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LOCATION AND SENTENCING: TO WHAT EXTENT DO CONTEXTUAL FACTORS EXPLAIN BETWEEN COURT DISPARITIES?

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This article investigates the presence of unwarranted between court disparities in England and Wales, examining whether they can be explained by non-legal contextual factors such as the organisation of the court and socio-economic composition of the area. In contrast with previous literature, we emphasise the importance of controlling for a wide range of legally relevant case characteristics. The findings reveal that some preliminary startling trends, such as more severe sentencing in courts located in neighbourhoods with high proportions of Muslim residents, are in fact accounted for by differences in the cases reviewed across courts. These findings call into question the validity of previous studies exploring the influence of the context on sentencing that did not adequately control for legal factors.

Key words: sentencing, multi-level modelling, Census, between-court disparities

Introduction

It is not uncommon to encounter media articles claiming that two apparently similar criminal cases resulted in different punishments because they were sentenced in different locations. Too often these are haphazard comparisons that do not take into account important legal factors that differentiate the cases involved. However, such claims cannot be entirely rejected by referencing the academic literature since legal and criminological research has consistently reported the existence of unwarranted disparities (Tarling and Weatheritt 1979; Halliday 2001; Davies *et al.* 2002; Carter 2003; Hough *et al.* 2003; Herbert 2004; Tarling 2006; Mason *et al.* 2007; Raine and Dunstan 2009; Pina-Sánchez and Linacre 2013).

The presence of between court disparities compromises the principle of equality under the law and undermines public trust in the system, which in turn increases the number of litigations and appeals (Roberts and Plesničar 2015), and negatively affects the overall degree of compliance with the law (Casper *et al.* 1988; Tyler *et al.* 1989). To address this problem, the jurisdiction of England and Wales has embarked on a process of reforming the sentencing practice through the implementation of sentencing guidelines. The ex-Chairman of the Sentencing Council Lord Justice Leveson stated that '[…] *the aim* [of the guidelines] *is to increase the consistency of approach to sentencing so that offenders receive the same approach whether they're being sentenced in Bristol, Birmingham, Bolton or Basildon*'.[1]

Recent research evaluating the effect of the guidelines (Pina-Sánchez and Linacre 2014) has shown improvements in consistency. However, statistically significant

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[1] http://www.bbc.co.uk/news/uk-12681250 [Last Accessed 23 May 2017].

disparities following the implementation of the guidelines were still detected (Pina-Sánchez *et al.* 2016). It is essential to understand how these disparities emerge. Over the last decade, a vast new area of literature has arisen in the United States based on the combination of multilevel modelling techniques and access to official sentence and Census data (Myers and Talarico 1987; Kautt 2002; Ulmer and Johnson 2004; Johnson 2005; 2006; Johnson *et al.* 2008; Feldmeyer and Ulmer 2011; Ulmer *et al.* 2011). These models explore whether the socio-economic composition of the areas where different courts are located and the working conditions within those courts influence sentencing decisions.

Several studies have examined sentencing disparities and contextual influences in the United Kingdom, but so far they have all relied on suboptimal methodologies. For instance, Tarling (2006) and Tarling and Weatheritt (1979) looked at correlations in the use of different sentence outcomes across courts and the use of police cautions in those areas. Mason *et al.* (2007) expanded on this approach, exploring correlations on factors such as the average seriousness of offences sentenced in each criminal justice area, or their crime rate. These studies incorporated some of the factors that were found to have an influence in the United States, however, they were vastly limited, missing crucial area characteristics such as their ethnic composition.

More importantly, the reliance on bivariate correlations is a rudimentary technique for the study of between court disparities. Zatz (1987) refers to these types of analyses as the 'first wave' of studies on sentencing. The author points out how such methods have been discarded because of their incapacity to control for multiple factors simultaneously. As such, they cannot rule out the possibility of confounding effects being responsible for the statistical significance of certain relationships. For example, Mason *et al.* (2007) identified the use of custodial rates in magistrates' courts to be positively associated with the crime rate experienced in their respective criminal justice areas. However, this could simply be a spurious correlation given that crime rate is also associated with factors such as socio-economic status and residential mobility (Shaw and McKay 1942).

These and other problems related to the analysis of bivariate correlations of area level variables[2] (Zatz 1987) can be overcome to a certain extent by using regression techniques. In particular, multilevel modelling allows the study of contextual effects while controlling for relevant case characteristics. That last condition is crucial for studying the emergence of unwarranted disparities across courts. So long as different types of cases are more prevalent in one area than another we should expect to see sentence outcomes being used differently across courts. Analyses of genuine *unwarranted* disparities should identify differences in sentencing that are not due to the variability in cases processed across courts, but to discrepant approaches to sentencing (Bushway and Piehl 2001; Pina-Sánchez and Linacre 2016). To accomplish this it is essential to control for as many legally relevant offence and offender characteristics as possible. That way, the contextual factors included in the model will be able to explore differences in sentencing that cannot be explained legitimately.

Adequately controlling for relevant case characteristics is a problem that even the new wave of aforementioned American studies has been unable to tackle completely. They

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[2]For example loss of statistical power from not using individual level data, or the impossibility to explore non-linear effects.

rely on official data provided by Federal and State Sentencing Commissions, where the only variables defining the case tend to be the criminal record, the offence seriousness (an ordinal scale broadly representing the type of offence),[3] the type of trial (bench or jury), or whether a guilty plea was entered. Models using such a short list of factors to define case characteristics are still prone to confounding effects, since they only tackle the problem partially. For example lenient sentencing in areas with a higher percentage of older residents could actually reflect that in those areas offenders tend to be more cooperative with the police, a mitigating factor that models need to take into account.

