**Title:**

The Landscape of UK Child Protection Research 2010 to 2014: a mapping review of substantive topics, maltreatment types and research designs.

**Abstract:**

Child protection continues to be a pressing social problem. Robust and relevant research is essential in order to ensure that the scale and nature of child maltreatment is understood [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]and preventative and protective measures are effective. This paper reports selected results from a mapping review of research conducted in the UK and published between January 2010 and December 2014. The purpose of the review was twofold: to develop a typology of child protection research; and to use this typology to describe the features and patterns of empirical research undertaken recently in the UK in order to inform a future research agenda. The paper reports the maltreatment types, substantive topics and research designs used within empirical research published in academic journals. It identifies a number of challenges for the field including the need for conceptual clarity regarding types of abuse, greater methodological diversity and a shift of focus from response to prevention of child maltreatment. The importance of a national strategic agenda is also emphasised.

**Key practitioner messages:**

* A substantial proportion of empirical research focuses on child maltreatment generally and less is known about some specific types of maltreatment such as exposure to domestic abuse and child trafficking.
* More robust evidence is particularly needed concerning the effectiveness of interventions and choice of preventative approaches [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN].
* Research-minded practitioners have an important contribution to make to the development of a practice-relevant research agenda.

**Key words**

Research, child abuse, neglect, child maltreatment, child protection

**Background**

The complexity of child protection has grown significantly in recent decades creating challenges for the development of social policies, professional practices and a research agenda. Awareness of the scale of child maltreatment has increased and a broader range of abusive practices have come to public attention, together with the pressing need to address issues of historic abuse. Harmful risks to children and young people that have received attention relatively recently include sexual exploitation, forced marriage, female genital mutilation, online abuse, bullying and trafficking. There has been a steady accumulation of robust scientific findings on aspects of risk and resilience (including the long-term effects of maltreatment), making the establishment of a coherent evidence base a meaningful possibility. At the same time, the shift within the UK towards devolved administrations increases the opportunities and momentum for divergent policy responses. Much can be learned from the review, synthesis and meta-analysis of child protection research evidence [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]from across the UK and beyond. In addition, attention must be given to the effective use of limited research resources within national jurisdictions.

In 2014, the National Society for the Prevention of Cruelty to Children (NSPCC) commissioned the University of Edinburgh/NSPCC Child Protection Research Centre (insert author organisation) to undertake a mapping review of child protection research designed to address some of these issues. The aim of the research was to describe the ‘landscape’ of child protection research activity in the UK in the previous five years in order to inform research priorities. The specific research questions from the study addressed in this paper are:

1) How can child protection research be classified?

2) What aspects of child protection were focused upon in the child protection research published between January 2010 and December 2014?

3) What research designs were employed in the child protection research published between January 2010 and December 2014?

The mapping review was concerned with child protection research published in both academic literature and grey literature. In this paper, we focus on research published in peer-reviewed journals [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN].

There have been previous attempts to capture the scope of research evidence relevant to child protection specifically or social work research more generally in the UK within certain parameters. For example, Shaw and Norton (2007) developed a framework for appraising both the nature and the quality of social work research that had been undertaken in universities within the United Kingdom. From an analysis of 40 articles published within the *British Journal of Social Work* they developed a typology of social work research across two dimensions, one focusing on what (or who) was the focus (e.g. children, adult offenders) and the second on the research problem addressed (e.g. how to describe the system; how to understand issues of ethnicity). They concluded that the classification of research by substantive themes was challenging and they called on colleagues from the social work community to build on their typology (Shaw and Norton, 2007).

