



Ministry of Justice

Associations between being male or female and being sentenced to prison in England and Wales in 2015.

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Summary and Aims

This research demonstrated that for offenders convicted for a recordable¹ offence in 2015, there was an association between the sex² of the offender and being sentenced to prison. Under similar criminal circumstances the odds of imprisonment for males were higher compared to females. While statistically significant, the 88% increase in the odds of imprisonment for males represented a medium-sized effect³.

Across all specific offence groups examined⁴, there was an association between the sex of the offender and the odds of imprisonment whereby males were more likely to be imprisoned than females. The association varied across offence groups. For example, the analysis found small increases of 35% in the odds of imprisonment for males within shoplifting or theft (non-motor), but large increases of 267% for violence against the person and public order and harassment offences, and 362% for drug import/export/production offences.

The analysis also observed variations in the association between sex and the odds of imprisonment across ethnic groups. Under similar criminal circumstances, the odds of imprisonment for male and female offenders identified by police⁵ as belonging to a Black, Asian or Minority Ethnic (BAME) ethnic group were higher compared to male and female offenders identified as White. For BAME males, the effect was a medium sized increase (50%) in the odds of imprisonment compared to White males. For BAME females, the effect was a small sized increase (28%) in the odds of imprisonment compared to White females⁶.

The aim of this research was to explore further work on factors associated with the odds of imprisonment published by the Ministry of Justice in 2015. The earlier study found that, for offenders convicted of recordable offences in 2011 in England and Wales, there was an

¹ Offences recorded on the Police National Computer (PNC). This excludes lower-level offences which are likely to attract only a fine.

² 'Sex' is considered here to refer to whether someone is male or female based on their physiology, with 'gender' representing a social construct or sense of self that takes a wider range of forms. We refer to sex rather than gender in this paper because the binary classification better reflects how individuals are generally reported in data relating to the Criminal Justice System.

³ Effect sizes were judged to be small, medium and large based on values of Cohen's D, a calculation which facilitates interpretation of the results of the type of analysis conducted here. Categorisation was as follows: Small Cohen's D < 0.2; Medium Cohen's D => 0.2 to < 0.5; Large Cohen's D >= 0.5.

⁴ Where volumes were sufficient for statistical analysis.

⁵ Ethnicity data in the PNC is officer-identified ethnicity as opposed to self-identified ethnicity.

⁶ Similar to offenders as a whole, the odds of imprisonment for BAME males were higher than for BAME females.

association between being male⁷ and an increase in the odds of being sentenced to prison⁸. The analysis also found an interaction between sex and ethnicity, whereby the odds of imprisonment for BAME male and female offenders were higher than for white male and female offenders.

The current research investigated whether similar associations to those observed using 2011 data were observed again in 2015. It used more recent data (2015 calendar year), and included a more detailed analysis of the associations between sex and the odds of imprisonment across ethnicity and also specific offence groups.

While a number of associations were observed between the likelihood of custodial sentencing and a range of offence / offender characteristics, it is important to note that the current analysis did not take into account all factors which were used in making sentencing decisions. For example, the analysis used twenty broad offence groups, allowing for comparisons between males and females within these groups. However, there remains a range of offence seriousness within the offence groups (e.g. murder and common assault are both Violence against the person offences), which is not included in the modelling. Furthermore, the mitigating and aggravating circumstances surrounding offences could not be included in the statistical models. Future analyses could include more detailed measures of offence seriousness to provide a fuller picture of the observed associations between offender sex and sentencing.

Approach

This research used an extract from the Police National Computer (PNC) recording the most severe sentence⁹ given to all offenders¹⁰ convicted for an offence in 2015 plus previous criminal history ($n=354,699$ offenders; 53,892 females and 300,807 males). A high proportion of female offenders prosecuted are dealt with for TV licence evasion, which is not a recordable offence and is therefore excluded from the analysis. The results can only be generalised, therefore, to cases where offenders were convicted for a recordable offence in 2015.

Multivariate logistic regression models were built to account for the associations between sex, officer-identified ethnicity, age, offence group, previous criminal history, and being sentenced to prison, compared with being sentenced to another type of disposal such as a community order, suspended sentence order, or discharge. This allowed the associations between sex and imprisonment to be examined under similar criminal circumstances.