In this study the methodological framework developed in the United States will be applied to the jurisdiction of England and Wales using a combination of datasets offering an unprecedented level of detail. Unwarranted disparities in sentencing are defined more robustly than ever before by fully exploiting the potential of the Crown Court Sentencing Survey. Specifically, 54 factual case elements captured by the new guideline of assault offences will be applied. This is 43 more than previous studies on between court disparities that relied on the same data but failed to exploit its depth (Pina-Sanchez 2015; Pina-Sánchez and Linacre 2013; 2014), 45 more than in Fearn (2005) and 47 more than in Johnson (2006), two of the most cited references on the subject. This comprehensive dataset will be further enhanced with the 2011 Census, capturing the socio-economic characteristics surrounding the area where the court is located, and with a series of variables defining the size and work facilities available in each court. Merging these three datasets enables the examination of a vast array of theories put forward in the literature regarding contextual influences on sentencing.

The next section introduces the theoretical approaches that have been used to explain how contextual factors can influence sentencing. The particulars of the data used are subsequently reviewed. This is followed by the analysis section, where the methodological approach and the findings are presented. The study concludes with a discussion of the implications of the findings and methodological suggestions for future research on the topic.

Contextual Factors Affecting Sentencing

A wide range of theories have been put forward to explain how sentencing may come to be influenced by non-legal contextual factors related to the organisation of the court (Eisenstein *et al.* 1988; Flemming *et al.* 1992; Ulmer 1997) and the community in which it is located (Blalock 1967; Quinney 1970; Spitzer 1975; Liska 1992; Reiman 1995; Eitle *et al.* 2002). They are typically based on symbolic interactionist theories such as Albonetti's (1991) *uncertainty avoidance/causal attribution* and Steffensmeier' *focal concerns*.

Albonetti (1991) argued that sentencers operate in a context of bounded rationality in which important decisions must be made about the risk of future offending and the potential for rehabilitation with a limited amount of information. In order to reduce their inevitable uncertainty, sentencers fall back on reasoning that is the product of habit and social structure. They rely on decision-making shortcuts, or 'patterned responses', that may link race, gender and other social status stereotypes to

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[3]These two variables are often combined into a single variable, the presumptive guideline sentence.

the likelihood of future criminal activity. The focal concerns perspective takes a similar view, focusing on assessments of blameworthiness and dangerousness rather than recidivism and rehabilitation (Ulmer 2012). This view asserts that sentencing decisions are based on three primary concerns: blameworthiness, protection of the public and practical constraints (Steffensmeier *et al.* 1993; 1998; Steffensmeier and Demuth 2000; 2001; Ulmer and Johnson 2004). Since judges lack the time, resources and comprehensive background information needed to accurately assess these concerns, they make use of 'perceptual shorthand' (Hawkins 1981), relying on information surrounding both the offender/offence (i.e. offence seriousness, criminal history) in addition to non-legal contextual factors (i.e. court caseload, demographics of the area surrounding the court).

These perspectives assume that it is not only case characteristics that determine the outcome of a sentencing decision, but rather the experiences, stereotypes and potential prejudices of the judge. Since judges are products of the larger social context (Fearn 2005), their preferences and expectations are shaped by the setting in which they work (Myers and Talarico 1987). As such, the organisational, political and social environment is expected to influence sentencing outcomes (Johnson 2006).

Community level factors

Although some research (Fearn 2005) has discussed the impact of age and gender structure on sentencing—with no significant findings—the majority of the literature examining demographic characteristics focuses on race and socio-economic status. Specifically, certain studies suggest that subjective biases may be partly rooted in perceptions of racial (Steffensmeier *et al.* 1993; 1998; Kramer and Ulmer 1996; Demuth 2000; Bontrager *et al.* 2005; Johnson 2005; 2006; Weidner *et al.* 2005; Johnson *et al.* 2008) and socio-economic threat (Myers and Talarico 1987; Fearn 2005). This research extends traditional conflict theories—which argue that individuals who do not share the class characteristics of court officials will be punished more harshly (Chambliss and Seidman 1971)—to the community level. They suggest that there is a sense of threat associated with the proportion of lower-class groups in a community which influences the degree of punishment handed down (Blalock 1967; Liska 1992). It is argued that the middle-class, white majority feels threatened by large proportions of racial minorities and the economically disadvantaged, ultimately leading to harsher punishments in communities with these demographic patterns.

The majority of racial threat theories address the relationship between the proportion of the population that are racial minorities and the punishments handed down to them (Blalock 1967; Eitle *et al.* 2002). They propose that racial minorities who live in areas where their presence is larger will receive harsher sentences since they are perceived to be a threat to the privileged positions of power held by the white majority. The majority will thus use social controls to try to suppress the growing strength of minority groups (Blalock 1967). Although American sentencing research primarily focuses on the black and Hispanic populations, the principles underlying racial threat could extend to prejudice against Muslims—particularly within a European context—given the increased hostility against this religious group in recent decades (Strabac and Listhaug 2008).

Similarly, economic threat theories (Quinney 1970; Spitzer 1975) assert that the socio-economic context (e.g. poverty and unemployment) has an impact on sentencing outcomes. From this perspective, socio-economic stratification intensifies social conflict, which increases a reliance on severe punishments (Chambliss and Seidman 1971). These repressive punishments would then be imposed disproportionately on the lower class (Garland 1990). Economically disadvantaged groups are perceived to be threatening and unpredictable, thus requiring control and repression by the elite. Criminal justice sanctions—particularly incarceration—is a useful way to control this group of individuals that is largely viewed to be less important in terms of their economic contributions (Reiman 1995).

In both racial and socio-economic threat theories, sentencing is used as a mechanism to maintain traditional distributions of power. From this perspective, courts located in areas with large proportions of racial minorities or socially disadvantaged individuals might have more severe punishments. The empirical evidence, however, shows inconsistent support for these hypotheses. Some studies found a relationship between the racial/minority composition and sentencing severity (Steffensmeier *et al.* 1993; 1998; Kramer and Ulmer 1996; Demuth 2000; Bontrager *et al.* 2005; Johnson 2005; 2006; Weidner *et al.* 2005; Johnson *et al.* 2008) while others found no such relationship (Ulmer 1997; Kautt 2002; Weidner and Frase 2003; Weidner *et al.* 2004; Fearn 2005). In other studies, the results showed a relationship that was not in line with the racial threat hypothesis, such as sentencing disparities between Hispanics and whites being greater in areas with smaller as opposed to larger proportions of Hispanics (Feldmeyer and Ulmer 2011).

