Introductory analysis of the 10 Lower Super Output Areas ("LSOAs") in England with the lowest Index of Multiple Deprivation ("IMD")

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1. Overview:

Justice Episteme Ltd has developed an application, Environs, which can consolidate and map publicly available data to a variety of boundaries, to create a holistic picture of individual area statistics. In this high-level introductory analysis, the Environs application has been used to identify/ examine the 10 Lower Super Output Areas in England with the lowest Index of Multiple Deprivation and examine these areas' profiles for a limited selection of other publicly available metrics that include population demographics, personal tax credit and crime.

This analysis is a non-exhaustive; and does not seek to draw any conclusions about the LSOAs identified. Rather, the intention of this analysis is to demonstrate the functionality of the Environs application and that users have a powerful tool at their disposal for consolidating and interrogating data, which can direct their research, allow them to form hypotheses and support subsequent evidenced backed conclusions from the data.

2. Method:

The Office of National Statistics ("ONS") has classified the geography of England into a variety of boundaries including small geographical areas called 'Lower Super Output Areas' ("LSOAs") (last material update in 2011) that contain similar population sizes or numbers of households, [*Reference* (1)]. These LSOAs are used by the ONS and other national, regional and local government bodies/ agencies to collect and report on a wide variety of data including population demographics, socio-economic, health, housing, tax etc. While there is a wealth of publicly available information available for examination, the consolidation and analysis of the data is often labour-intensive and can a require computational and mathematical skillset.

To examine the 10 most deprived LSOA in England, the Environs application has consolidated and mapped the following information:

- The Office of National Statistics geographical boundary data which the Environs application has used to map the data outlined below, to a map of the UK. [*References:* (1), (2)]

- The Ministry of Housing, Communities & Local Government Indices of Multiple Deprivation ("IMD") data (last updated in 2019) which indicates the level of deprivation for the

population for a particular geographical area. The IMD 2019 report/data includes detailed rankings and scores at the LSOA level as well as at larger geographical areas including Local Authority Districts, upper-tier Local Authorities, Local Enterprise Partnerships and Clinical Commissioning Groups]. For this particular introductory analysis, IMD rankings at the lowest LSOA level have been used. [*References:* (3)*,* (4)*,* (5)]

- The Office of National Statistics Mid-2020 LSOA Population Estimates (published 16 September 2021) which includes population counts by LSOA, age and by male/female. [*References:* (6)*,* (7)*,* (8)].

- HM Revenue and Customs personal tax credits award statistics (as at 31 August 2019) which shows the number of number of families/children benefitting from tax credits by LSOA. [*References:* (9) (10) (11)]

- Data.police.uk crime and policing data published online and available at LSOA geographical granularity. In this analysis, the Environs application has used offence numbers between January 2019 and June 2021 to calculate the average number of offences per month. *[References:* (12)*]*

Using the above data, the Environs application has identified the 10 LSOAs with the lowest combined IMD rank, and which are considered the most deprived, and an analysis has been undertaken for each LSOA of the following criteria:

- Income IMD,

- Employment IMD,

- Education IMD,

- Health IMD,

- Access to Service IMD

- Community Safety IMD,

- Population profile by age. To limit the number of age bands used in this introductory analysis, the following have been used 0-17 (children); 18-30 (young adults); 30-50 years, 51-70, 71+,

- Population profile by male/female,

- Personal tax credit: This includes the number of families in receipt of personal tax credit and the number of children in those families,

- Average number of offences per month by category including Anti-social behaviour Order ("ASBO"), Drugs, Burglary, Robbery, Violence & Sexual Offences, Criminal Damage.

Environs

3. Results:

3.1. The 10 LSOAs in England with lowest Combined IMD rank

Figure 1 - The 10 most deprived LSOAs in England (as at 2019)

Figure 2 - Indices of Multiple Deprivation for LSOAs with lowest combined IMD in England (as at 2019)

LSOA Name	Local authority	Combined IMD	Income IMD	Employment IMD	Education IMD	Health IMD	Access to Service IMD	Community Safety IMD
Tendring 018A	Tendring	1	4	1	2	50	8235	15
Blackpool 010A	Blackpool	2	1	7	38	3	22122	8
Blackpool 006A	Blackpool	3	39	6	247	1	19540	1
Blackpool 013B	Blackpool	4	84	39	205	55	21179	32
Blackpool 013A	Blackpool	5	93	40	123	28	19658	3
Blackpool 013D	Blackpool	6	8	8	523	5	17799	91
Blackpool 010E	Blackpool	7	36	22	740	29	21798	17
Blackpool 011A	Blackpool	8	10	43	335	60	24524	50
Blackpool 008D	Blackpool	9	11	38	448	22	20510	14
Liverpool 019C	Liverpool	10	123	86	367	46	27122	526

