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Socioeconomic
Determinants of Truancy
and Bullying Among
Adolescents in UK

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ABSTRACT

Using the Understanding Society dataset, the research aims at shedding a light on how the socioeconomic background and family factors of adolescent students in UK affect the propensity to be exposed to antisocial behaviours. These are youth bullying victimization, youth bullying perpetration, and youth propensity truancy. To observe these dynamics, we use five waves spanning from 2009 to 2019.

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Summary:

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Introduction

Truancy and bullying are antisocial behaviours occurring in early stages of life with potential adverse outcomes in adulthood. The long-term impacts of these two phenomena have been studied in different fields of research: economic studies focus their attention on the potential harming consequences on education attainments (Gorman et al., 2019; Attwood and Croll, 2015) and working productivity and earnings (Brown and Taylor, 2008), while psychologic studies investigate the mental consequences of these misbehaviours (Hibbett and Fogelman 1990; McDougall and Vaillancourt, 2015).

Preadolescence and adolescence are fundamental periods characterizing skill accumulation processes and human capital development. Hence, understanding how contextual factors, such as economic background and the family environment, affect the propensity of being involved in these phenomena is fundamental for future prevention measures. Previous literature underscores that lower levels of disposable income are a significant predictor of bullying (Menacker et al., 1990; Carbone-Lopez, 2010), as well as frequency of truancy (Klein et al., 2020). Even family factors such as scarce interest and presence of parents at home increase the propensity of youth bullying and youth truancy (Ttofi et al., 2014; Ballantine and Hammerick, 2009).

To identify effective prevention policy guidelines, it is important to investigate carefully which are the main factors that might prevent school absenteeism and involvements in bullying episodes.

Building on these motivations, this work investigates the main predictors of truancy, bullying victimisation and bullying perpetration considering, among other characteristics, the household socioeconomic background, the family environment and their interplay.

The study is divided in three complementary tasks: after finding the determinant socioeconomic variables which significantly affect on the outcome variables, we compare their role with a set of domestic climate and family relationships variables. Then we implement joint analyses between domestic environment measures integrated with income classification levels. In doing so, we can observe how correlations significantly vary across income classes, suggesting the presence of

income-specific gradients. This last step of analysis offer new insights, with respect to the existing literature, on the interplay between socioeconomic background and their domestic environment in affecting antisocial behaviours among adolescents.

Models are based on data from self-completion questionnaires developed by Understanding Society (UK Household Longitudinal Study, UKHLS), a Panel study which gathers measures for truancy and bullying among preadolescents and adolescents in waves 1, 3, 5, 7, 9 spanning from 2009 to 2019.

Our study relies on dataset which allow to analyse both antisocial behaviours (truancy and bullying) with a wide set of familiar and individual socioeconomic indicators including the subjective evaluations of family environment, collected in the main survey.

This study is divided in the following parts: in the first chapter we review the main previous scientific researches on the determinants and consequences of bullying experiences and absenteeism from school, and at the end we expose the research questions. For bullying we start our review from seminal works of Dan Olweus. Then, taking into account the main theories in psychological fields on potential long term consequences of adverse experiences in early stages of life (our starting point in the comprehension of these theories is McDougall & Vaillancourt, 2015), we expose the reason why studying this antisocial behaviours is an important feature for future implementation of socioeconomic policies. Considering truancy, our framework is based on Baker et al.'s (2001) three categories correlated to this juvenile misbehaviour, which are family factors, economic influence, and school factors and student variables. Using this subdivision we developed our review, in particular considering Attwood and Croll's (2006; 2015) works on adolescents pupils in England, Klein et al.'s (2020) evidences for variation in incidences among socioeconomic status, and Collinwood et al (2020) for understanding future outcome of playing truancy.

In Chapter II we expose the composition of our dataset based on Understanding Society, in particular generating our variables from questionnaires among preadolescents and adolescents between 10 and 15-year olds. At the same time, we consider other variables corresponding to the parents and household of younger

interviewees. In data aggregation we take a cue from the previous works by Chrysanthou and Vasilakis (2018; 2019; 2020) based on UKHLS dataset.

Finally, in Chapter III we implement three model specifications in order to assess respectively, the impact of socioeconomic characteristics on truancy, passive bullying and active bullying; the role of family environment and relationships on the dependent variables; if these perceived domestic environment variables report consistent variations among income classification levels.

In light of obtained results, the possible policies that might contribute to preventing truancy and bullying behaviours are finally discussed.