The same inconsistent findings are demonstrated in relation to socio-economic status, with some research finding that the proportion of socio-economically disadvantaged individuals influenced the severity of sentencing (Myers and Talarico 1987; Fearn 2005), while others finding socio-economic status and sentencing severity were unrelated (Britt 2000; Kautt 2002; Ulmer and Johnson 2004; Johnson 2006).

Organisational factors

Additional contextual factors that have been argued to impact sentencing decisions relate to the environment existing within the court as opposed to the broader setting in which it is located. *Court community* perspectives (Ulmer 2012) view courts as communities made up of the interdependent working relationships of actors such as prosecutors, judges, defence lawyers and court staff (Eisenstein *et al.* 1988; Flemming *et al.* 1992; Ulmer 1997). A distinct social order emerges within the court, creating a unique organisational culture that shapes both case processing as well as the decision-making of individuals within the workgroup. Consequently, sentencing outcomes are made in accordance with the norms that emerge within each court's distinct culture. This perspective demonstrates how meanings, priority and context come to shape the focal concerns relied upon during the sentencing process. It is argued that stereotypes and biases come to affect the interpretation of the focal concerns only so far as there is a court culture that supports them (Kramer and Ulmer 2009; Ulmer 2012). As such, research that examines the impact of organisational issues looks at factors related to

the functioning of the court, such as court caseload, or the size of the court more generally.

Unlike with community level factors, empirical studies show strong and consistent support for theories emphasising the importance of the organisation of the court. Research has shown that the larger a court's caseload the less likely offenders are to receive harsh punishments (Ulmer and Johnson 2004; Ulmer and Bradley 2006; Kramer and Ulmer 2009). This supports Hogarth's (1971) assertion that the workload of a judicial official has a direct influence on the way she makes a decision. When faced with large numbers of cases, it may be beneficial for judges to make lenient sentencing decisions, thus expediting case processing and conserving courtroom resources (Dixon 1995). Other researchers (Ulmer and Johnson 2004; Johnson 2005; 2006) have shown that this relationship is also true when looking at courts' size more broadly, including measures such as the number of judges on staff. This may be related to reduced media visibility in routine case processing and a normative desensitisation to deviant/criminal behaviour in larger court environments (Eisenstein *et al.* 1988; Ulmer 1997).

Unfortunately, the full impact of the organisation of the court on sentencing disparities is unknown due to the limited information available to previous researchers, who up to this point have largely focused on caseload and court size. Given the influence these factors have been shown to exhibit, this area of study would benefit from a more diverse selection of organisational factors.

It is clear that, up to this point, the examination of the impact of contextual factors on the sentencing process has been limited by contradictory results and, in the case of organisational factors, a restricted range of variables. The increased level of detail in the current database is expected to enable a more comprehensive examination of which—if any—of these theories are relevant in England and Wales.

Data

The study uses data from three different sources: (1) the 2011 Crown Court Sentencing Survey (CCSS), a judicial dataset covering the case characteristics of offences sentenced in the Crown Court; (2) a series of Government websites and reports indicating both the workloads experienced across courts and the work facilities available within them; and (3) the 2011 Census, capturing the socio-economic composition of the United Kingdom. The process of accessing these datasets, their characteristics and the decisions made to merge them in a single dataset are described below. The final list of variables used, their means and standard deviations, are presented in Table 1.

The CCSS was commissioned by the Sentencing Council for England and Wales[4] to monitor the impact of its guidelines. The survey records in unprecedented depth the factual elements of each case processed in the Crown Court, making it one of the most detailed sentencing datasets available worldwide. This dataset, however, is not perfect. Despite its aspiration to be a census, the CCSS is affected by non-response; the response rate across 2011 was 61 per cent.

Our sample is composed of offences of assault sentenced from June 2011 to December 2011. Data from subsequent years has not been used since the 2011 CCSS

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[4]Available at: https://www.sentencingcouncil.org.uk/analysis-and-research/crown-court-sentencing-survey/record-level-data/ [Last Accessed 23 May 2017].

Table 1   *Descriptive statistics*

	Mean	Standard deviation
Dependent variables		
Probability of custody	0.48	0.50
Custodial sentence length[a]	698	716
Court characteristics[a]		
Volume of cases processed	2436.26	1214.96
% of appealed cases commenced within 14 weeks	89.01	7.95
% of days court rooms were used	87.79	4.56
Opening time of the court	8.62	0.42
Interview rooms available	0.90	0.30
Private parking available	0.17	0.38
Canteen or vending machine with drinks available	0.93	0.26
Video presentation of evidence available	0.93	0.26
Wifi available to employers and visitors	0.76	0.43
Combined court	0.43	0.49
Area characteristics[b]		
% of Asian ethnic group	0.16	0.11
% of black ethnic group	0.05	0.05
% of Muslim faith	0.09	0.07
% of residents living in social rented housing	0.22	0.16
% with no qualification	0.13	0.09
Case characteristics		
Commonly used case characteristics		
Guilty plea entered at first opportunity	0.32	0.46
Previous convictions: 1–3	0.09	0.29
Previous convictions: 4–9	0.06	0.24
Specific type of offence		
Grievous bodily harm	0.18	0.38
GBH with intent	0.08	0.27
Common assault	0.07	0.25
Violence against the police	0.01	0.08
Violent disorder	0.02	0.15
Actual bodily harm	0.37	0.48
Harm and culpability factors		
Deliberate cause of harm	0.04	0.20
Intention to commit more harm	0.03	0.17
Leading role in gang	0.05	0.23
Motivated by victim's age/gender	0.01	0.08
Premeditation	0.08	0.27
Motivated by victim's race/religion	0.01	0.12
Motivated by victim's sexual orientation	0.01	0.05
Deliberate targeting of vulnerable victim	0.06	0.24
Use of weapon	0.32	0.47
Serious injury	0.23	0.42
Sustained assault on the same victim	0.19	0.39
Victim is particularly vulnerable	0.10	0.31
Lack of premeditation	0.23	0.42
Offender's mental disorder	0.03	0.16
Great degree of provocation	0.08	0.23
Excessive self-defence	0.05	0.22
Subordinate role in gang	0.05	0.21
No serious injury	0.24	0.43
Additional aggravating and mitigating factors		
Abuse of a position of trust or power	0.02	0.13
Offence against public sector worker	0.06	0.23
Offence committed on bail	0.02	0.16
Attempt to conceal or dispose of evidence	0.01	0.08
Victim forced to leave their home	0.01	0.11