Figure 2 shows the 10 LSOAs with the lowest combined IMD ranks. LSOA Tendring 018A is in the Local Authority of Tendring and has the lowest Combined IMD rank (1), placing it as the most deprived LSOA in England. Tendring 018A has corresponding low rankings in the other IMD sub-categories of income (4th lowest), employment (1st lowest), education (2nd lowest), health (50th lowest) and community safety (15th lowest). The Access to Services IMD rank of 8235th, is also comparatively lower (9,564 places lower) than the other LSOAs featured in Figure 2 that typically ranked between 17,799th and 27,122th.

Of the 10 LSOAs with the lowest combined IMD rank, 8 were within the Blackpool local authority. LSOA Blackpool 010A had the lowest Income IMD rank for England and came in 3rd lowest for Health IMD. Blackpool 006A had the lowest health IMD rank (1st) of the whole of England.

3.2. _Population profile by age band of the 10 most deprived LSOAs in England_

Figure 3 -Population profile by age for LSOAs with lowest combined rank in England (mid-2020). Percentages shown are for split by age band.

LSOA Name	Ages 0-17	Ages 18-30	Ages 31-50	Ages 51-70	Ages 71+	Total All Ages
Tendring 018A	345 17%	243 12%	435 21%	711 34%	338 16%	2072
Blackpool 010A	405 29%	260 18%	341 24%	315 22%	92 7%	1413
Blackpool 006A	188 12%	275 18%	479 31%	517 33%	92 6%	1551
Blackpool 013B	298 21%	242 17%	381 26%	425 29%	98 7%	1444
Blackpool 013A	297 21%	219 16%	350 25%	404 29%	133 9%	1403
Blackpool 013D	197 14%	212 15%	370 26%	453 32%	171 12%	1403
Blackpool 010E	311 21%	246 16%	443 29%	358 24%	159 10%	1517
Blackpool 011A	444 32%	231 16%	340 24%	302 22%	86 6%	1403
Blackpool 008D	303 21%	227 16%	356 25%	397 28%	137 10%	1420
Liverpool 019C	453 26%	347 20%	458 27%	310 18%	144 8%	1712

Figure 4 - Population profile by age band for LSOAs with lowest combined rank in England (mid-2020)
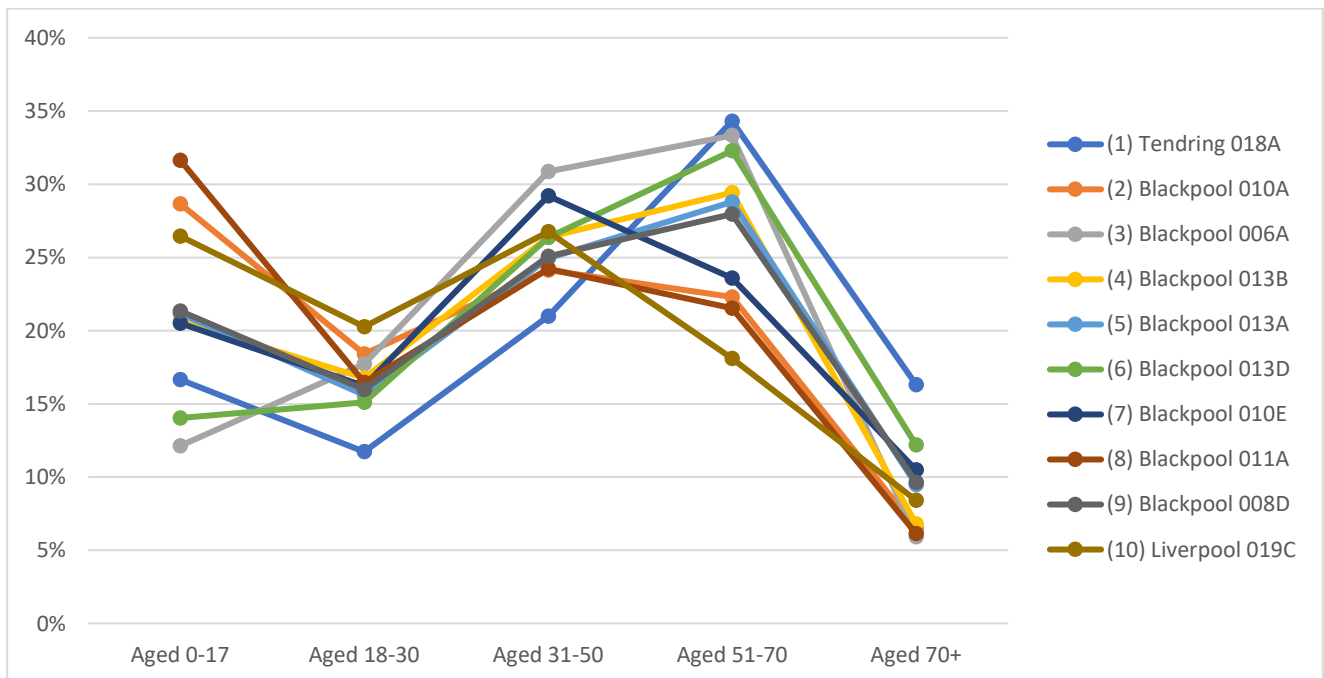
Figure 4 shows that for all LSOAs (except Blackpool 013B) the proportion of individuals within the 18-30 age band is lower than 0-17 age band. Further research and analysis would be required to identify the cause(s) of this reduction but which could include, for example, children leaving these LSOAs upon reaching adulthood; or that there are a larger number of children being born or moving to these LSOAs compared to historically.