Limitations

While the logistic regression models allowed the associations between sex and imprisonment to be examined under similar criminal circumstances, these models cannot

⁷ Compared with being female.

⁸ Compared with being sentenced to another type of disposal such as a community order, suspended sentence order, or discharge.

⁹ Where an offender was convicted of more than one offence at the same court hearing, the offence attracting the most severe sentence was considered to be the main offence. Where an offender was convicted of more than one offence in 2015, the earliest main offence in the calendar year was included, but no later main offences. For example, if an offender was convicted of offences at a court hearing in January, and other offences at a court hearing in March, the main offence in January was included, but not the offence(s) in March. We cannot know from the data any other drivers behind plea making decisions such as gravity of pending offences.

¹⁰ All persons – companies were excluded.

take into account all factors involved in sentencing¹¹: for example, they do not include the specific offence committed or any associated mitigating and aggravating factors.

Additionally, ethnicity was observed using PNC data, and may not always be reliable¹². However, there tends to be a high degree of consistency between self-reported and officer-identified ethnicity¹³. Therefore, assuming that police-recorded ethnicity is a credible proxy of self-declared ethnicity, the results indicate where further investigation may be warranted.

Results

A. Descriptive Statistics

Table 1 shows the characteristics of female and male sentenced defendants and the unadjusted imprisonment rate by key characteristics.

The unadjusted¹⁴ imprisonment rates varied according to a number of defendant characteristics. The overall rate of imprisonment for all sentenced offenders was 16%, with the remaining 84% receiving another punishment such as a community sentence, suspended sentence order, or discharge. Females were less likely to be imprisoned than males (8% versus 18%).

Across all age groups, males were more likely to be imprisoned than females. Beyond this, variations in imprisonment rates across the age groups followed a similar pattern for both sexes. For both male and female offenders, 31 to 40 was the most frequent age category, and this age group also had the highest rates of imprisonment (20% for males and 10% for females). Unsurprisingly, the lowest rate of imprisonment for both sexes was for offenders aged under 18 (7% for juvenile males and 2% for juvenile females).

Based on police-identified ethnicity, 82% of female and 79% of male offenders were recorded as White, while 11% and 18% were, respectively, recorded as BAME. Missing ethnicity data was higher for females than males (7% compared to 3%). Without controlling for any other variables or conditions, higher unadjusted rates of imprisonment were observed for BAME defendants compared with White defendants. The highest rate of imprisonment (22%) was observed for BAME males, compared to 17% for White males. The lowest rate of imprisonment was observed for White females (8%), compared to 11% for BAME females¹⁵.

The most common offence groups for sentenced females were theft (non-motor) and violence against the person, accounting for about 22% of offences committed by females. For males, the most common offence group was violence against the person (22%), followed by drink driving (12%). For males, imprisonment rates were highest for acquisitive violence (69%) and burglary (domestic) (63%). For females, the highest imprisonment rate was for sexual (against child) offences at 57% (based on a sample of 75 female offenders) followed by an imprisonment rate of 56% for acquisitive violence.

¹¹ The analysis relied on the PNC database, and no other information, such as courts data was accessed.

¹² The ethnicity of the defendant may have been wrongly recorded by a police officer or administrator.

¹³ The MoJ Court Proceedings database for defendants holds both officer identified and self-identified ethnicity for the same individual. The matches between shared ethnic groups between these two measures of ethnicity are high, with: White (98%), Black (96%) and Asian (90%). See MoJ (2015) for further details on the comparison of police-recorded and self-recorded ethnicity of defendants.

¹⁴ The imprisonment rate when not controlling for any other variables or conditions.

¹⁵ The 2015 study 'Associations between police-recorded ethnic background and being sentenced to prison in England and Wales' also reported higher unadjusted imprisonment rates for BAME offenders.

Table 1. Characteristics of male and female defendants sentenced for their first main offence in 2015, and the rate of imprisonment, England and Wales.