Table 1   *Continued*

	Mean	Standard deviation
Evidence of community impact	0.01	0.09
Failure to respond to warnings expressed by others	0.01	0.12
Failure to comply with current court orders	0.05	0.23
Gratuitous degradation of victim	0.02	0.14
Location of the offence	0.25	0.43
Offence committed whilst on licence	0.02	0.13
Ongoing effect upon the victim	0.13	0.34
Presence of others including relatives	0.17	0.37
Previous violence or threats to the same victim	0.06	0.25
Timing of the offence	0.10	0.30
Commission of offence under the influence of alcohol or drugs	0.27	0.44
Steps taken to address addiction or offending behaviour	0.07	0.26
Offender's age or lack of maturity	0.09	0.28
Offender's exemplary conduct	0.16	0.36
Isolated incident	0.15	0.36
Lapse of time since the offence	0.03	0.16
Offender suffering from a serious medical conditions requiring treatment	0.03	0.16
Offender suffering from a mental disorder or mental disability	0.03	0.18
No previous relevant or recent convictions	0.25	0.44
Sole or primary carer for dependant relatives	0.03	0.18
Genuine remorse	0.32	0.47
Single blow	0.17	0.38

[a]The mean and standard deviation were calculated using the reduced sample capturing cases sentenced to custody.

[b]Census variables used in the analysis were demeaned. Here, their mean and standard deviation are presented in their original scale.

was the only release that provided information regarding the location of the court where the sentence was passed. Cases sentenced before June have not been used since June 2011 is the month when the new assault guidelines came into force. These new guidelines introduced a more diverse range of case characteristics for sentencers to consider and were accompanied with the introduction of a new, more detailed CCSS questionnaire.[5]

Exploiting the full detail available in the CCSS, the present study includes six variables defining the specific offence of assault, 4 on the harm caused to the victim, 14 on the culpability of the offender, 28 capturing aggravating and mitigating circumstances and one identifying an early guilty plea. All of them are coded as binary variables.

Courtroom characteristics were collected from three official sources. The facilities available in the court were obtained from a gov.uk website[6] offering information on all Courts and Tribunals. These include the availability of parking, wifi or a canteen. Other variables captured relate to the functioning of the court. Specifically, the availability of interview rooms, video conference facilities, the opening hours, and whether it is a combined court (i.e. a magistrates court operates in the same building).

[5]Available at: https://www.sentencingcouncil.org.uk/wp-content/uploads/Assault_and_Public_Order_-_April_2014.pdf [Last Accessed 23 May 2017].

[6]https://courttribunalfinder.service.gov.uk/courts/ [Last Accessed 23 May 2017].

A second source used to understand the workload undertaken across courts stems from a series of statistical reports, also available at gov.uk,[7] which describe the annual volume of cases processed by each court.[8] This was complemented with a timely report from the National Audit Office evaluating the 'Administration of the Crown Court'[9] published in 2009. The report includes information on the workload of different courts and speed of case-processing. These include the percentage of appealed cases commenced within 14 weeks[10] (a proxy for the speed of case processing), and the number of days Crown Court rooms were used as a percentage of the total number of working days[11] (a proxy of the pressure on available resources).

Lastly, the socio-economic characteristics of the area surrounding courts have been obtained from the 2011 UK census. The wealth of information available in the Census is immense—it is composed of more than 70 variables. A data selection approach was undertaken to compile a set of variables which would replicate the socio-economic factors used in similar studies and, in this way, explore the theories laid out in the previous section. In addition, categories that were considered too narrow were grouped into broader groups. For example the ethnic groups 'black African', 'Caribbean' and 'black British' were grouped as a single category denominated black. Under such procedures the following variables were selected: residents living in social rented housing, residents with no qualification, ethnically Asian, ethnically black and of Muslim religion.[12]

All of these census variables express the number of people with the characteristics indicated living in a designated area as a percentage of the total people living in that same area. Following Pope *et al.* (2002) and Rodriguez (2007), we used a level of aggregation representing the social environment immediately surrounding the area of interest. Specifically, different areas were established for each of the 77 Crown Court locations by drawing a circle of 500 m radius around their address. Such level of aggregation lies between the census output and the lower layer super output areas,[13] and seeks to represent the socio-economic composition of the neighbourhood where the court is located.

This area level choice is underpinned by two pragmatic reasons. First, focusing on broader areas, such as the counties used in most US studies, would be problematic in England and Wales given that the division of court jurisdictional boundaries is unclear. Expanding the area levels (e.g. using criminal justice areas, or regions) might result in attributing zones to the wrong court. This would be especially problematic in highly

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[7]https://www.gov.uk/government/publications/data-pack-tables-for-crime-tender-2015 [Last Accessed 20 July 2016].

[8]This variable was divided by 1,000 when used in the models presented in the *Analysis* section to ensure that explanatory variables have a similar range.

[9]https://www.nao.org.uk/report/administration-of-the-crown-court/ [Last Accessed 23 May 2017].

[10]This measure was only available at the regional level. Specifically, the report divided England and Wales into 25 regional areas, within which the 74 Crown Court locations are subsumed.

[11]Complete data for this measure was only available for 39 of the Crown Court locations, the missing 35 were mean imputed.