Chapter I – Literature Review

The purpose of this study is to understand the role of the characteristics of specific socioeconomic status of individuals as predictors truancy and bullying. These antisocial behaviours are common experiences during preadolescence and adolescence and comprehend their sources might be useful notion for preventing in the future. The reason why these topics are worthy to be covered is related to the future implications that children's behaviours, bullying and truancy, may have on their future outcome in academic, working, and even relational environments. As we will see in the next sessions, the scientific literature has observed different and significant relationships between how early life inputs and experiences are linked to different outcomes in adulthood. These aspects are fundamental to be taken into account for economists and policy makers for the implication of targeted programs or policies with the aim at developing efficiently the return on investments in human capital.

Hence, in this Chapter I we present a thematic review of the most important topics and findings presented in the last years and decades, focusing on the implication about skill formation of human capital, consequences in educational attainments and workplace satisfaction, incidences of social background, and long-term consequences. Besides, after a brief definition of bullying, we attach a section on the seminal studies about the psychological consequences and properties of adverse episodes on youth mental health.

1.1 Definition of bullying in economic and psychological literature

In the developed countries, bullying in all its form is claimed as one of the main problems children, students, young adults face in their lifetimes, hence in the first place it is important to understand how it has been studied toward times and what final considerations are important and significant to set our analysis.

The U.S. Department of Health and Human Services (2014) describes bullying as "unwanted, aggressive behaviour among school-aged children that involves a real or

perceived power imbalance, and the behaviour is repeated or has the potential to be repeated".

In one of the most important studies about bullying, Dan Olweus (1993) gives a clear definition of bullying factoring its characteristics in three main key elements: firstly, with bullying is described any kind of physical or verbal attacks and any sort of intimidation which aims to damage victims causing properly physical injuries or negative feelings of fear, distress and sense of harassment. In the second place, bullying involves an imbalance of power between the perpetrators and the victims, which usually stand alone and are defenceless. Third, to label a specific behaviour as bullying it needs to occur between the same children for long and continued time, which expose one or more other students to negative actions (Olweus, 1993). Physical contact, verbal insults, rumours, and intentional exclusion are negative actions which aim at injure or create feelings as being uncomfortable and exclusion on purpose. The main characteristic of peer victimization is perpetration over time and the fact it is not limited to occasional arguments or occasional skirmishes between boys or girls, moreover it "entails the repeated, intentional humiliation and oppression of a person who has less power than his or her aggressor(s)"(Olweus, 1999). Smith & Brain (2000) observe that the presence of imbalance of power is a bullying key feature because creates a sense of defencelessness felt by the victim, which is outnumbered with respect the committers, and physically and psychologically weaker with respect to them.

School and family are the most common places where all these characteristics might take place, in particular the first one because it is the location where a lot of individuals from different backgrounds spend a large amount of their daily time, and in (Smith & Brain, 2000) such a peer environment bullying attitudes easily take place. Here, social dynamics occur among peer individuals and to better comprehend who are involved in these adverse behaviour, it is useful to expose Olweus' characteristics list of potential victims (two kinds) and then, of perpetrators[1]: victims might be proactive, that is hyperactive children affected by concentration problems which may create with their behaviours tension situations or cause irritation among other children. The other kind of bullied pupils (Olweus, 1993) are passive victims, sensitive boys and girls,

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[1] In both his major works (1993 ibid; Olweus, D. (1997).

more sensible with respect to their peers, quiet, cautions, as well as they tend to cry more often, and especially among boys, they are weaker with respect to the perpetrators. In general, as Lowenstein (1978) observed in one of the seminal studies on this social dynamic, bullied individuals have more odd mannerism than non-bullied pupils. On the other hand, the active bullies are described as more prone to use violence among their peers, even against teachers and parents. They are more aggressive, impulsive, argumentative, stronger with respect their peers, and in general with respect to target victims, and have the necessity to consider themselves in a dominant position with no regard about who they are facing at.