		Females			Males		
		N	%	% Imprisoned	N	%	% Imprisoned
Age at sentencing	Under 18	2,594	5%	2%	15,391	5%	7%
	18 to 21	5,816	11%	5%	39,706	13%	16%
	22 to 25	7,207	13%	7%	48,307	16%	18%
	26 to 30	8,896	17%	9%	52,838	18%	20%
	31 to 40	14,384	27%	10%	73,148	24%	20%
	41 to 50	9,829	18%	8%	45,123	15%	17%
	51 and older	5,166	10%	6%	26,294	9%	16%
Officer-identified ethnicity	White	44,357	82%	8%	236,927	79%	17%
	BAME	5,841	11%	11%	53,896	18%	22%
	Ethnicity not known	3,694	7%	3%	9,984	3%	8%
Offender Group Reconivction Scale 4 ¹⁶	Violence against the person	11,721	22%	7%	66,068	22%	20%
	Acquisitive violence	232	0%	56%	3,631	1%	69%
	Public order and harassment	3,983	7%	4%	30,667	10%	13%
	Sexual (not against child)	56	0%	32%	4,781	2%	42%
	Sexual (against child)	75	0%	57%	5,509	2%	53%
	Drunkenness	1,089	2%	0%	6,035	2%	0%
	Burglary (domestic)	424	1%	35%	5,659	2%	63%
	Burglary (other)	233	0%	24%	4,968	2%	37%
	Theft (non-motor)	12,050	22%	13%	31,216	10%	19%
	Handling stolen goods	462	1%	10%	3,230	1%	23%
	Fraud and forgery	2,944	5%	18%	8,934	3%	31%
	Absconding/bail	1,070	2%	7%	6,234	2%	11%
	Vehicle-related theft	372	1%	6%	6,590	2%	20%
	Welfare fraud	585	1%	2%	425	0%	4%
	Motoring offences	1,654	3%	3%	15,152	5%	14%
	Drink driving	8,046	15%	0%	35,258	12%	2%
	Criminal damage	2,362	4%	4%	18,758	6%	6%
	Drug import/export/production	382	1%	10%	4,526	2%	24%
Drug possession/supply	2,768	5%	10%	30,529	10%	18%	
Other offences	3,384	6%	7%	12,637	4%	11%	
Offending History	No prior convictions or cautions	17,466	32%	5%	58,976	20%	11%
	One or more prior convictions or cautions	36,426	68%	9%	241,831	80%	19%
Total N		53,892		8%	300,807		18%

Percentages within groups may not sum to 100 due to rounding.

¹⁶ These aggregated offence groups were developed as part of the Offender Group Reconivction Scale version 4/G (OGRS4/G), a statistical predictor of proven reoffending. As such, the offence classification system optimises OGRS4/G's predictive validity by contrasting the reoffending rates of those convicted of different types of offence, and the resulting groups are not directly comparable with those recorded in the court appearance data, which are used when custody rates are published in the Criminal Justice Statistics Quarterly and for other related statistics.

Eighty percent of males, and 68% of females had one or more prior convictions or cautions, while one-fifth (20%) of males, and one-third (32%) of females had none. For both sexes, the rate of imprisonment was higher for offenders with one or more prior convictions or cautions. For females the rates were, respectively, 9% compared to 5% for those with no prior convictions or cautions. For males, they were 19% compared to 11%.

In order to make more meaningful comparisons of the imprisonment rates between male and female defendants, these factors were added to a series of logistic regression models, with imprisonment (or not) as the outcome. Age was entered using the seven bands shown in Table 1. Ethnicity was entered as White, BAME, or ethnicity not known. Offence group was recorded using the Offender Group Reconviction Scale 4 classification. These aggregated offence groups were developed as part of the Offender Group Reconviction Scale version 4/G (OGRS4/G), a statistical predictor of proven reoffending, and are not directly comparable with those recorded in the court appearance data, which are used when custody rates are published in the Criminal Justice Statistics Quarterly and for other related statistics. Previous convictions and cautions were entered as both a binary (yes/no) and a continuous variable (number of previous convictions or cautions).

This allowed any independent associations between sex and imprisonment to be examined while these other factors were held constant, hence allowing comparisons to be made under similar criminal circumstances.

