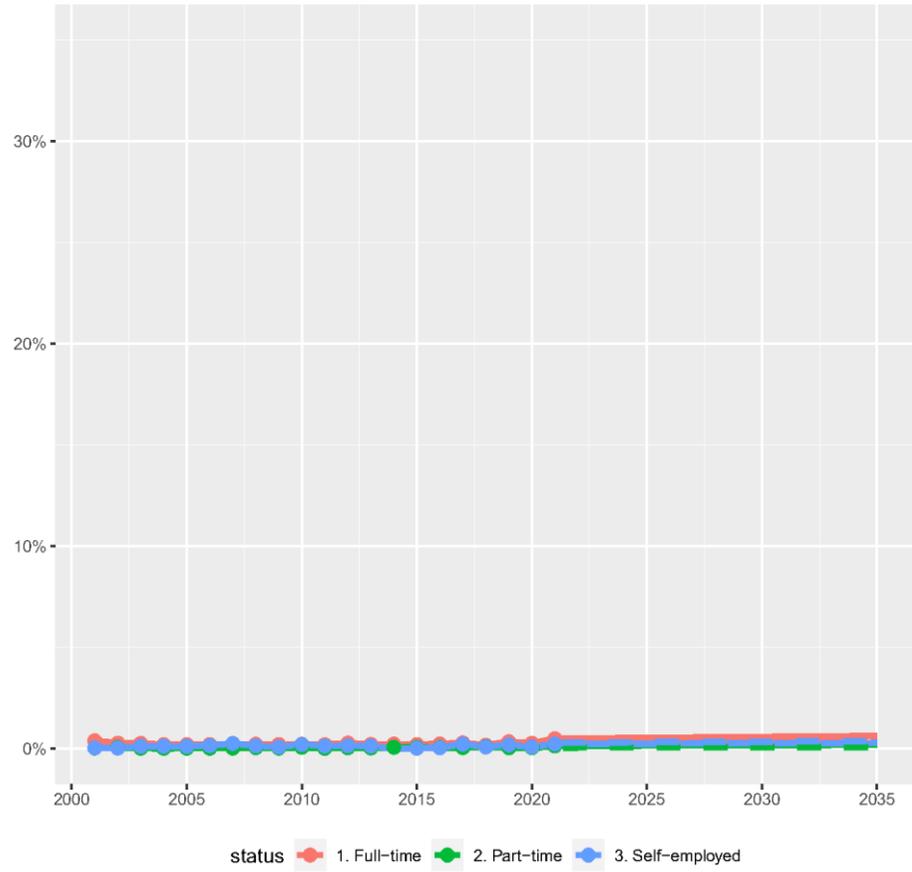
2. Females 42 Secretarial and related occupations



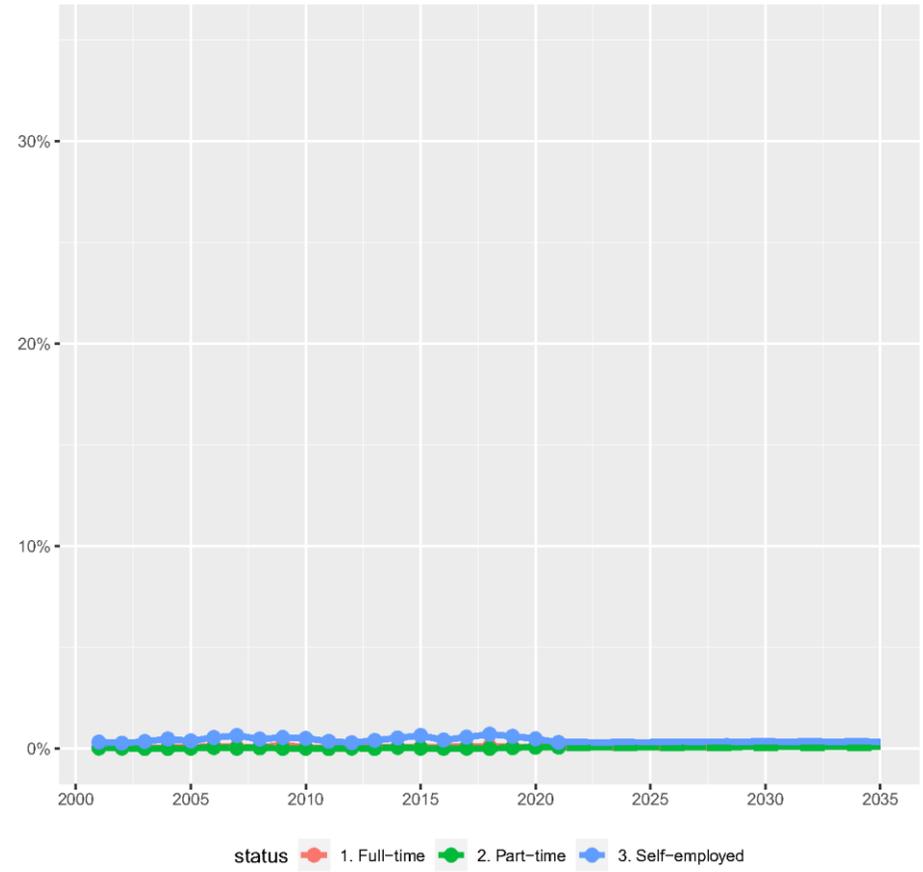
2. Females 51 Skilled agricultural and related trades