In 2007, Tarara and Daniel published an Audit of Scottish Child Care and Protection Research, which reviewed research carried out during the period 1997-2007 (Tarara and Daniel, 2007). They defined ‘research’ as qualitative or quantitative primary research, audit activities, mapping exercises and large- and small-scale evaluations. This broad approach resulted in the identification of 342 publications over the 10 year period. Tarara and Daniel’s aim was to create an accessible database of relevant research and to identify the gaps in evidence that should be addressed. In contrast to Shaw and Norton (2007), their review of the literature made systematic use of research databases, included a survey of researchers in Scotland, and encompassed research across disciplines (not being limited to social work). They did not aim to assess the quality of the research. They concluded that researchers tend to underutilise statistical data and often fail to link research to relevant legislation [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN], and stated that:

‘There is a need for a mechanism to better coordinate child protection-related research within and across disciplines and professions, as well as for the collation and dissemination of information about relevant research’ (Tarara and Daniel, 2007, p.8)

There are some examples, outwith the UK, of attempts to develop a national overview of knowledge production in relation to child protection. In Ireland, Buckley *et al.* (2010) were commissioned by the Children Acts Advisory Board to conduct an audit of Irish child protection literature between 1990 and 2009 in order to identify and evaluate the evidence base underpinning child protection practice in the country. They found that over half of identified research focused on current policy and practice in child protection services, and the attention given by researchers to specific types of maltreatment was not commensurate with their prevalence [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]. A similar study conducted in Australia came to the conclusion that evidence was under-developed across all aspects of child protection and highlighted issues regarding methodological weaknesses and duplication of effort (Higgins, et al 2005). More recently, in the USA, the Institute of Medicine (IOM) was commissioned by the US Department of Health and Human Services to undertake a consensus study of research on child abuse and neglect and to recommend research priorities for the next decade (see http://www.iom.edu/Activities/Children/ChildMaltreatment.aspx). A report produced by the expert committee (Peterson *et al*., 2013), recommended a framework for future child abuse and neglect research, and called for a comprehensive, multidisciplinary approach to such research.

As far as we are aware, the Landscape Project presented here is the first to create a dataset enabling detailed analysis of the child protection research literature arising from a comprehensive mapping of UK-wide empirical studies [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]. The focus of this work, thus far, has been on what research has been undertaken and the implications of this for a future research agenda rather than any attempt being made to analyse the current state of knowledge in the UK pertaining to specific aspects of child protection.

**Methodology**

To answer the study questions we undertook a comprehensive review of the literature following the guidance of the Evidence for Policy and Practice Information and Co-ordinating Centre (2012) and the methodology described by Grant and Booth (2009) as a ‘mapping review/systematic map’. Mapping reviews enable the contextualisation of in-depth systematic literature reviews [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN] within broader literature and identification of gaps in the evidence base. They can be a valuable tool for policymakers, practitioners and researchers providing an explicit and transparent means of identifying narrower policy and practice-relevant review questions. Systematic maps may also characterise studies in other ways, such as according to theoretical perspective, population group or the setting within which studies were undertaken. In addition to describing the research field, a systematic map can provide the basis for an informed decision about whether to undertake in-depth review and synthesis on all or a subset of the studies identified (Grant and Booth, 2009). The search and screening procedures used are described fully in the online appendix.

**Findings**

***Results of search and codification of academic papers 2010 to 2014***

Figure 1 reports the screening process for the academic literature using the reporting convention Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher *et al*., 2009). Across the 60-month period, the primary reason journal articles were excluded was that they lacked either a UK author or UK data or both (n=4341). The next most common reason for exclusion was that they did not report on empirical research - but rather were theoretical or opinion pieces or a note of conference proceedings or a research abstract only (n=1489). The remaining exclusions (n=1162) were due to study topics being outwith the scope of the review (not related to child protection). This resulted in 467 academic articles reporting UK-based empirical research published between January 2010 and December 2014 which were included in the final database [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN, i.e. ‘467 academic articles... were included in the final database’].