[12]Other variables such as the percentage of ethnically white residents, born in the United Kingdom, or unemployed were selected initially but ultimately removed from the analysis since the variance inflation factors associated with their regression coefficients were larger than five, pointing at a potential risk of multicollinearity (Stine 1995).

[13]To account for the presence of more than one output area within the designated court surroundings, census statistics were weighted according to the size of the output area captured by the 500 m circle around the court. For example if a circle spanned three census areas (A, B and C) but 50% of the designed area covered A and 25% covered B and C, the census statistics would be weighted correspondingly.

populated regions, where multiple Crown Courts are located within the same city, such as Manchester or London.

Second, while some judges might be familiar with the broader localities the courts serve, and thus associate the social environment with the entirety of this area, this would not necessarily be the case for all judges. This is especially likely in the case of Circuit judges, who make up 89 per cent of the judges in the England and Wales Crown Court (Ministry of Justice 2012). Circuit judges do not have an assigned workplace, instead moving around courts within the same region. As all judges must travel to the area where the court is located in order to get to work, using a narrow area level offers a better representation of the social environment that all judges would associate with the court.

The result of compiling these sources is a final dataset composed of 71 variables, 2 that will be used as the response variables of the models presented in the next section, 53 case characteristics, 11 courtroom characteristics and 5 area level characteristics. The total sample size is composed of 5,228 sentences and 74 court locations. For the analyses focusing on the modelling of the duration of incarceration, non-custodial cases were dropped, reducing the sample to 2,455 sentences and 73 courts.[14]

Analysis

The analysis focuses on the statistical modelling of the two most relevant sentence outcomes: the probability of incarceration, and if incarcerated, the custodial sentence length.[15] These two outcomes are related (Wheeler *et al.* 1982), but it is imperative to study them both for reasons of robustness (Ulmer and Johnson 2004; Johnson 2006; Ulmer *et al.* 2011), as there are important differences in their composition. The probability of incarceration uses all cases captured in our sample, whereas the modelling of sentence length generates a problem of selection bias since it does not include non-custodial sentences. On the other hand, 'whether custody or not' is coded as a simple binary variable, whereas sentence length is a continuous[16] and therefore much a more informative measure.

To study the variability in the use of these two sentence outcomes between courts two-level multilevel models are employed, using sentences as level one and courts as level two units. These models allow for exploring the effect of court level variables and individual case characteristics simultaneously. Additionally, they can also be used to test whether the unexplained variability in the model stems from between court differences (represented here by $var(\mu)$, the variance of the random intercepts term).

The probability of custody is specified using a logit model, whereas the log of sentence length relies on a linear specification. To illustrate problems of specification bias associated with the inadequate control of the characteristics two nested models were

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[14]The descriptive statistics reported in Table 1 refer to the larger sample containing both custodial and non-custodial sentence outcomes.

[15]Potential disparities between cases resulting in non-custodial sentences were not taken into account as their severity could not be adequately ranked (e.g. the conditions imposed in community sentences were unknown).

[16]Custodial sentence length is known for being positively skewed, which could affect the estimation of the model's measures of uncertainty. To normalise the response variable the natural logarithm transformation was used (Bushway and Piehl 2001; Johnson 2005; Pina-Sánchez and Linacre 2013; 2014).

estimated for each of those outcomes. First, 'limited models' including all the court and area characteristics but only a few case characteristics were analysed. These models seek to replicate the approach taken by American studies where only a limited number of case characteristics are examined. This involved including the number of previous convictions and whether the offender pled guilty at first opportunity in the set of explanatory variables. Other commonly used explanatory variables in American studies such as the level of seriousness or the type of trial are unnecessary given the higher homogeneity of the sample used here. Type of trial indicates whether a bench or jury was involved, but jury trials are generally used in the England and Wales Crown Court. Level of seriousness, as operationalised in American studies, indicates the broad offence type, which becomes redundant since our study is composed only of assault cases.

These models are expanded by adding the full list of case characteristics in a second stage. The addition of case characteristics is a crucial step because it allows for the control of factors legitimately making sentencing more or less severe. This will put to the test effects detected in the 'limited models', and establish whether there are genuine court level biases influencing sentencing decisions as depicted in *Contextual factors affecting sentencing* section, or just spurious relationships resulting from differences in the composition of cases processed across courts.

Results for the two nested logit models on the probability of receiving a custodial sentence are presented in Table 2 (coefficients in bold are statistically significant at the 0.05 significance level). Only one of the court and area characteristics, percentage of appealed cases, was found to have a statistically significant effect. This effect is positive, pointing at a higher possibility of being sentenced to custody in those courts that process appeal cases more quickly. This positive effect was found both on the 'limited' and the 'full model', suggesting that, *prima facie*, controlling for case characteristics was unnecessary. However, it should be noted that the random intercepts stop being significant once the whole set of case characteristics was introduced. Two important interpretations can be derived from this result. First, it points at the absence of unwarranted between court disparities, contrary to what was found by Pina-Sánchez (2015) using a similar sample but failing to account for case characteristics as thoroughly as it is done here. Second, as hypothesised in the introduction, it seems that the bulk of between court disparities stems from differences in the types of cases processed in each court. This is corroborated by contrasting the predictive power of the 'limited' and the 'full model' after removing area and court characteristics, 60.8 and 80.7 per cent, respectively. That is, after appropriately controlling for the characteristics of the case, the capacity to estimate whether offenders are sentenced to custody goes from what could be roughly obtained by flipping a coin to a remarkably high degree of accuracy.