Sarzosa (2015) lists four characteristics which explain why contexts as school is likable for record bullying episodes:

1) The presence of peer pressure by the individuals which attend the same school, schoolmates, classmates, friends, closer friends, potential friends, and acquittances where each of them might represent some specific characteristic and identification by the single student. Faris & Felmlee (2011) argue that bullying evolves in contexts where individuals have the necessity to belong and show a peer group status, this is in accordance to the considerations that preadolescents are more sensitive and propend easily to highlight differences and gaps among peers (West P. et al., 2004);

2) Multidimensional heterogeneity of students; indeed, in school, especially in the first levels (primary and middle school), composition of classes and schools are multi-faceted, which underscore the comparison between different cultures, ethnicities, or simply among students with different background. These diversities are sensible theme at school, which might lead to an enrichment by the students themselves, but at the same time might lead to isolation, discrimination, and intention to gather individuals in closed-small-homogeneous groups;

3) Juvenile lack of self-control; young people are not grown enough to deeply understand all the aspects and consequences of their behaviours, which can lead to hurt someone with or without the intention by the perpetrator;

4) Cyberbullying[2], this aspect of bullying is strongly linked to the evolution and the implementation of technology among students, considering the advent of social networks and chatroom which enhance the possibility to share and spread media and thoughts[3]. In this social network perspective, bullying is intended as a manifestation of intentions to preserve peer group status.

Pepler D. et al, (2008) express bullying episodes "as a relationship problem". Their work is an attempt which try to comprehend bullying pathways separating it in three levels of risk: individual, parents, and peer relationship and considering different trajectories of bullying (high, moderate, never). We are going to face all these three declinations of bullying in the last section of this First Part, but right now it is important to have a general pattern on how adverse violent episodes happen and why they might record significant long-term effects on the individuals involved, and what can be the impacts extents in future life.

1.2 Psychological framework

Before the analysis of significant consequences and impact by bullying episodes on individuals behaviours and which outcomes might have long-term effects, influencing negatively the evolution process of youngers, the purpose of this section is to get deep into the psychological and neurobiological literature and their main evidences on young individuals' mental health. Hence, to understand long term bullying outcomes and to comprehend the intensity of repercussions on students' future life, it is fundamental to take a step backward and consider some theoretical aspect from non-economic fields. Two main psychological theories, which have been developed across the years, shed light on the adverse future outcomes of bullying. These are the strain theory and the antisocial behaviour theory. Both try to understand and build a framework about all kind of manifestations of adverse misbehaviour, here bullying

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[2] For the purpose of this research, we consider cyberbullying as a part of the bullying victimisation, but it is important to underline that there are several research which study this adverse growing behaviour among young individuals

[3] In Annual Bullying Survey 2019 presented by Ditch the Label, 24% of the young students interviewed are worried about getting abuse online. This study also analyses the fact that new technologies are fundamental growing tools among young people and might generate feelings of connection, but at the same time increases their feeling of feel isolated.

victimization, its consequences on either the victims and the perpetrators, and the short-medium and long effects that can take place among individuals, especially children. The strain theory, firstly developed by Merton R. K. (1938) and then integrated by R. Agnew (1992), claims that individuals who experience a any sort of strain, in this case bullying, in the long run may develop negative emotions as anger, anxiety, depression, frustration. Specifically, Merton R. K. argued that the gap between initial personal aspiration and final outcomes might be the source followed by feelings of stress and frustration which lead to commit crimes or act in adverse way. To this first explanation of strain theory, Agnew R. identified three other triggering factors: (a) failure to achieve positively valued goals; (b) loss of positive-valued stimuli; and (c) presentation of negative stimuli. Besides, Bakker & Demerouti (2007) underscore that when occurs an imbalance between what individuals want to achieve and what they reach with their own resources, they developed feeling as stress and discomfort.

These sentiments are dangerous because victims may exacerbate the outcomes and lead to commit drastic actions as wrongdoing, self-harm, suicide, and in particular for youngers: self-social isolation, or be engaged in other form of bullying, passing from being the victim to be the perpetrator. In accordance with this last aspect, Barker, Arseneault, Brendgen, Fontaine, and Maughan (2008), and later Haltigan and Vaillancourt (2014), implement two integrative analyses based on the evolution of psychopathologic symptoms towards bullying and peer victimization paths among teenagers between 11 to 16 year olds, the first one, and among preadolescents between 9 to 12 to years old children, the latter. Despite both researches observe important decreases in bullying and victimization over time, at the same time they record that for a small but significant subgroup of students decreasing in victimization is associated with an increase in bullying perpetrations, in accordance with Patchin and Hinduja (2011), which observed engaging bullying episodes by former bullied victims as a coping behaviour. This second aspect is gradually dimmed with age, but the idea that suffering by bullying victimization might bring to become a perpetrator as well later in life, it is an important observation that must be taken into account for our study. We will face again in the following sections.