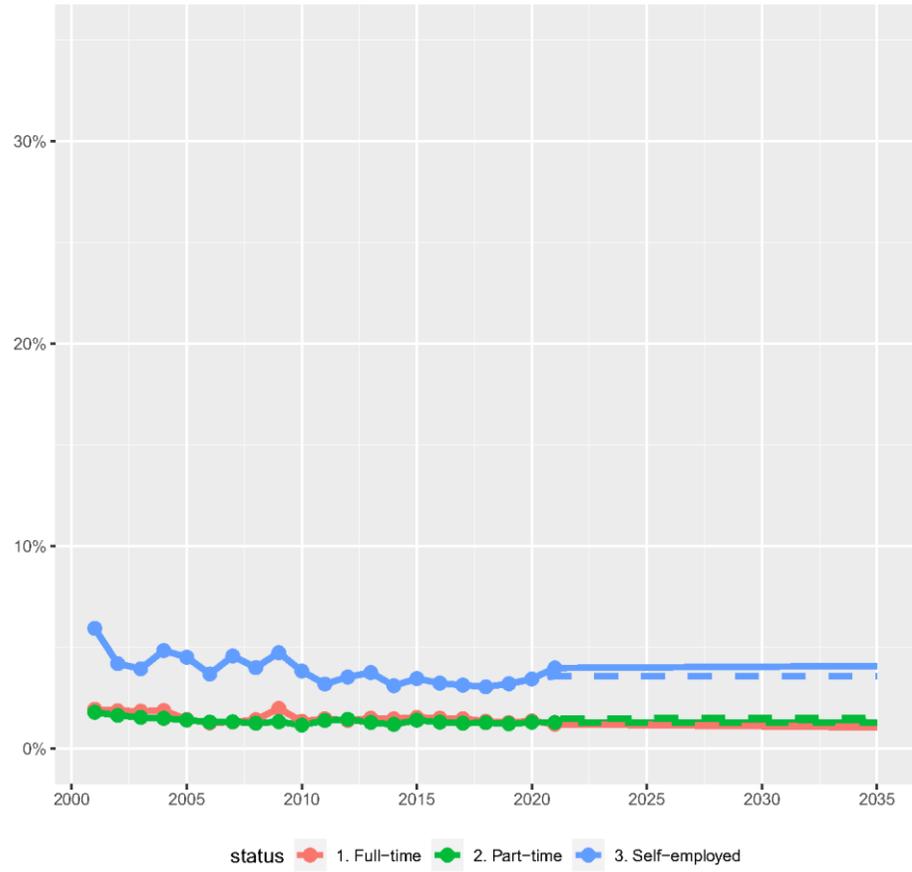
2. Females 52 Skilled metal, electrical and electronic trades



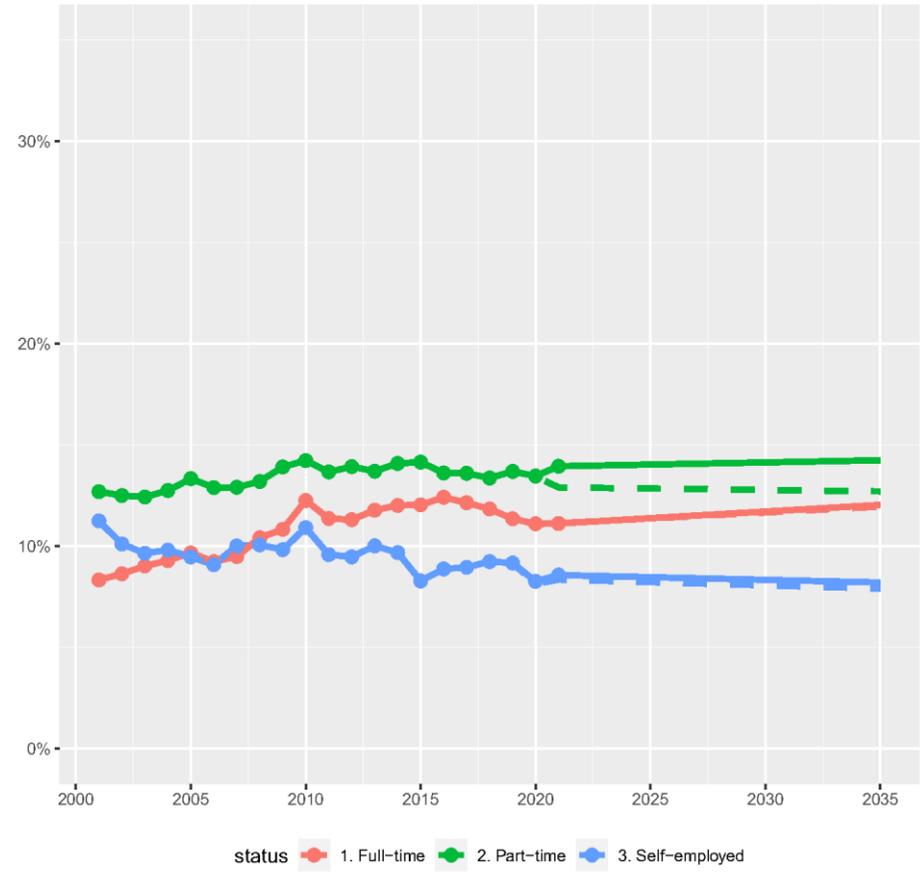