B. Sex and sentencing

Table 2 shows the results of the logistic regression model ($n = 354,699$ offenders). Where comparisons were made between categories within factors, the reference categories are provided in parentheses (¹⁷). An odds ratio (OR) greater than one¹⁸ shows increased odds of being sentenced to prison, and an odds ratio of less than one shows decreased odds of being sentenced to prison, compared to the reference category.

Odds ratios are related to probability or likelihood: increased odds means increased probability of being sentenced to immediate custody (imprisonment). However, odds can take any value greater than zero, while probability is restricted to values between 0 and 1 (or 0% and 100%). A 40% increase in odds (OR of 1.4) is considered small, while a 500% increase in odds (OR of 5.0) is large, for example. The standard error shows how much the estimate varied across cases. The odds ratios have been converted into Cohen's D: a standardised effect size measure which, for statistically significant associations, is interpreted in the 'Effect size' column as Small (S), Medium (M), or Large (L).

Sex

The odds of males being sentenced to imprisonment were higher than those of females. The effect was statistically significant and medium sized (an 88% increase in the odds of imprisonment for males).

Age

Compared to juveniles (aged under 18), the odds of imprisonment were statistically significantly higher for adults of all age groups. The increases in the odds of imprisonment varied from 308% for offenders aged 51 and older, up to 490% for those aged 26 to 30, but all effect sizes were large.

¹⁷ E.g. for sex as a factor, males are compared against females.

¹⁸ Plus reaching statistical significance.

Ethnicity

Being identified as BAME was associated with a 49% increase in the odds of imprisonment compared to the White category. This effect was medium sized. Further analyses were conducted to explore the association between police-identified ethnicity and imprisonment within the sexes (see Section C).

Table 2. Logistic regression model for the likelihood of being sentenced to prison, for those convicted and sentenced for offences in 2015.

Effect	Odds Ratio	95% Confidence Limits		Cohen's D	Effect Size	
Demographics	(Female)					
	Male	1.882 ***	0.632	0.597	0.349	M
	(Under 18)					
	18 to 21	4.014 ***	1.390	1.318	0.766	L
	22 to 25	4.728 ***	1.554	1.482	0.856	L
	26 to 30	4.901 ***	1.590	1.518	0.876	L
	31 to 40	4.354 ***	1.471	1.401	0.811	L
	41 to 50	3.399 ***	1.223	1.151	0.674	L
	51 and older	3.080 ***	1.130	1.053	0.623	L
	(White)					
BAME	1.492 ***	0.400	0.375	0.220	M	
Ethnicity not known	0.738 ***	-0.304	-0.378	0.168	S	
Offender Group Reconviction Scale 4	(Violence against the person)					
	Absconding/bail	0.392 ***	-0.936	-1.015	0.516	L
	Acquisitive violence	13.279 ***	2.586	2.506	1.426	L
	Burglary (domestic)	6.129 ***	1.813	1.754	1.000	L
	Burglary (other)	1.751 ***	0.560	0.497	0.309	M
	Criminal damage	0.254 ***	-1.372	-1.433	0.756	L
	Drink driving	0.078 ***	-2.556	-2.639	1.409	L
	Drug import/export/production	1.272 ***	0.241	0.170	0.133	S
	Drug possession/supply	0.780 ***	-0.248	-0.283	0.137	S
	Drunkness	0.004 ***	-5.427	-5.971	2.992	L
	Fraud and forgery	2.049 ***	0.718	0.672	0.396	M
	Handling stolen goods	0.969	-0.032	-0.116	0.017	S
	Motoring offences	0.625 ***	-0.470	-0.520	0.259	M
	Other offences	0.518 ***	-0.657	-0.716	0.362	M
	Public order and harassment	0.545 ***	-0.608	-0.646	0.335	M
	Sexual (against child)	7.740 ***	2.046	1.987	1.128	L
	Sexual (not against child)	3.380 ***	1.218	1.156	0.672	L
	Theft (non-motor)	0.617 ***	-0.483	-0.517	0.266	M
Vehicle-related theft	0.881 ***	-0.127	-0.192	0.070	S	
Welfare fraud	0.263 ***	-1.336	-1.721	0.737	L	
Offending History	(No previous convictions or cautions)					
	Any previous convictions or cautions	1.337 ***	0.291	0.258	0.160	S
	Each additional previous conviction or caution	1.035 ***	0.035	0.034	0.019	S