Individuals within the 70+ age band make up the smallest proportion of each LSOA.

3.3. Population profile by male/female of the 10 most deprived LSOAs in England

Figure 5 - Population profile by male/female and age band for LSOAs with lowest combined IMD rank in England (mid-2020). Percentages shown are for male/female split

LSOA Name	Male/ Female / Total Count	Aged 0-17	Aged 18-30	Aged 31-50	Aged 51-70	Aged 70+	Total Count
Tendring 018A	Males	214 (62%)	134 (55%)	232 (53%)	351 (49%)	163 (48%)	1094 (53%)
	Females	131 (38%)	109 (45%)	203 (47%)	360 (51%)	175 (52%)	978 (47%)
	Total	345	243	435	711	338	2072
Blackpool 010A	Males	203 50%)	122 (47%)	170 (50%)	155 (49%)	57 (62%)	707 (50%)
	Females	202 (50%)	138 (53%)	171 (50%)	160 (51%)	35 (38%)	706 (50%)
	Total	405	260	341	315	92	1413
Blackpool 006A	Males	92 (49%)	144 (52%)	305 (64%)	374 (72%)	66 (72%)	981 (63%)
	Females	96 (51%)	131 (48%)	174 (36%)	143 (28%)	26 (28%)	570 (37%)
	Total	188	275	479	517	92	1551
Blackpool 013B	Males	168 (56%)	118 (49%)	208 (55%)	231 (54%)	45 (46%)	770 (53%)
	Females	130 (44%)	124 (51%)	173 (45%)	194 (46%)	53 (54%)	674 (47%)
	Total	298	242	381	425	98	1444
Blackpool 013A	Males	170 (57%)	123 (56%)	201 (57%)	223 (55%)	76 (57%)	793 (57%)
	Females	127 (43%)	96 (44%)	149 (43%)	181 (45%)	57 (43%)	610 (43%)
	Total	297	219	350	404	133	1403
Blackpool 013D	Males	118 (60%)	133 (63%)	216 (58%)	265 (58%)	86 (50%)	818 (58%)
	Females	79 (40%)	79 (37%)	154 (42%)	188 (42%)	85 (50%)	585 (42%)
	Total	197	212	370	453	171	1403

LSOA Name	Male/ Female / Total Count	Aged 0-17	Aged 18-30	Aged 31-50	Aged 51-70	Aged 70+	Total Count
Blackpool 010E	Males	176 (57%)	121 (49%)	255 (58%)	213 (59%)	81 (51%)	846 (56%)
	Females	135 (43%)	125 (51%)	188 (42%)	145 (41%)	78 (49%)	671 (44%)
	Total	311	246	443	358	159	1517
Blackpool 011A	Males	242 (55%)	96 (42%)	176 (52%)	165 (55%)	38 (44%)	717 (51%)
	Females	202 (45%)	135 (58%)	164 (48%)	137 (45%)	48 (56%)	686 (49%)
	Total	444	231	340	302	86	1403
Blackpool 008D	Males	156 (51%)	96 (42%)	202 (57%)	204 (51%)	73 (53%)	731 (51%)
	Females	147 (49%)	131 (58%)	154 (43%)	193 (49%)	64 (47%)	689 (49%)
	Total	303	227	356	397	137	1420
Liverpool 019C	Males	230 (51%)	155 (45%)	267 (58%)	176 (57%)	62 (43%)	890 (52%)
	Females	223 (49%)	192 (55%)	191 (42%)	134 (43%)	82 (57%)	822 (48%)
	Total	453	347	458	310	144	1712