2. Females 53 Skilled construction and building trades



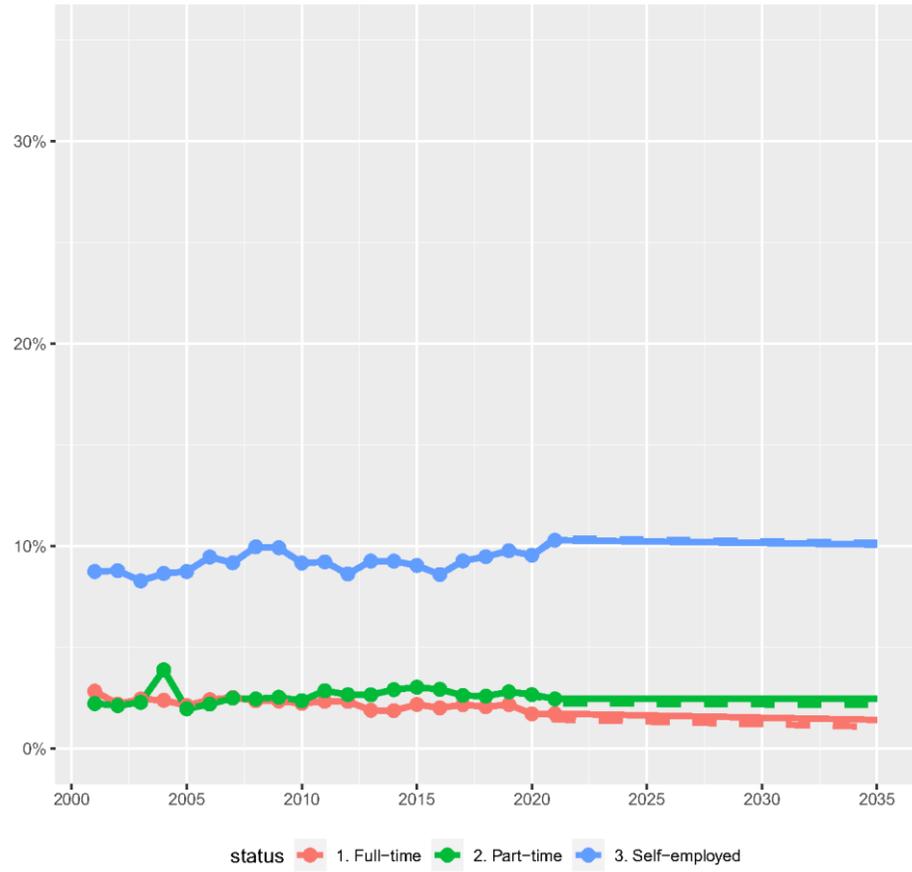
2. Females 54 Textiles, printing and other skilled trades