*** Denotes statistical significance at $p < 0.01$; Effect Size is shown only for statistically significant effects.

Offence group

Compared to violence against the person offences¹⁹, the odds of imprisonment for other offence groups varied. In terms of large increases, acquisitive violence offences were associated with a 1328% increase in the odds of imprisonment, while sexual (against child) offences and burglary (domestic) were associated with increases of 774% and 613% respectively. In contrast, drink driving, welfare fraud, and absconding (bail) were all associated with large statistically significant decreases in the odds of imprisonment. The only offence group that had an imprisonment rate that could not be shown to differ from violence against the person was handling stolen goods.

Previous convictions or cautions and previous custodial sentences

The odds of imprisonment were 34% higher for the average prior offender²⁰ compared to those with no prior convictions or cautions. The odds of imprisonment increased with the number of prior convictions or cautions; the analysis found that the odds of imprisonment increased by about 3.5% for each prior conviction or caution. This would translate into a roughly 35% increase in the odds of imprisonment for someone with 10 prior convictions or cautions.

C. Sex, ethnicity and sentencing

In this analysis, the association between ethnicity, sex, and imprisonment were explored in more detail. To investigate the role that ethnicity plays in the relationship between sex and odds of imprisonment, separate regression models were built for females and males. **Table 3** shows the odds of a custodial sentence for BAME females compared to white females, and BAME males compared to white males.

It is important to note that these are separate BAME effects within the two sexes. In line with the main model, BAME males are more likely to be sentenced to custody than BAME females.

Table 3: Comparison of the association between officer-identified ethnicity and the odds of imprisonment for females and males.

		Female (OR)	Male (OR)
(White)			
BAME		1.283 ***	1.504 ***
95% Confidence Limits	Lower	1.165	1.466
	Upper	1.413	1.544
Cohen's D		0.137	0.225
Effect Size		S	M

*** Denotes statistical significance at $p < 0.01$; Odds ratios derived from models which also include age, offence group and prior offending.

Belonging to a BAME ethnic group was more strongly associated with an outcome of imprisonment for males than females. Compared to White males, the odds of imprisonment for BAME males were around 50% higher (a medium-sized effect). In contrast, for BAME females the odds of imprisonment were around 28% higher (a small-sized effect) compared to White females. The 2015 analysis of 2011 data found similar associations; both BAME females and males experienced higher odds of imprisonment compared to white females

¹⁹ Violence against the person offences were chosen as the base comparison in order to mirror the 2015 analysis.

²⁰ The increased odds of 34% relates to the average mix of previous cautions/convictions the average prior offender has, with each prior adding 3.5% extra to the odds. That is to say, the 34% increase would not be seen if, for example, an offender only had one previous conviction or caution.

and males, with a greater increase in odds of imprisonment for BAME males than BAME females.²¹

As noted in 'Statistics on Race and the Criminal Justice System 2014', differences in sentencing between ethnic groups may be attributable to a range of factors, including differences in the type or seriousness of the offences committed, and patterns of offending and outcomes vary by ethnicity at the level of specific offences.

D. Sex and sentencing within specific offence groups

Further analyses were conducted to explore the extent of the association between sex and custodial sentencing within specific offence groups. These offence groups were chosen as they represent a wide range of offending behaviour. In each case, a separate logistic regression model was built.

It should be noted, however, that each of the offence groups covers a wide range of offences. Variations in the rates of imprisonment could therefore potentially reflect variations in the mix of offences committed by males and females.

Table 4 shows the results of the specific offence group regression models, and the odds of imprisonment for male offenders compared to female offenders. For each of the chosen offence groups, the proportions of female and male offenders, and the proportions of each sex who were sentenced to immediate custody (unadjusted) are shown. The final three columns show the odds ratio of imprisonment for male offenders relative to females (and the 95% confidence intervals for these ratios), under similar criminal circumstances. That is, after adjusting for age, ethnicity, and previous convictions or cautions.