Seventeen of the 53 case characteristics included were not significant. However, all of them point in the expected direction. All 'higher harm or culpability' factors and other aggravating factors significantly increase the probability of being sentenced to custody, whereas the opposite is true when looking at 'lower harm or culpability' factors and other mitigating factors. For instance custody was more likely if a serious injury was involved whereas it was less likely if there was a great degree of provocation. Regarding effect size it is worth noting the great heterogeneity detected amongst offences that are broadly classified as assault. For example using the model's reference case we can estimate the probability of being sentenced to custody for a relatively minor case of

TABLE 2   *Random effects models on the logit of custody versus other disposal type*[a]

	Limited model		Full model	
	Estimate	Standard error	Estimate	Standard error
Fixed effects				
Intercept	−0.32	0.22	−1.29	0.28
Court characteristics				
Volume of cases processed	−0.02	0.05	−0.02	0.06
% of appealed cases	**0.01**	0.01	**0.02**	0.01
% of days court rooms were used	0.02	0.01	0.01	0.01
Opening time of the court	0.1	0.11	0.21	0.13
Interview rooms available	0.29	0.15	0.31	0.18
Parking available	0.18	0.12	0.27	0.15
Canteen or vending machine available	−0.1	0.17	−0.11	0.21
Video presentation of evidence available	0.04	0.16	0.12	0.2
Witness room available	−0.16	0.13	−0.17	0.16
Wifi available	−0.17	0.11	−0.08	0.14
Combined court	−0.06	0.09	0.02	0.11
Area characteristics				
% Asian	−0.86	0.6	−0.17	0.73
% black	0.91	1.08	1.47	1.36
% Muslim	1.77	0.98	1.04	1.19
% social rented	−0.09	0.38	−0.36	0.46
% no qualification	0.47	0.67	0.76	0.81
Case characteristics				
Commonly used case characteristics				
Plead guilty at first opportunity	**−0.16**	0.06	0.03	0.08
Previous convictions: 1–3	**1.38**	0.11	**0.78**	0.14
Previous convictions: 4–9	**1.74**	0.14	**1.09**	0.18
Specific type of offence				
Grievous bodily harm			**1.39**	0.13
GBH with intent			**5.61**	0.44
Common assault			−0.19	0.16
Violence against police			0.59	0.43
Violent disorder			**2.02**	0.28
Actual bodily harm			0.12	0.1
Harm and culpability factors				
Deliberate cause of harm			0.34	0.23
Intention to commit more harm			**1.5**	0.34
Leading role in gang			0.27	0.19
Motivated by victim's age/gender			0.25	0.49
Premeditation			**0.64**	0.17
Motivated by victim's race/religion			0.04	0.31
Motivated by victim's sexual orientation			−1.04	0.8
Deliberate targeting of vulnerable victim			**0.65**	0.19
Use of weapon			**0.76**	0.09
Serious injury			**0.99**	0.11
Sustained assault on the same victim			**0.93**	0.11
Victim is particularly vulnerable			**0.47**	0.14
Lack of premeditation			**−0.57**	0.1
Offender's mental disorder			−0.33	0.31
Great degree of provocation			**−0.7**	0.17
Excessive self-defence			**−0.37**	0.19
Subordinate role in gang			−0.31	0.2
No serious injury			−0.07	0.1
Additional aggravating and mitigating factors				
Abuse of a position of trust or power			0.19	0.33
Offence against public sector worker			**0.72**	0.17
Offence committed on bail			**1.33**	0.31

TABLE 2   *Continued*

	Limited model		Full model	
	Estimate	Standard error	Estimate	Standard error
Attempt to conceal evidence			−0.33	0.73
Victim forced to leave their home			0.42	0.37
Evidence of community impact			**1.11**	0.51
Failure to respond to warnings			**0.7**	0.35
Failure to comply with court orders			**1.04**	0.2
Gratuitous degradation of victim			0.1	0.35
Location of the offence			**0.28**	0.11
Offence committed whilst on licence			**1.47**	0.42
Ongoing effect upon the victim			**0.58**	0.14
Presence of others including relatives			**0.27**	0.11
Previous violence to the same victim			**0.61**	0.17
Timing of the offence			**0.35**	0.15
Under the influence of alcohol/drugs			**0.2**	0.1
Steps taken to address addiction			**−1.44**	0.18
Offender's age or lack of maturity			**−0.42**	0.15
Offender's exemplary conduct			**−0.87**	0.14
Isolated incident			**−0.9**	0.14
Lapse of time since the offence			**−0.96**	0.29
Offender's serious medical condition			**−1.12**	0.31
Offender's mental disorder			**−0.85**	0.26
No recent/relevant previous convictions			**−0.78**	0.11
Primary carer for dependant relatives			**−1.4**	0.25
Genuine remorse			**−0.33**	0.1
Single blow			−0.11	0.12
Random effects				
var (μ)	**0.041**	0.017	0.045	0.24
Sample size				
Level 1 cases	5,228		5,228	
Level 2 cases	74		74	

[a]Coefficients in bold are statistically significant at the 0.05 level.

affray is 0.28, however that probability is 0.98 when the case is a grievous bodily harm with intent.

Returning to the main research question, these results challenge the influence of any of the community effects theorised in the *Contextual factors affecting sentencing* section. However, it could be argued that the decision to incarcerate (or not) is a rather blunt measure, one that does not provide a nuanced view on the relative severity of the sentence. This is further explored in , presenting results for the models on the log of sentence length.

As before, the majority of case characteristics are statistically significant, and the regression coefficients of those variables point in the expected direction. The biggest difference stems from new area effects previously undetected. In particular, the 'limited model' estimates sentencing to be more lenient in those courts located in neighbourhoods with a higher percentage of Asian and unqualified residents, and harsher in courts with a higher presence of Muslim residents.