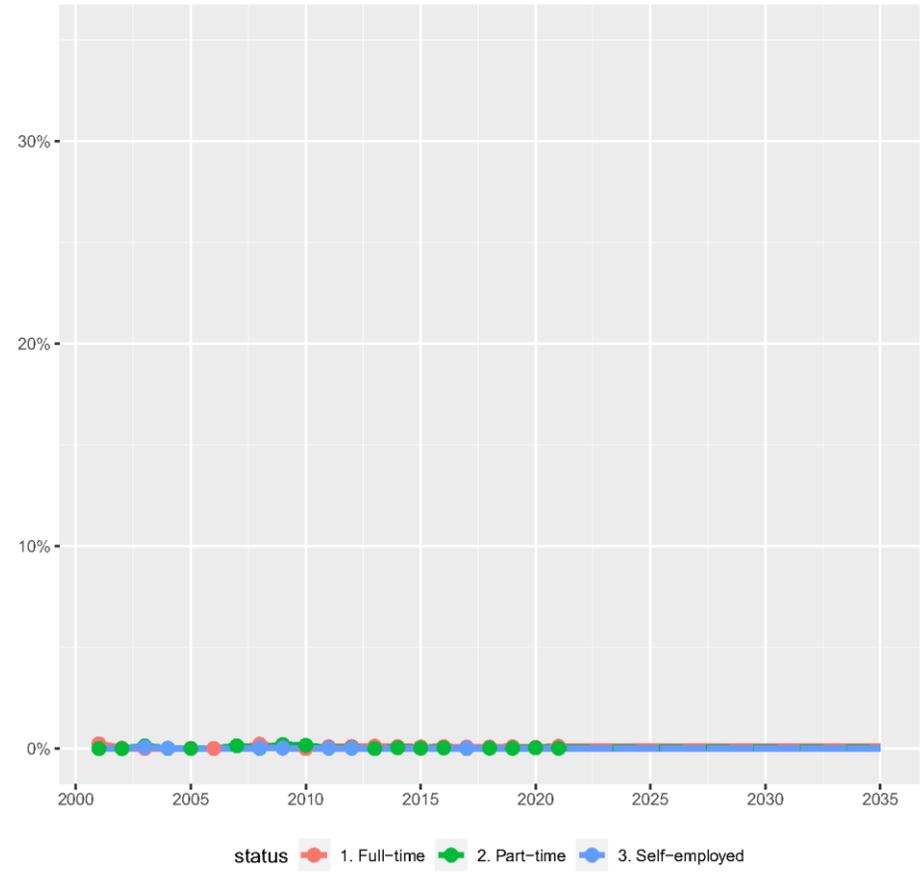
2. Females 61 Caring personal service occupations



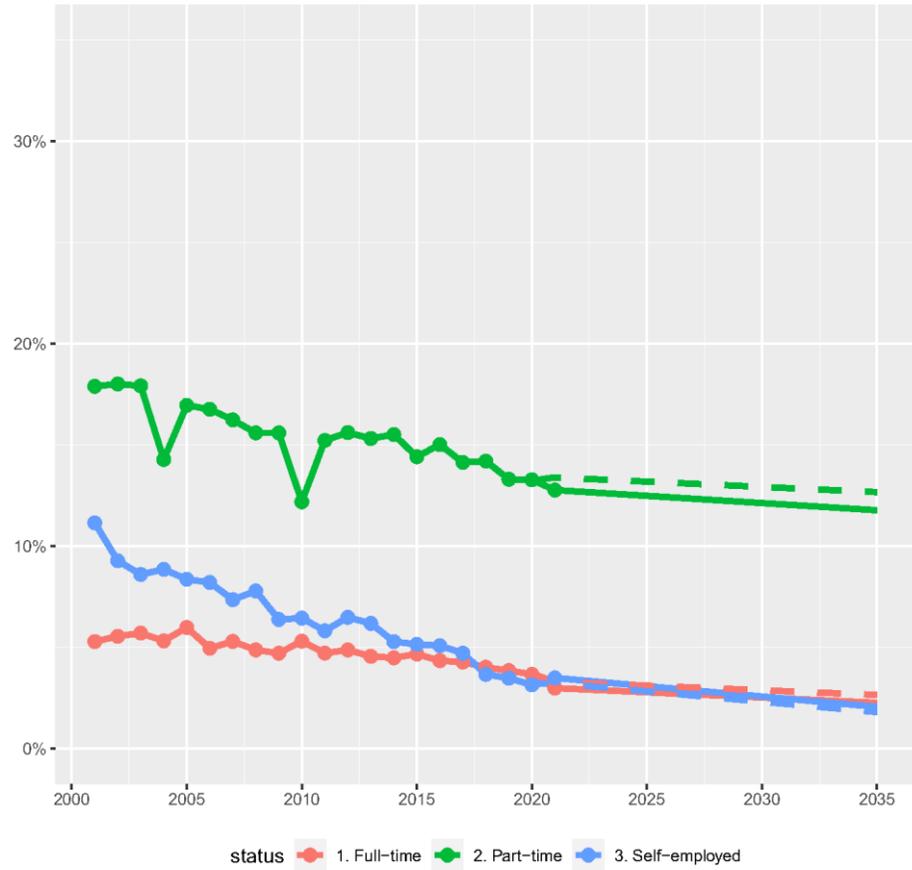
2. Females 62 Leisure, travel and related