INSERT FIGURE 1

The mapping review resulted in a codification system for research literature on child protection comprising seven maltreatment types, 11 substantive topics and nine research designs. Maltreatment types were derived from categories used by the NSPCC (2015). The typology of substantive topics was developed initially through a thematic analysis of 30 of the most recent child protection research papers. This was then tested and further developed through an iterative process whereby existing categories were refined and new categories added as research outputs were reviewed. Finally, research design was categorised using Petticrew and Roberts (2003) typology of research design. The typologies developed are described next, along with the frequency of occurrence within peer-reviewed papers.

***Maltreatment types considered by the research***

The typology of forms of maltreatment and frequency with which different maltreatment types were considered in the academic literature is presented in figure 2.

INSERT FIGURE 2

Thirty-nine per cent of academic papers did not specify a particular type of abuse but instead focused on the more general subject of child maltreatment.When a particular maltreatment type was identified there was often more than one form of abuse that was the subject of the research.

Sexual abuse was the most frequently occurring maltreatment type to be considered in isolation [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN] from other forms of abuse with a third of the academic literature considering this subject alone. This compares with 19 per cent of articles focusing solely on physical abuse and 13 per cent of articles on neglect. This is the case despite neglect being the most commonly reported form of child maltreatment (May-Chahal and Cawson, 2005).

***Substantive topics in child protection research***

Eleven categories of substantive topic were developed. These are described in Table 1 and the frequency of topics is reported.

INSERT TABLE 1

The nature of consequences or outcomes in adulthood was the most frequently researched substantive topic in the academic literature [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN] (21%) followed by system or practice responses (14%), attitudes and beliefs (11%) and nature of consequences or outcomes in childhood (11%).

***Research designs used***

The designs of studies were categorised according to Petticrew and Roberts’ (2003) typology which includes: qualitative research, survey, case-control study, cohort study, randomised controlled study, quasi experimental study, non-experimental evaluation, and systematic review. A further category was added to this typology to capture cross-sectional studies other than those using a survey methodology.

INSERT FIGURE 3

Figure 3 presents the number of publications within the academic literature datasets using the nine different research designs that were coded. The most frequently employed research designs used were those categorised as qualitative [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN], accounting for a third of academic publications. Cross-sectional surveys were the next most frequently used design (13.7%), followed by non-experimental evaluations (12%). Cohort studies accounted for 10.9 per cent of studies drawing on data from, for example, the 1970 British Cohort Studies (University of London. Institute of Education. Centre for Longitudinal Studies, 2014)., Avon Longitudinal Study of Parents and Children (University of Bristol. Department of Social Medicine. Avon Longitudinal Study of Parents and Children, 2009) and Growing Up in Scotland (ScotCen Social Research, 2013). The number of randomised controlled trials reported was low, accounting for 0.9 per cent of the included literature.

**Discussion**

As far as we are aware, this is the first study to not only systematically search child protection academic research relating to the UK as a whole but also to classify and map this activity. While there are a number of available databases of research relevant to child protection such as the Social Care Institute for Excellence’s (SCIE) Social Care Online (<http://www.scie-socialcareonline.org.uk>), Research in Practice (https://www.rip.org.uk), WithScotland (http://withscotland.org) and the University of Huddersfield’s child protection database (http://www.hud.ac.uk/hhs/research/ukrcpr/), these have some limitations as sources of comprehensive information about child protection research across the UK. For example, Social Care Online includes only some of the publications relating to criminal justice, yet criminal justice research is important in the study of sexual abuse. The process through which these databases are populated is also more systematic in some cases than others, usually related to the resources available. These databases act primarily as repositories for the purposes of research dissemination and knowledge exchange and in doing so offer an important service to users of research and other resources. We suggest that there is additional value in producing analyses and maps of research activity in the way this project has done in order to inform a national child protection research agenda [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN, i.e. ‘ There is additional value in producing analyses and maps of research activity... to inform a national child protection research agenda’].