At first sight this last effect could be interpreted as evidence supporting the threat theory. That is judges working from areas where they feel more threatened—in this case areas where Muslim residents are more visible—pass more severe sentences. While

TABLE 3   *Random effects models on the log of sentence lengt*[a]

	Limited model		Full model	
	Estimate	Standard error	Estimate	Standard error
Fixed effects				
Intercept	**6.34**	0.11	**5.51**	0.07
Court characteristics				
Volume of cases processed	−0.02	0.02	**−0.04**	0.01
% of appealed cases	<0.01	<0.01	<0.01	<0.01
% of days court rooms were used	<0.01	<0.01	<0.01	<0.01
Opening time of the court	−0.04	0.05	0.02	0.03
Interview rooms available	−0.09	0.08	0.04	0.04
Parking available	−0.03	0.06	−0.02	0.03
Canteen or vending machine available	**0.17**	0.09	**0.13**	0.05
Video presentation of evidence available	−0.09	0.08	<0.01	0.05
Witness room available	−0.04	0.06	−0.07	0.04
Wifi available	**−0.16**	0.05	**−0.14**	0.03
Combined court	−0.02	0.04	0.04	0.02
Area characteristics				
% Asian	**−0.74**	0.27	−0.02	0.16
% black	0.09	0.51	0.49	0.3
% Muslim	**1.26**	0.43	0.12	0.25
% social rented	0.33	0.18	−0.13	0.1
% no qualification	**−1.18**	0.31	**−0.58**	0.18
Commonly used case characteristics				
Plead guilty at first opportunity	**−0.18**	0.04	**−0.07**	0.02
Previous convictions: 1–3	−0.04	0.05	0.04	0.03
Previous convictions: 4–9	0.02	0.06	**0.14**	0.04
Specific type of offence				
Grievous bodily harm			**0.69**	0.04
GBH with intent			**1.8**	0.04
Common assault			**−1.11**	0.06
Violence against police			**−0.39**	0.13
Violent disorder			**0.68**	0.06
Actual bodily harm			**0.11**	0.03
Harm and culpability factors				
Deliberate cause of harm			**0.12**	0.04
Intention to commit more harm			**0.2**	0.05
Leading role in gang			0.04	0.04
Motivated by victim's age/gender			0.1	0.11
Premeditation			**0.14**	0.03
Motivated by victim's race/religion			**0.23**	0.09
Motivated by victim's sexual orientation			0.11	0.22
Deliberate targeting of vulnerable victim			0.04	0.04
Use of weapon			**0.14**	0.02
Serious injury			**0.18**	0.03
Sustained assault on the same victim			**0.11**	0.03
Victim is particularly vulnerable			**0.18**	0.03
Lack of premeditation			**−0.13**	0.03
Offender's mental disorder			0.03	0.1
Great degree of provocation			**−0.15**	0.05
Excessive self-defence			**−0.19**	0.06
Subordinate role in gang			**−0.13**	0.06
No serious injury			**−0.15**	0.03
Additional aggravating and mitigating factors				
Abuse of a position of trust or power			<0.01	0.07
Offence against public sector worker			0.06	0.04
Offence committed on bail			0.01	0.05
Attempt to conceal evidence			**0.26**	0.1

TABLE 3   *Continued*

	Limited model		Full model	
	Estimate	Standard error	Estimate	Standard error
Victim forced to leave their home			0.03	0.08
Evidence of community impact			0.22	0.1
Failure to respond to warnings			−0.05	0.07
Failure to comply with court orders			−0.02	0.04
Gratuitous degradation of victim			0.07	0.06
Location of the offence			<0.01	0.03
Offence committed whilst on licence			0.07	0.06
Ongoing effect upon the victim			**0.07**	0.03
Presence of others including relatives			0.02	0.03
Previous violence to the same victim			0.06	0.04
Timing of the offence			−0.01	0.04
Under the influence of alcohol/drugs			−0.01	0.02
Steps taken to address addiction			<0.01	0.06
Offender's age or lack of maturity			**−0.13**	0.04
Offender's exemplary conduct			−0.06	0.05
Isolated incident			0.01	0.05
Lapse of time since the offence			−0.18	0.1
Offender's serious medical condition			0.07	0.11
Offender's mental disorder			−0.01	0.08
No recent/relevant previous convictions			**−0.09**	0.03
Primary carer for dependant relatives			<0.01	0.09
Genuine remorse			**−0.07**	0.03
Single blow			**−0.13**	0.03
Random effects				
var (μ)	**0.822**	0.023	**0.265**	0.008
Sample size				
Level 1 cases	2,455		2,455	
Level 2 cases	73		73	

[a]Coefficients in bold are statistically significant at the 0.05 level.

no other study using the same research design has included a variable capturing the percentage of Muslim residents in the area—possibly because the Muslim population in the United States is quite small—similar findings have been noted in the literature that corroborate the argument of fear towards different minority groups increasing overall severity in sentencing (Myers and Talarico 1987; Britt 2000). However, it would be unwise to jump to conclusions since following the inclusion of case characteristics in the 'full Model' area effects become non-significant, with the exception of the percentage of non-qualified residents, which nonetheless sees its effect size halved.

New effects can also be detected amongst the court characteristics included. Unlike in the previous models the volume of cases processed, and the availability of wifi and a canteen in the court are significant. The negative effect of volume corroborates results from the literature pointing at offenders processed in courts with larger caseloads receiving more lenient treatment (Ulmer and Johnson 2004; Ulmer and Bradley 2006; Kramer and Ulmer 2009). On the other hand, the harsher sentencing associated with courts where canteens are available, and the more lenient sentencing where wifi is available are findings not yet discussed in the literature.

In addition to these court and area effects, evidence of unwarranted between court disparities can also be obtained from the statistical significance of the random intercept

term in the 'full model'. Having said that, it is important to note how the size of this coefficient is reduced to less than a third of its size in the 'limited model', pointing once again at the relevance of controlling adequately for the different case characteristics as a prerequisite to properly identify unwarranted disparities. This idea is further supported by a comparison of the models' goodness of fit, obtained using the R^2 from similar models estimated using ordinary least squares, and showing an increase from 0.03 in the 'limited model' to 0.68 in the 'full model'.

Conclusion

This study investigated the influence of area and workplace characteristics on sentences of assault passed in the England and Wales Crown Court. The research design replicated the framework established in the United States over the last decade, based on the regression of sentence outcomes on both case and contextual characteristics using multilevel modelling techniques. The use of this approach, together with the richness of the contextual characteristics coded, sets this study apart from any previous empirical work on between court disparities in the United Kingdom. However, it is the inclusion of the largest and most detailed set of variables defining the characteristics of the cases processed that distinguishes it from any other study on the topic worldwide; offering a unique capability to differentiate between disparities resulting from legitimate case differences across courts and unwarranted disparities in sentencing.