personal service occupations



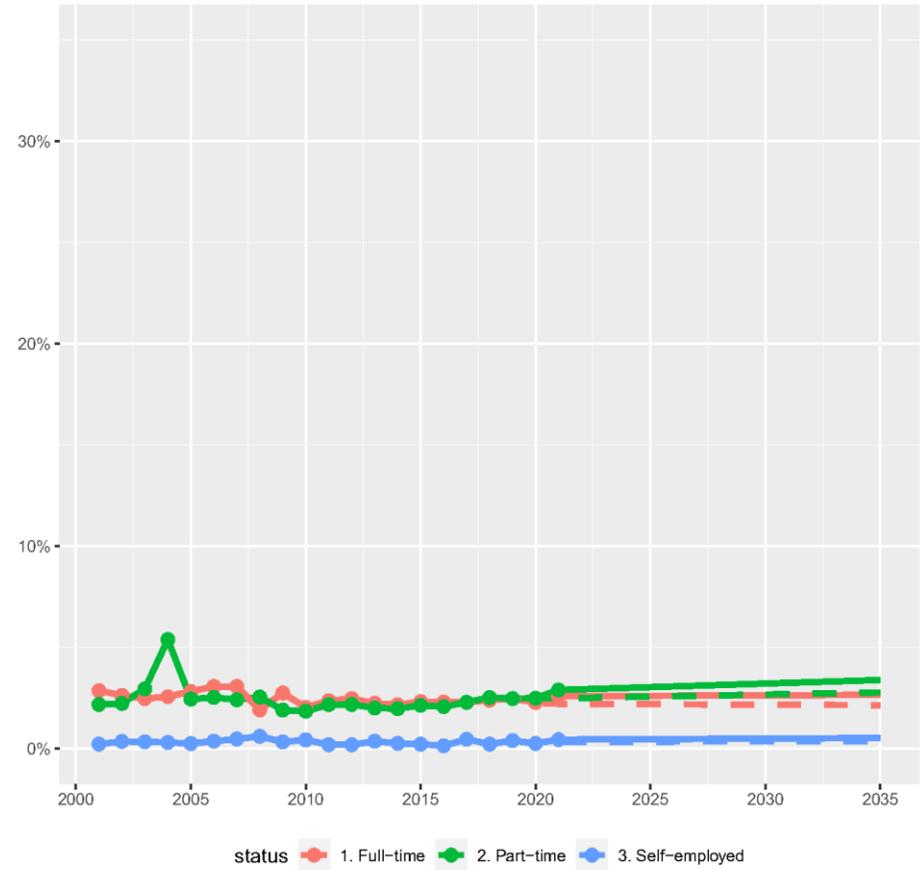
2. Females 63 Community and civil enforcement occupations



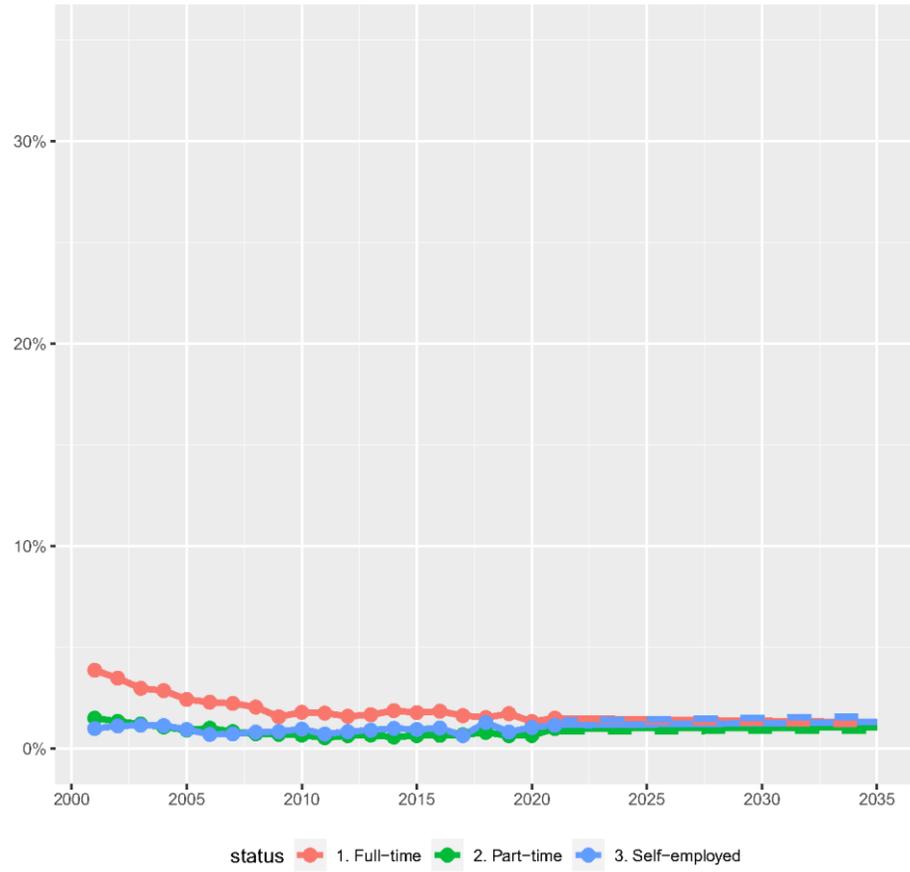