Studies support the idea that being exposed to violence and victimization in preadolescence bring individuals to develop remarkable persistent dysfunctional antisocial behaviour (Moffit T.E., 1993). Keeping into account this consideration, the antisocial behaviour theory, claimed by Patterson, Reid and Dishion (1992), is based on a developmental psychological perspective and sustains that a manifestation of antisocial behaviour by an individual in childhood lead to a predictable negative behaviour in the following stages of life, which it looks like a negative behavioural spiral from early life to adulthood. Being exposed to bullying episodes in the past is an alarming predictor of future victimization, indeed Chrysanthou&Vasilakis (2020) observe that bullied preadolescents and adolescents[4] are uncapable to stop this persistence and to escape from this adverse spiral. In fact, it happens that victimised students tend to do not report expositions to bullying violence neither to the teacher or other personal at school, nor with their parents. The reasons are linked to the fear of retaliation and to the stigma by peers. The second is related to the lack by parents of victims to realize and understand the victimization problems their kids are facing, this is attributable to ignorance of school dynamics or to scarce attention/interest towards their daughters and sons, neglecting what happen outside the domestic environment. Moreover, Smith et al. (2004) sustains that this lack of communication by victims might be traceable to their personal inner characteristics and behaviours which are difficult to register and observe, like the absence of dominance and social boldness. Moreover, from a biological point of view, it has been demonstrated that being involved in bullying episodes during young age may lead to have potential long-lasting antisocial impacts, especially on the victims. Chrysanthou and Vasilakis (2020) observe this propensity in the so-called behavioural effect: "considering otherwise identical adolescents, those victimised in the past can amend their behaviour which in turn determines future victimisation propensity".

Important contributions to understand how bullying involvement, stress strains, adverse events affect behaviour toward time is shown in the psychological and neurobiology literature. In the following part we try to gather the main findings on this topic which may give us a better comprehension about how mental health

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[4] They adopt in this study the UKHLS youth samples, in particular they focus the longitudinal researches on the Wave 1, Wave 3, and Wave 5, covering the temporal range 2009-2015.

perceives negative shocks and why in specific age-thresholds these adverse events need to be treat more carefully. Substantially, the researches divide the early individual stages of life in early childhood, which correspond to the range 4 to 7-year olds; late childhood or preadolescence between 8 and 11-year olds, and adolescence from 12 to 18. Our study focuses on the range among preadolescence and adolescence (10 to 15), but here we briefly overlook on literature that cover preadolescent and adolescent population as well as childhood pupils. Vaillacourt et al. (2011) in a longitudinal analysis based on early adolescent students expose the association between bullying victimization and the presence of significant depression symptoms in future periods after the happening of these adverse experiences. The consequences on bullied children is humiliation which tend to be chronic with important consequences on the brain of bullied children. Indeed, this study gather scientific findings as lower cortisol level recorded in victimized children; the fact that depressive symptoms affect the scarce memory in adulthood; and how peer-victimized children's sense of safety worsens during time. Basically, they find out a relation between how depression and little production of cortisol are linked with deleterious effects on memory. These dysregulated physiologic stress responses are observed in a complementary way by Ouellet-Morin, Danese, et al. (2011) where they argue that being exposed to bullying episodes in childhood decreases the levels of cortisol reactivity and hypo-reactivity by HPA-axis[5], so psychosocial stressors harm them more than children who do not experience bullied victimization. It is observed that in victims brain the production of cortisol is fewer in these reactions. This aspect is potentially unhealthy because thrives to cope with stressful situations which can have important consequences in future life. Besides, Klitzing et al. (2012) argue that in bullied children with substantial blunted cortisol reactivity, the risk of record worsening in mental health and emotional behaviour increases. Moreover, low levels of cortisol, developed from adverse household conditions or traumatic and harsh events in early and middle childhood, are associated with internalizing and externalizing problems which increase the risk for children to develop emotional symptoms as depression.

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[5] The HPA-axis is composed by the interaction between the hypothalamus, the pituitary gland and the adrenal gland. Gathered, their relationships generate a neuroendocrine system which its main property is to control stress.