The results show that the association between sex and imprisonment varied within the specific offence groups. However, across all of the specific offences examined (where volumes were sufficient for statistical analysis), there was an association between the sex of the offender and the odds of imprisonment whereby males were more likely to be imprisoned than females. The size of the effect varied across the offences. For example, for shoplifting or theft (non-motor) offences, there was a 35% increase in the odds of imprisonment for males compared to females. In contrast, for violence against the person, or public order and harassment offences the increase was 267%, and for drug import/export/production offences the increase was about 362%.

As noted above, however, the different offence groups cover a range of offences, and so variations in the rates of imprisonment could potentially arise from variations in the mix of offences committed by males and females. Patterns of offending are known to vary by sex within offence groups, as shown in the Offence Analysis chapter of the accompanying statistical bulletin *Statistics on Women and the Criminal Justice System 2015*.

²¹ It should be noted that a time trend analysis on ethnicity and sex was not performed. That is, we did not test for a significant change over time in the odds of imprisonment, and so we cannot comment on whether or not the odds of imprisonment have changed for BAME women or men over time.

Table 4. Case volumes, % of female and male offenders and % imprisoned, and adjusted imprisonment Odds Ratios from offence-group regression models, for selected offence groups

	Unadjusted					Higher-order offence group regression model		
	N	% Female	% Female Imprisoned	% Male	% Male Imprisoned	Imprisonment Odds Ratio (Male vs Female)	95% Confidence Limits	
							Lower	Upper
Violence against the person	77,789	15%	7%	85%	20%	2.677 ***	2.481	2.890
Fraud and forgery	11,878	25%	18%	75%	31%	2.225 ***	1.997	2.478
Welfare fraud[1]	1,010	58%		42%				
Theft (non-motor)[2]	43,266	28%	13%	72%	19%	1.353 ***	1.270	1.441
Drug import/ export/ production	4,908	8%	10%	92%	24%	3.617 ***	2.542	5.147
Drug possession/ supply	33,297	8%	10%	92%	18%	2.193 ***	1.922	2.502
Handling stolen goods	3,692	13%	10%	87%	23%	2.272 ***	1.625	3.177
Public order and harassment	34,650	11%	4%	89%	13%	2.668 ***	2.276	3.127
Television licence evasion[3]	54	26%		74%				
Shoplifting[2]	33,416	30%	11%	70%	18%	1.346 ***	1.250	1.449

*** Denotes statistical significance at $p < 0.01$; Odds Ratios shown are from models also controlling for age, sex, and offending history

[1] Too few offenders convicted of welfare fraud received custodial sentences to conduct further analyses.

[2] Shoplifting is a subset of Theft (non-motor) offences. Shoplifting offences are included in the line showing Theft (non-motor), and shown separately because of the relatively large proportion of females convicted of Shoplifting.

[3] Few cases of television licence evasion were recorded on the PNC (this offence is usually insufficiently serious to be recorded).

Conclusion

The regression models in this analysis showed an independent association between sex and the odds of imprisonment for offences recorded in 2015 in England and Wales. Being male was associated with a medium-sized (88%) increase in the odds of imprisonment compared to females. Being identified as belonging to a BAME ethnic group was also associated with increased odds of imprisonment, and the effect was greater for BAME males than for BAME females.

The association between sex and odds of imprisonment varied within specific offence groups of interest. For example, the analysis found small-sized increases of 35% in the odds of imprisonment for males within shoplifting or theft (non-motor), but large-sized increases of around 267% for violence against the person or public order and harassment offences, and about 362% for drug import/export/production offences. Given the fact that each of the offence groups covers a wide range of specific offences, variations in the imprisonment rate could reflect variations in the patterns of specific offending across the sexes.

The findings reported in this paper are robust but only generalisable to convictions for recordable offences in 2015. The models used in this research are restricted in that they do not account for all factors which influence sentencing decisions. Including additional factors,

such as a lower level of offence granularity, would enable a more accurate examination of the associations identified in this research.

References

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