2. Females 71 Sales occupations



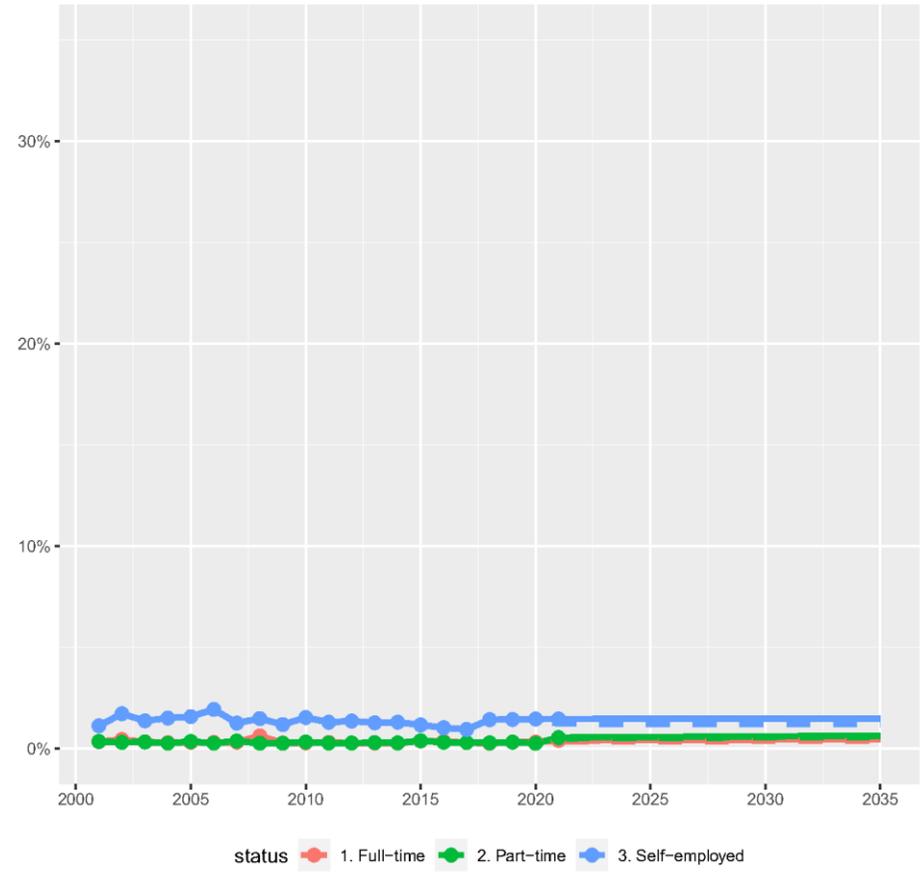
2. Females 72 Customer service occupations



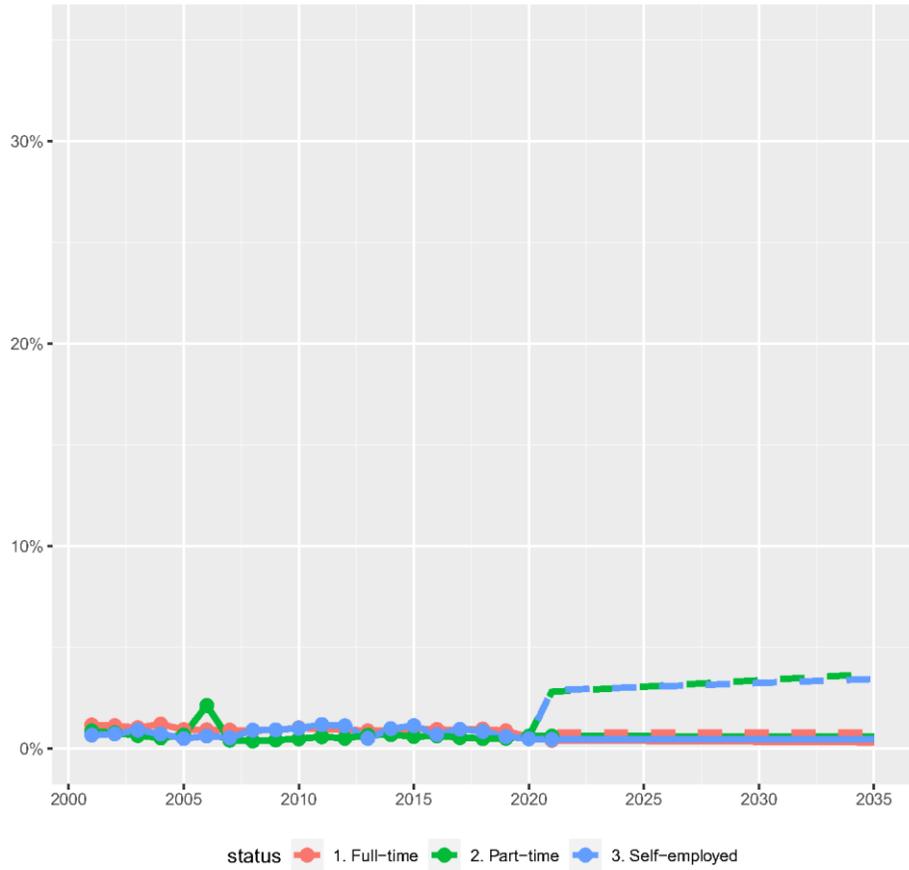