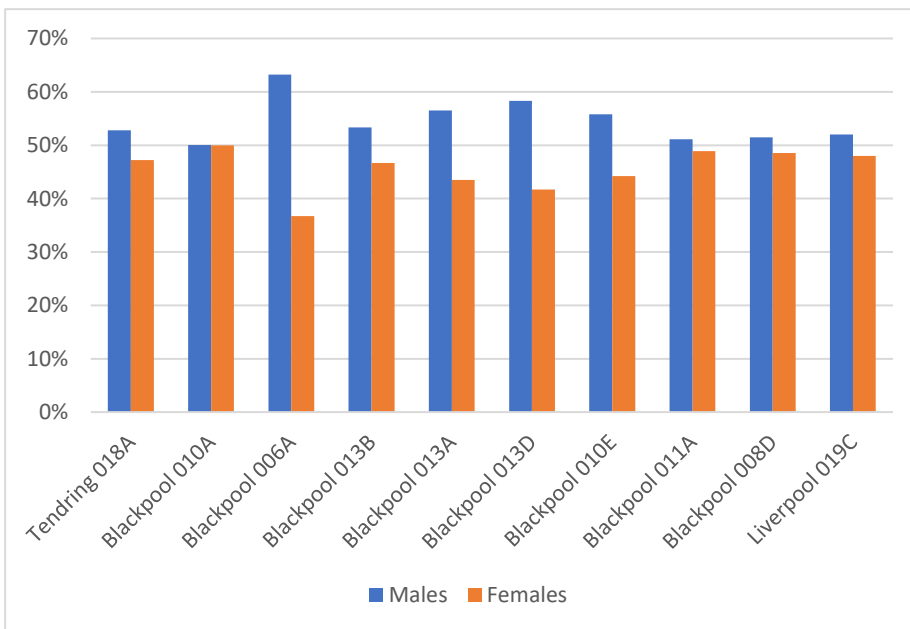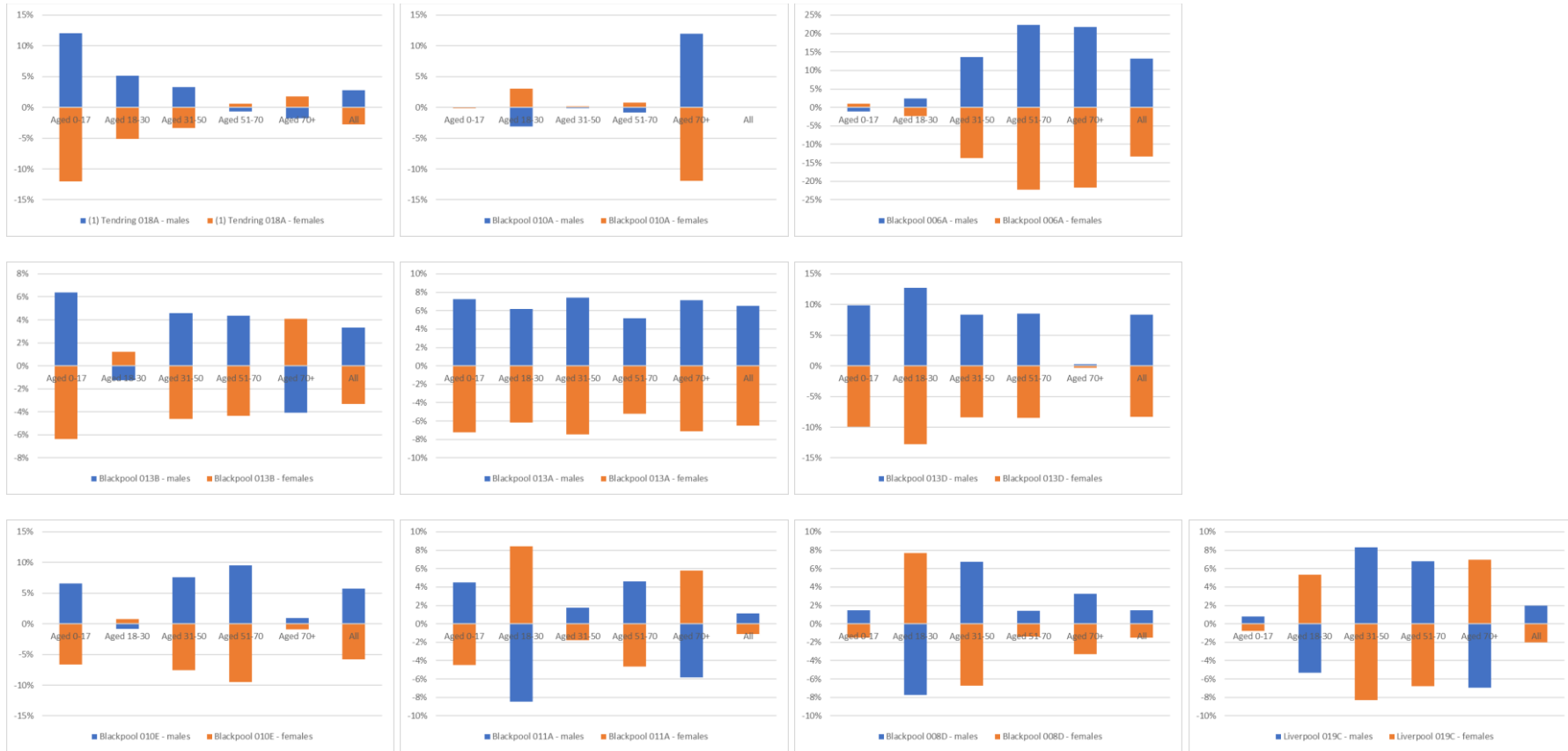*Figure 6 - Population profile by male/female for LSOAs with lowest combined IMD rank in England (mid-2020)*