For Reijntjes et al. (2010), bullying episodes and peer victimization increase internalizing difficulties which lead to physical, psychiatric and phycological disorders, but this relationship is reciprocal, underscoring a potential cyclical process across time. This relationship emphasises the incrementing risks for adolescents involved in victimization episodes to internalise bullying experiences: this adverse behaviour tend to worsen significantly potential mental health disorders, conducing victims to develop symptoms such as anxiety, depression, loneliness, withdrawal, emotional problems, and somatic complaints, poor appetite and headaches. On the other hand, in another research, Reijntjes et al., (2011) observe an important linkage between peer victimization and consequences of externalization of problems developed toward time. The main conclusion of this work is that the externalization of problems has a twofold consequence: it affects future peer victimization and at the same time it might be predicted by peer victimization. That is, externalising problems leads as well to an escalating spiral of victimization and ailments such as aggression, delinquency, misconduct, and inattention. Besides, Currie & Tekin (2012) sustain that maltreatment in childhood might lead to adverse crime externalities, in particular starting to engage in local criminal gangs in juvenile age. In fact, there is an increase in the probability to be sentenced for juvenile crime for people whose faced child maltreatment.

In conclusion, Eriksen et al (2014) have found that one psychological long term effect for perpetrating bullying in childhood or adolescence is the record of higher probability to future criminal convictions, and for young bullying victims, the consequences might be an higher use of psychopharmacological medications, body weight for boys and teenage pregnancy for girls. Moreover, Kim et al. (2006) sustains that bullied will have more probability to suffer adverse feelings as anxiety and fear, which may lead them to develop sleeping difficulties, isolation from peers and loneliness sensations.

Now that we have exposed how the main responses of bullying on the psychological pattern of single young individuals are, in the next part we try to comprehend how these outcomes might influence future goals of people, from a skill-formation-path point of view.

1.3 Skill formation, educational attainments and bullying in economic literature

The economic literature which focusess on the labour market arguess that human capital variables such as education and personal skills are among the main determinants of labour market outcomes. In fact, these two components of individual formation are fundamental to design and extent the future wage, employment and in general human capital outcomes (Drydakis 2013). In one of the main researches in this field, Elliot and Kilpatrick (1994) highlight how being bullied at school may directly affect academic outcomes and indirectly may adversely influenced individual workplace ambitions. Bear in mind this first observation, we are going to get deep into this branch of economics and its implications.

In one of the first studies with the aim at link, through econometric analysis[6], the outcomes of bullying in adolescence with individual adulthood, it is shown how academic attainment and human capital accumulation affect lifecycle of bullying victims and their perpetrators involved (Brown and Taylor, 2008). By using British National Child Development Study (NCDS) they observed negative effects, which take place at school and in future life as well, for both bullied individuals and perpetrators, where the effect is grater for the latter.

We have already met in the psychological review the problem of bullying related to its potential damages to self-esteem and self-fulfilment of people and its long-term effects. Sarzosa (2015) exposes a clear and useful way for understanding and analysing the relationship between bullying and skills accumulation. To do it, it is important to keep in mind that the skills are divided in two main groups: cognitive skills, which gather all forms of knowing and awareness such as perceiving, conceiving, remembering, reasoning, judging, imagining, problem solving; and non-cognitive skills such as personality and motivational traits which determine how individuals are prone to think, behave and feel. These aspects are crucial in the development of successful lives and their positive stimulation in early life bringing to an overall long-term benefit on health and future economic earnings (Gaete, 2019).

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[6] Until then, despite the pluriannual presence of antibullying programs implemented at school in the developed world, there were a lack of economic and econometric analysis in this field with respect to psychological literature.

Two important considerations about bullying victims are exposed in Olweus (1997), Smith and Brain (2000), and Hodges et al. (1997). The former two studies rely on the consideration that the emotional wellbeing of bullying victims is threated and affected by acute and long-lasting consequences, and the latter paper adds that the potential inner propensity of behavioural vulnerability by children worsens its likelihood among bullying victim. These aspects bring to the explanation of the downward spiral observed by Sarzosa (2015), where bullying victimization hampers or lowers skills accumulation and at the same time enhance the possibility to be more prone to suffer in the future from other experiences of bullying victimization. This mechanism leads to the creation of a sort of burden which prevent individuals to reach rewarding levels of self-fulfilment in the future, both in academic attainments and in future workplaces. This evolution spiral is interpreted by the combination of the following three studies: the first concept is that skills generate the virtuous circle to generate skills (Cunha et al., 2010), the second one is that skills mediate the intensity to which bullying influences outcomes (Sarzosa and Urzua, 2013), and finally the third concept is that bullying affect the extent of skill accumulation (Sarzosa, 2015).