The search process used for this study produced around three times as many academic publications that were non-empirical papers than reports of empirical research. The comparatively low proportion of empirical studies is a concern. Developing a knowledge base requires evidence synthesis, theoretical development and methodologically-diverse empirical research. Our definition of empirical studies incorporated systematic reviews and meta-syntheses, collection and analysis of primary data, secondary analysis of data and theory testing, and inductive theory development within empirical studies. The large number of non-empirical papers included non-systematic literature reviews and think pieces as well as purely theoretical papers. While these papers have a contribution to make to research debates, the fact that they outnumbered empirical papers three to one must be addressed in order to take the knowledge-building agenda forward.

Child maltreatment and the various manifestations of this, such as physical abuse or neglect, are conceptualised in various ways in research outputs making codification challenging [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN, i.e. ‘Child maltreatment... [is] conceptualised in various ways in research outputs making codification challenging’]. In addition, in some outputs, there is no explicit definition of abuse or neglect given and instead the nature of the abuse, which is the focus of the research, is embedded in the narrative of the paper or remains undefined. This has implications for any repetition of the mapping exercise we have undertaken and also creates challenges with regard to the synthesis of evidence (Taylor *et al*., 2012). Greater conceptual clarity regarding the particular manifestations of abuse or neglect being studied could have the potential to build consensus regarding action needed to prevent and address different aspects of maltreatment as well as identify contested issues.

The topic or substantive focus of the research proved to be the most difficult aspect of research to classify and an extended process was needed to establish reliability of the codification system. It appears that there is disproportionate emphasis on some topics in comparison to others [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]. For example, in the academic literature there are almost twice as many studies of the consequences of child abuse in adulthood than there are studies of the consequences of child abuse during childhood. While the long-term effects of child abuse are an important topic of study, it is equally important to understand the more immediate consequences of abuse on a child and the developmental implications of these throughout the entire lifecourse. There is also much greater emphasis on responses to, than prevention of, child abuse. More analysis is needed to identify possible barriers to addressing certain aspects of child protection research either due to methodological challenges or ethical sensitivities.

It appears from our analysis that there is a lack of methodological diversity in the field, with certain designs predominating. We suggest that this is concerning as it may indicate that particular research questions are under-addressed or perhaps poorly addressed. For example, cross-sectional designs far outweigh cohort or experimental designs [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]. While cross-sectional studies can establish associations between outcomes and particular risk or protective factors, they cannot determine causal direction. The low number of intervention studies reported, particularly Randomised Controlled Trials (RCTs), is noteworthy. While these are methodologically and ethically challenging in such a complex and sensitive field of research, we feel there is more scope to adopt this methodology to contribute to evidence of effectiveness. We also note that 13 studies of the aetiology of child maltreatment used qualitative designs whereas only two used a cohort design indicating less attention to causal questions and more attention to subjective experiences, views and meanings. While both sets of questions are important, this imbalance suggests incongruities between research resources, infrastructure or methodological expertise and the research problems that require attention. This, in turn, is likely to limit the ability of research findings to influence policy and practice. Another gap in terms of methodology is the lack of studies that follow abused and neglected children over time [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]. Data from a number of national data sets, including cohort studies, are being interrogated to pursue child protection related questions (for example, the Environmental Risk (E-Risk) Longitudinal Twin Study, see Fisher *et al.,* 2012). While this is to be welcomed, the number of examples is low and in some cases the questions that can be addressed will be limited by the nature of the data collected. It may be possible to build on the use of cohort data further as techniques, such as data linkage, become more established allowing the identification of children in the general population who enter the child protection or looked after system and linking, for example, generic health or educational data to establish differential outcomes. Longitudinal studies that focus on maltreated children specifically are also needed (see for example Longitudinal Studies of Child Abuse and Neglect - <http://www.unc.edu/depts/sph/longscan/>).