Figure 6 shows that for all LSOAs, except Blackpool 010A, the male population count exceeds the female population count. Blackpool 006A in particular had the largest difference with males accounting for 63% vs. females at 37% of the population. Figure 5 shows that for Blackpool 006A,

the number of males significantly exceeded the number of females in the age band categories: 31-50 years (64%) and 51-70 years (72%) and 71+ years (72%).

The individual male/female breakdown by age band is show in Figure 7 below.

Figure 7 - Male/Female population variance by age band for the LSOAs with lowest combined IMD rank in England (mid-2020)

3.4. Personal Tax Credits

Figure 8 - Tax credits for LSOAs with lowest combined IMD 2019 in England (2021)

LSOA Name	Number of children in LSOA (0-17)	Number of families in receipt of personal tax credits	Number of children in families that are in receipt of personal tax credits	% of children in receipt of tax credits (calculated by Environs)
Tendring 018A	345	120	230	67%
Blackpool 010A	405	120	270	67%
Blackpool 006A	188	100	115	61%
Blackpool 013B	298	145	195	65%
Blackpool 013A	297	130	175	59%
Blackpool 013D	197	100	115	58%
Blackpool 010E	311	110	225	72%
Blackpool 011A	444	155	295	66%
Blackpool 008D	303	130	235	78%
Liverpool 019C	453	120	220	49%

Figure 8 shows that for all LSOAs (except Liverpool 019C) more than half of children are in families that receive personal tax credits. Blackpool 010E has the highest proportion with 72% of children in families that receive tax credits.

3.5. Crime profile of the 10 most deprived LSOAs in England – Offences per month

Figure 9 - Average number of offenses carried out per month for LSOAs with lowest combined IMD rank in England (2021)

LSOA Name	Offences per month					
	ASBO	Drugs	Burglary	Robbery	Violence & Sexual Offences	Criminal Damage
Tendring 018A	25	1	3	1	37	11
Blackpool 010A	41	2	3	1	22	6
Blackpool 006A	63	3	4	1	48	9
Blackpool 013B	37	2	4	0	27	6
Blackpool 013A	41	3	2	1	28	8
Blackpool 013D	42	3	3	1	26	7

Blackpool 010E	74	3	6	1	45	10
Blackpool 011A	26	1	2	0	17	5
Blackpool 008D	37	1	2	0	18	5
Liverpool 019C	8	10	2	1	20	4