In this contest, it is useful to observe the economic theories of life-cycle skill formation. The idea at the bottom of this argument is that early investments in life, here the acquisition and production of skills, might lead to rising the productivity in the following stages. In the same way, bullying victimization and being involved in antisocial experiences bring to counter the process or skill accumulation, hence the skill investments. This lack of investments has consequences in negative impact on self-fulfilment and self-esteem, which affect at the same time the labour market and consequently the future earning and job satisfaction (Heckman 2008). Considerations like the previous one are in line with the observation that claims the critical importance of preadolescence and early adolescence period for setting the beginning of process of skill accumulation empowering adult skills and human capital (Heckman, 2006; Van den Berg et al., 2014). Important contributions in these field which links human capital and productivity are present in Le et al. (2005), which observe that bullying cause either drop-outs at school and also generate poor labour market outcomes which in particular harm personal careers of victimized individuals and in general the productivity of labour market. In this process of damaging human capital

accumulation, bullying influences significantly employment status and salaries (Brown and Taylor, 2008).

Besides, for Heckman (2006) investments in early life are fundamental for the skill formation of individuals, in particular for those in disadvantage environment. He sustains that all the interventions implemented during adolescence onward as "reduced pupil teacher ratios, public job training, convict rehabilitation programs, tuition subsidies, or expenditure on police" , despite of their factual utility, record less returns on investments in terms of human capital with respect to programs in early life which are accompanied with high-level education programs. In his words: "early investments must be followed by later investments if maximum value is to be realized".

The process of human capital formation is, as expressed in Cunha et al. (2010), a dynamic process, hence looking at the lifetime labour goals achieved and health outcomes reached in adulthood as returns on investments, it is fundamental for economist to understand how inputs along the lifetimes affect the finals results. In particular, it is fundamental to comprehend at which stage of life particular policies or programs give back more performative and efficient returns. In our case, after understanding how the psychological response of young individuals with respect to a specific act of victimization or maltreatment, now it is important to underscore where they find problems, when those take place, how they can be overcome. Cunha et al. (2010) analysing the investments through different stages in the growth of children, their attention focus on different programs for disadvantages children. They observe that targeted strategies implemented to overcome adverse environment for children have different outcomes with respect to their ageing level: investments in remediation strategies in adolescence encourage the formation of adult non-cognitive skills, while these strategies implemented during childhood foster cognitive skills in adulthood.

Shakoor et al. (2012) observe that negative family factors, such as child maltreatment, in early childhood, conventionally within the range 4 to7-year olds, increase the risk to become bullying perpetrator or bullying victims in the following years, especially in adolescence.

In Fletcher (2009) and then in Fletcher and Schurer (2017), considering that personal characteristics are developed from influencing factors in early life, which persist in

the long term affecting psychological traumas and economic consequences, adverse childhood experiences as domestic maltreatment might affect directly personality traits, which they observe lead to potential damages in human capital accumulation and in following labour earnings, and also might record significant repercussions on the likelihood of social life of individuals.

Schurer and Trajkovski, (2018) observe how early-life adverse childhood experiences are linked with economic outcomes in later-life. Their purpose is to analyse the gap earnings among people which suffered of high negative episodes understanding their association with later life returns. Barriers as out-of-home care, neglect, separation from parents, and a host of other negative experiences may take place in each social background households, but these have more severe consequences in economic disadvantaged families rather than in privileged families. An important consideration reported here is the role of teachers whose play a significant part (not already marked as causal) in the comprehension of the potential returns in students' adult lives. That is, teacher-assessed neglect is a significant predictor.

Hence, we have taken a close look on how early life interventions can produce long-term health, or vice versa, how adverse episodes in specific stages of early life might be determinant sources of future unhappiness and to an unsatisfied life.

It is important to mention that also the ethnic background and merely the colour the skin may be a factor which lead to perpetuate bullying, which may affect future earnings. Indeed, individuals which belong to marginalized groups of society and across different demographic groups, as racial minorities, youth with disabilities, LGBT youngers, and female are disproportionately affected by these harmful behaviours. Guasp et al. (2012) conducted a study settle in UK which indicate that 32% of gay students who experience bullying episodes in their school age, modify their future education plan. Other studies observe that for LGBT community bullying episodes lead to higher incidence of adverse mental health problems (Kosciw et al., 2008; Burton et al., 2013).