The foci and methodologies of the child protection research audits undertaken in the USA (Peterson *et al*., 2013), Australia (Higgins *et al*., 2005) and Ireland (Buckley *et al*., 2010) differ, making comparison of findings difficult. That said, some common emerging themes from these studies are notable. The studies, like this one, share a common concern with the evident lack of an integrated national approach to child protection research [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]in order to better coordinate research commissioning and effective use of resources. They identify challenges relating to definition and measurement of abuse and neglect and also highlight difficulties related to accessing research findings and narrow dissemination practices. Within the UK, there is still much work to be done to identify key child protection research stakeholders and build structures and systems for collaborative effort in order to identify a shared child protection research agenda. Recently, the Department for Education (2014) published research priorities for child protection, social work reform and intervention. While these provided a helpful starting point for dialogue, regarding a possible future research agenda, they focussed narrowly on child protection professionals and their ability to recognise and respond to child abuse and neglect rather than an agenda around understanding child maltreatment and child protection more broadly. More work is needed, therefore, to delineate the boundaries of child protection as a public issue, the key contributors to potential solutions and the associated research agenda.

As part of the way forward, we would see value in consideration of a programmatic approach to the commissioning of research and the promotion of a multi-disciplinary research clusters model to create opportunities for critical mass and added value as opposed to a more ad hoc approach. A Child Protection Observatory or similar model could provide a number of useful research functions [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN, i.e. ‘A Child Protection Observatory... could provide a number of useful research functions’] in addition to the surveillance and analysis of trends in child maltreatment. These additional functions could include coordination and facilitation of academic collaborations across disciplinary boundaries (for example, mapping expertise and outputs), promoting quality in a wide range of methodologies, developing innovative studies or programmes of research and building expertise in research with vulnerable children. Developing conceptual clarity regarding the various manifestations of abuse is also likely to be an important aspect of a strategic research agenda alongside disseminating research, promoting knowledge exchange and creating and curating impact. Engagement with policy makers and practitioners across sectors will be crucial to the success of such an initiative. This would enable the development of mutually beneficial information and dissemination systems. For example, developing an overview of child protection research across the UK requires systematic searching, retrieving and classifying of studies [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]. While databases are becoming increasingly sophisticated, there is wide variation in the conventions used to populate and enable searching of such databases. There is also little published guidance on potential dimensions for a system of classification such as the one we have produced. One outcome of this study is the development of a clear and defensible codification system for research literature on child protection. This could be one tool that could be adopted, tested and refined for national or even international use. We are also aware of the valuable resource provided through national registers of clinical trials (for example, the ISRCTN registry - <http://www.isrctn.com>) and would see value in exploring the feasibility of a similar national register, not just for clinical trials but for all child protection research. This would require high-level cooperation of funders to provide some compulsion to researchers to register.

The mapping review, as it was conceived, inevitably has some limitations. For example, we are conscious that some types of maltreatment could be further subdivided [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN]so that manifestations of child sexual abuse, such as online abuse or sexual exploitation, could be distinguished. While our decision to use broader, more inclusive categories inevitably obscures some of the nuances of child maltreatment, we suggest that it met our primary aim of identifying the broad landscape within this body of research. Now that the research outputs have been captured, it will be possible in the future, to code the studies more specifically and undertake further analysis.

**Conclusion**

Robust reviews of evidence are essential to guide policy and practice. This study indicates that the development of a research agenda for child protection requires more than the identification of priority areas for future research; attention to questions of resources, capacity and infrastructure is also required. The mapping review indicates uneven attention to substantive topics and a lack of methodological diversity within the field of child protection research and a predominance of non-empirical papers within the academic literature in the UK. The relationship between these limitations and issues of resources, capacity and infrastructure remains and is yet to be explored. What is evident is that there would be value in developing a more coordinated strategic approach to research to ensure that scarce resources are used to maximum benefit [PUBLISHER – THE PRECEDING UNDERLINED WORDS ARE FOR THE MARGIN] in order to tackle child maltreatment. We would suggest two core principles that should guide knowledge production and transfer in order to promote a child protection agenda. These are collaborative effort to tackle a multidimensional problem and, above all, an orientation towards the practical applications of research and a focus on barriers to change. Such a coordinated approach would, though, require political will in a period of continuing austerity.