Figure 10 - Average number of offenses carried out per month for LSOAs with lowest combined IMD rank in England (2021)
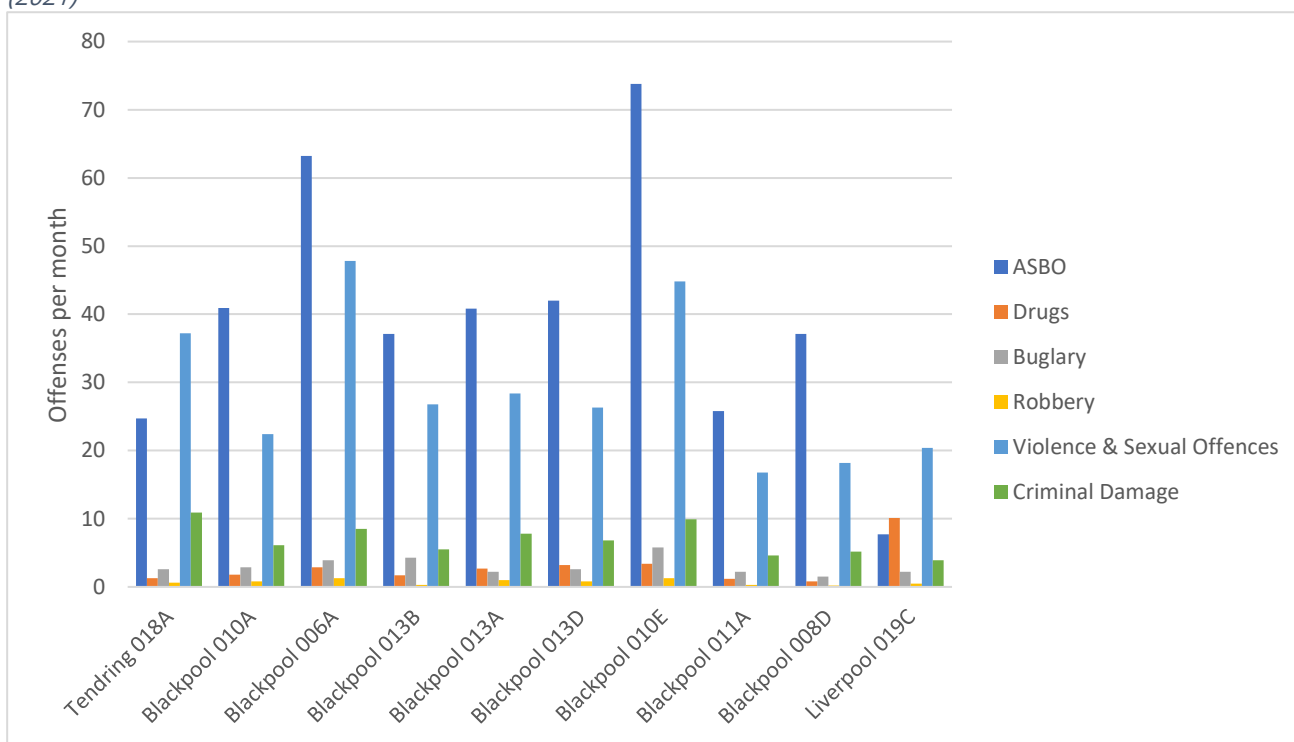

Figure 9and Figure 10 shows that 'ASBO' and 'Violence & Sexual Offences' are the prevalent offence types in 9 out of the 10 LSOAs. In Liverpool 019C 'Violence & Sexual Offences' and 'Drugs'

4. Conclusion:

In consolidating a variety of publicly available data the Environs application has highlighted a number of questions which could be further explored to better understand the profiles of the 10 most deprived LSOAs in England. These questions include and are not limited to:

- A comparison of the LSOAs to others within the same local authority to determine what the causes might be of the level of deprivation.

- Further investigation into the IMD sub-categories to understand the drivers of the deprivation and what what changes would be necessary to reduce the deprivation.

- Further investigation into the population demographics of the LSOAs including more detailed age band analysis, why males exceed females in the LSOAs and how these

compare to other LSOAs within the same local authorities / within the 100 most deprived LSOAs.

- Further investigation into the personal tax credit metrics and how the LSOAs compare to those within the same local authority and for the 100 most deprived LSOAs.

- Further investigation into the crime data for the LSOAs and comparisons to the local authority/ 100 most deprived LSOAs; as well as possible correlations between crime and education, income, (mental) health and access to services.

5. References

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