In the previous work of Drydakis (2018), a framework of seven hypothesis is adopted to study the consequences of bullying in LGBT student's human capital development through time: i) there is a negative association between school-age bullying experienced by sexual orientation minorities and white-collar employment; ii) there

is a negative association between school-age bullying experienced by sexual orientation minorities and white-collar employment; iii) there is a positive association between school-age bullying and workplace bullying experienced by sexual orientation minorities; iv) there is a negative association between the existence of an LGBT group in the workplace and workplace bullying experienced by sexual orientation minorities, v) there is a negative association between school-age bullying and job satisfaction experienced by sexual orientation minorities; vi) there is a negative association between workplace bullying and job satisfaction experienced by sexual orientation minorities; vii) there is a positive association between the existence of LGBT group in the workplace and job satisfaction experienced by sexual orientation minorities. After this, the main result is that bullying episodes in school-age suffered by sexual minorities are associated to have outcomes persisting in adulthood that have tangible consequences in downsizing the educational attainments and reduce the possibility to reach white-collar job positions. Hence, the main evidence is that school-age bullying experiences endure until working life and record incidences in negative working satisfaction across time.

Gorman et al. (2019) analyses the effect of adolescent bullying through time. It is worthy seeing that school bullying has significant negative effects either in the short and in the long run. In the first scenario, the consequences are negative academic outcomes, in the second case, bullying sufferance may be carried by students during their life which has the most evident effect on affecting mental health, and consequently mental illness, but also the employment status of people. In fact, here it is robustly demonstrated that being involved in bullying during early life facilitate to suffer more during unemployment period and exacerbate their lasting adverse effects. This is also linked to the low qualified working skills literature that characterized people involved in childhood, preadolescence and adolescence bullying. For instance, Varhama and Björkqvist (2005) find out a relationship between being bullied at school during adolescence and struggling by long-lasting periods of unemployment during working life, indeed the 29% among these individuals have been involved in bullying episodes at least one per week in young age.

Studying bullying effects on individuals is important to understand the implications that these kinds of harmful behaviours have on the evolution of people and their

accumulation of human capital skills. Depression, low self-esteem, mistrust, stress, anxiety are typical feelings developed by bullying victims. The consequences are not just from a social point of view, that is the constant tension felt by victims which lead to record psychosomatic disorders, incapacity to manage emotions, and may lead to extreme scenarios as psychological breakdowns or real suicide intentions. Toward retrospective questionnaires about bullying, Drydakis (2013) analyses the long-term effects of bullying in adulthood, considering employment outcomes as job satisfaction and participation, salaries and qualification reached. The main results suggest that these working life goals are associated with significant high level of victimisation in the academic period, but it is important to underscore that there are no findings about causality. Of course, other factors through life might affect people, but long-lasting effects are also demonstrated in other studies, as lower self-esteem in adulthood is record in people which were involved in bullying at school. Moreover, victimization harms future level of confidence in social relationships among the victims which develop a sense of mistrust in others and adverse social effects in adult life and in working environment. It leads also in physical health problems as body aches and higher sense of fatigue and lower energy, which are linkable to the social adverse effects. Bullying people increase the level of emotionally distress as former victims and it might be associated to post-traumatic stress that affect mental health of individuals and can cause long-lasting memories associated to negative episodes contrary to their peers, which did not suffer during childhood, preadolescence or adolescence from bullying experiences. In Drydakis (2013), the main conclusion is that labour force participation, the amount of working hours wage, and employment rates are significantly associated to victimization in preadolescence and adolescence time.

Internalization through time of adverse episodes of bullying harms the mental health and the capacity of future workers to feel comfortable in team working, influences in a negative way their potential efficiencies, damages bond tide relationships with co-workers and consequently labour participation with drop in hourly hours worked and wage earned, and as observed in Sarzosa (2015), this vicious circle decrease significantly opportunities for future positive adjustments.