**References**

Allen M, Kaplan Jacobs S, Levy J. 2006. Mapping the literature of nursing: 1996–2000. *Journal of the Medical Library Association* **94**(2): 206–220.

Buckley H, Corrigan C, Kerrins L. 2010. *Report of an audit of child protection research in Ireland 1990-2009*. Children Acts Advisory Board: Dublin.

Department for Education. 2014. C*hild protection, social work reform and intervention. Research priorities and questions.* Department for Education: London.

Evidence for Policy and Practice Information and Co-ordinating Centre. 2012 *Descriptive Mapping*. Available: [http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=184](http://eppi.ioe.ac.uk/cms/Default.aspx?PARAMS=xik_2YzJFQ9vTSUfiuneVTZqPose5bYRcNsE7SKFm6vCMu4P) (23 March 2015).

Grant MJ, Booth A. 2009. A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, **26:** 91-108.

Higgins DJ, Adams RM, Bromfield LM, Richardson N, Aldana MS. 2005. *National audit of Australian child protection research 1995–2004.* National Child Protection Clearinghouse, Australian Institute of Family Studies: Melbourne.

Fisher HL, Moffitt TE, Houts RM, Belsky DW, Arseneault L, Caspi A. 2012. Bullying victimisation and risk of self-harm in early adolescence: longitudinal cohort study. *British Medical Journal*, **344**, e2683.

May-Chahal C, Cawson P. 2005. Measuring child maltreatment in the United Kingdom: a study of the prevalence of child abuse and neglect. *Child Abuse & Neglect* **29**: 969–984. doi:10.1016/j.chiabu. 2004.05.009.

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. 2009. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *BMJ*. 339:b2535, doi: 10.1136/bmj.b2535.

NSPCC. 2015. *Child Abuse And Neglect*. Available: http://www.nspcc.org.uk/preventing-abuse/child-abuse-and-neglect/ (Accessed 14 September 2015).

Petersen A, Joseph J, Feit M. 2013. *New Directions In Child Abuse And Neglect Research. Report of the Committee on Child Maltreatment Research, Policy, and Practice for the Next Decade: Phase II.* The National Academies Press: Washington, D.C.

Petticrew M, Roberts H. 2003. Evidence, hierarchies, and typologies: horses for courses. *Journal Epidemiol Community Health*, **57:** 527-529

ScotCen Social Research, 2013, *Growing Up in Scotland: Cohort 1, Sweeps 1-6, 2005-2011*, [data collection], UK Data Service, *11th Edition,* Accessed 07 November 2015, SN: 5760, <http://dx.doi.org/10.5255/UKDA-SN-5760-4>

Shaw I, Norton M. 2007. *The kinds and quality of social work research in UK universities: Using knowledge in social care, report 17.* Social Care Institute for Excellence: London.

 Tarara H, Daniel B. 2007. *Audit of Scottish Child Care and Protection Research*. Scottish Child Care and Protection Network: Stirling.

Taylor J, Daniel B, Scott J. 2012. Noticing and helping the neglected child: towards an international

research agenda. *Child and Family Social Work,* **17**: 416–426.

University of Bristol. Department of Social Medicine. Avon Longitudinal Study of Parents and Children, 2009, *Avon Longitudinal Study of Parents and Children, 1990-2003: Social Science Sampler Datasets*. [data collection]. UK Data Service. Accessed 07 November 2015, SN: 6147, <http://dx.doi.org/10.5255/UKDA-SN-6147-1>.

University of London. Institute of Education. Centre for Longitudinal Studies, 2014, *1970 British Cohort Study: Forty-Two-Year Follow-Up, 2012*, [data collection], UK Data Service, Accessed 07 November 2015, SN: 7473, <http://dx.doi.org/10.5255/UKDA-SN-7473-1>

**Word length: 3962 (not inc. refs and tables/figures)**

**Number of references: = 18**