2. Females 81 Process, plant and machine operatives



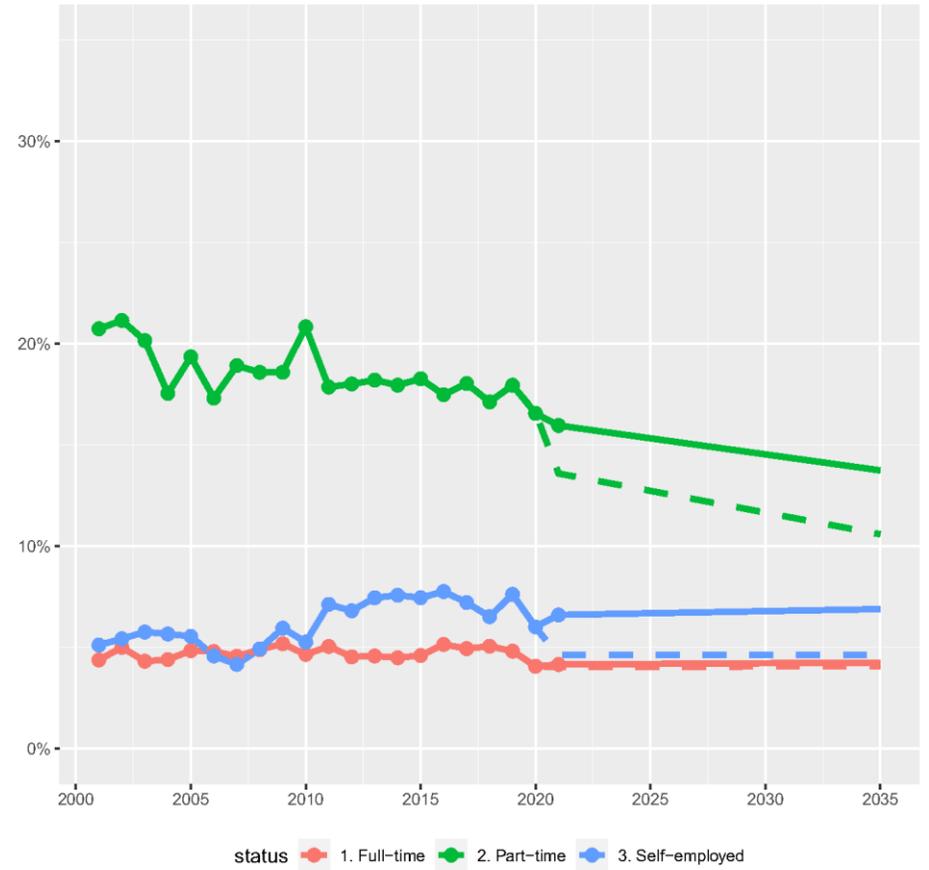
2. Females 82 Transport and mobile machine drivers and operatives



2. Females 91 Elementary trades and related occupations



2. Females 92 Elementary administration and service occupations



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