Only one variable defining the workload or the facilities available across court had a significant—and positive—effect on the probability of being sentenced to custody, the speed at which appeal cases were heard. This is potentially related to previous research that examined workload (Dixon 1995), suggesting that judges sentence more leniently in order to expedite case processing when they are faced with large workloads. It may be that, by contrast, courts that are particularly efficient do not face these pressures and thus use custody more freely.

When modelling the duration of custodial sentences, three effects related to the organisation of the court were detected. The availability of a wifi network and the size of the court caseload were associated with more lenient sentencing and the presence of canteens was associated with harsher sentencing. The finding relating to court caseload is consistent with explanations by Eisenstein *et al.* (1988) and Ulmer (1997), who argue that decision-makers in large courts may be desensitised to criminal behaviour. These court actors may view cases as 'average', when the same cases would be considered novel and shocking in smaller courts, ultimately leading decisions makers in large courts to impose more lenient sentences. It is unclear why the presence of wifi and canteens was associated with sentencing severity given that these variables have not been discussed in previous studies. These findings do, nevertheless, broadly support assertions by Eisenstein and Jacob (1977), who point to the importance of the physical structure and facilities of the courthouse itself in explaining court decision-making.

Importantly, only one socio-economic characteristic was found to be significant across both models. The percentage of unqualified residents was associated with shorter custodial sentences, although the size of this effect was reduced by more than half when the case characteristics were taken into account. As such, while this aspect of the social context may have some influence over sentencing, its impact is neutralised

substantially when legal factors are considered. Broadly speaking, these results support previous findings that point to the importance of organisational factors on sentencing and challenge findings that suggest the socio-economic characteristics of the area surrounding the court have a major impact on sentencing decisions.

The vast majority of the literature investigates sentencing in the United States. Consequently, comparisons with the United Kingdom must be made with caution. For instance it is likely that between court disparities at the Federal level in the United States are wider than in England and Wales since in the former sentencing guidelines only act as recommendations, while in the latter they are statutory binding. In addition, the impact of contextual effects on sentencing has been hypothesised to be greater in the United States due to judicial selection methods. Specifically, judges in the United States are elected and thus more susceptible to be influenced by the context than UK judges, who are appointed.

Despite these differences, it is presumable that the disparities identified in the United States by the empirical literature would be less substantial if the characteristics of the cases studied were better controlled than has been the case thus far. For example, two of the most acclaimed studies on the topic, Fearn (2005) and Johnson (2006), only accounted for the seriousness of the offence, criminal records of the offender, or the guilty plea, leaving aside important aggravating and mitigating factors. Furthermore, most of the quantitative studies examining between court disparities in sentencing use samples composed of very heterogeneous groups of offences. For example, Fearn (2005) and Johnson (2006) included offences of violence against the person, property offences, sex offences and others. The use of such an array of offences only makes the need to control for unobserved heterogeneity in the statistical models even more pressing.

The problem of unobserved heterogeneity needs to be placed at the core of the methodological challenges to be addressed by future research. It is essential to be able to isolate the illegitimate sources of variability in sentencing in order to properly study the reasons behind unwarranted disparities. Unless this is achieved it will be very likely that any effects reported will be the result of spurious correlations due to the varying seriousness of cases processed in different courts—as demonstrated here. However, this problem has not yet been adequately acknowledged.

None of the US studies identify the lack of adequate controls for case characteristics as a methodological problem.[17] Johnson (2006: 292) concludes: '*More direct measures of courtroom community norms and workgroup expectations are also needed to better tap into the elusive concept of local courtroom culture*'. While the results of this study support the above argument given the significance of caseload, the presence of wifi and the availability of a canteen, we argue that it is just as important for future studies to prioritise the inclusion of additional and improved controls of relevant case characteristics. Investigating organisational factors in further detail might shed some important light on the reasons behind the observed differences in sentencing across courts; strengthening the modelling to better account for the case characteristics explaining legitimate differences will tell us whether the alleged between court unwarranted disparities are truly present.

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[17]'*At the individual case level, the federal sentencing data offer rich and detailed information on offense characteristics, offender characteristics, and case-processing factors*'. (Johnson *et al*. 2008: 753).

It is worth reflecting on the implications that this research could have had if the level of detail provided in the CCSS was not available, and as a result findings such as the sentencing severity increasing in neighbourhoods with a high proportion of Muslim residents were reported. There is a distinct possibility that this information could go viral. Were this to occur, the public outcry may be extremely damaging for both the level of trust in the criminal justice system and for the sense of alienation already experienced by marginalised groups.

Importantly, it is unclear whether the same conclusions could be made if the study had investigated individual characteristics of offenders and judges. It is still possible that certain judges sentence using stereotypes and that certain offenders are more prone to be subjected to them. Since courts are composed of varied judges, the presence of biased judges could pass unnoticed if they were uniformly distributed across the country. In addition, although these results cast doubt on the influence of socio-economic contextual factors at the sentencing stage, they do not suggest that they had no influence in the prior construction of the case. It is possible, for instance, that contextual factors influenced prior police or prosecutorial practices, ultimately leading to their (potentially unfounded) association with harsher case characteristics. Future research is thus necessary to fully understand the extent to which contextual factors may influence cases in earlier stages of the process. Further, it is important to note that the analysis is based on a sample of offences from the Crown Court. It remains to be seen whether similar results would be observed in the context of the magistrates' courts.

Finally, it is also important to underline that while the research question driving this article concerned the exploration of potential contextual effects on sentencing, the findings obtained have broader implications. The limited evidence obtained on the court and area effect on sentencing, together with the non-significance of the random intercept term in the model on the probability of custody accounting for case characteristics, point at a high degree of between court consistency. Furthermore, the high level of accuracy at predicting cases of incarceration (80.8 per cent) and custodial sentence length ($R^2 = 0.68$), point at a remarkable level of overall—not just between court—consistency. That is when offender and offence characteristics are properly accounted for, sentencing looks more like a systematic and objective process than what has been previously acknowledged in the literature.

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