The importance for economists to understand adverse effects of bullying on early stages of individuals' life is fundamental to try to understand in which way these consequences impact on the later stage of life, especially on work participation and efficiency of the employments. Another factor worth to mention is that behaviour of future workers is either determined by past experiences and by their actual context, hence episodes of bullying may had happened around preadolescence years, but also might occur during working age. Hence, bullying is not just a problem in school environment, it might take place also in working environment and the consequences are similar as the increase of sickness absence by workers involved in these harmful behaviours. Although during the years economists focused their attention on which could be the best incentives to face sickness absence from work, analysing for instance how working conditions affect job security, workload, and role of uncertainty, or how modifications in replacement rates of sickness benefits lead to absenteeism among workers, just Eriksen et al. (2016) shed a light on how bullying in workplace affects sickness absence and consequently employees health. These are outcomes which agree with the consequences as being bullied or witnessing bullying episodes bring people to list variety of feelings as general stress and stressful symptoms, psychological and psychosomatic stress reactions, and in particular for the victims, bullying might cause sleep problems and concentration deficits , burnout, a constant feeling of anger. Hence, these elements bring people to perceive workplace as an adverse environment and affect negatively their social relation with colleagues and to develop lower expectations in relationship bonds. That is, bullying in workplace harms people well-being and self-esteem.

Eriksen et al. (2016) find a significant relationship on long-term sickness absence for women with respect to men. They also observe an increase in the prescriptions and use of antidepressant medication in years right after being involved in bullying episodes which underscore the extent of long-lasting health consequences of exposure to this kind of behaviour. It is wrong to admit that bullying on workplace harm only the female gender, indeed lower level of absenteeism recorded in this study by men might be related to the consequence that men, when exposed to bullying episodes in workplace, are more prone to quit the job and labour force, with respect to just take sickness absence days off. It is also analysed that adverse working environment leads

men workers to receive lower wages and therefore workplace transitions and probabilities of being promoted.

Another characteristic which we have already seen in school environment is that the workers' gender is not the only determinant of victimization in the workplace: sexual orientations minorities, such as gay, lesbian, bisexual, transgender (LGBT people) face significant levels of prejudice in their career life (Drydakis, 2018). Bullying episodes based on sexual orientation preferences are recorded worldwide, from Australia to United States, from Asia to European Union, despite here anti-discrimination laws exists.

These last parts related to the bullying episodes in workplace, not necessary linked to previous victimisation episodes in early stages of life, give us deep knowledge of bullying episodes' outcomes even among adults. Considering this social phenomenon, if it is prevented in time, that is in school age, can be prevented also for the following years. Indeed, a positive environment at work has important return both on employers, and in the efficiency of work.

1.4 Relationship between background context and bullying at school

After having exposed the psychological reactions of bullying and the long-term consequences associated, educational attainments and working life outcomes, here we observe the evidences related to family environment and belonging area and how they are related to bullying episodes at school. Before that, we present the main evidences recorded in the school context. These results will be useful starting points for the definition of the variables used in our models in the later stages of the study.

In the Annual Bullying Survey 2019 gathered by Ditch the Label, 22% of the interviewers highlight that they experience bullying victimization in the past 12-months, 27% witnessed bullying episodes and 2% claim they have bullied other individuals. The main perceived reasons why individuals are bullied are[7]: 59% attitudes towards appearance; 20% attitudes towards high grades; 15% attitudes

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[7] In these questionnaire students might attribute more than one reason why they are affected by bullying victimisation.

towards low grades; 9% attitudes towards low household income; 9% attitudes towards race; 9% attitudes towards culture.

The impact of been bullied within 12 months registers the following symptoms: feeling depressed, anxious, had suicidal thoughts, self-harmed, truanting from school/college, developing anti-social behaviour, developing eating disorder, attempting suicide, running away from home, abusing drugs and/or alcohol, engaging in risky sexual behaviour. Moreover, the impact on mental health recorded in this survey for one third of the interviewers ranges between moderate to extreme. Besides, for 63% of them bullying affect significantly their optimism and positivity, 41% their ambitions; 66% confidence, 50% studies, 64% social life, 45% home life, and 67% self-esteem.

A not negligible element that transpires from this sample is that 28% of bullied individuals do not reported victimisation episodes and the main reasons are being scared of it getting worse, embarrass, being called snitch and the risk to would not be taken seriously. Bullying among adolescents and preadolescents may be expressed with direct physical acts and verbal manifestations, which is more common between boys than girls and in younger individual aggregations, while indirect aggressions, like peer exclusion and gossip, take place among older (Pepler, Depeng, Craig, & Connoly, 2008). At the same time, Carbone-Lopez et al. (2010) consider that these kinds of bullying, direct and indirect violence[8], in school context have different externalities. Indirect bullying is more common among middle-school students compared to direct one. This evidence is in line for girls' sample, while boys suffer more by physical/direct bullying. Considering direct bullying, race and age are not significant predictors of bullying episodes, neither for boys nor for girls. Despite these considerations, on the other hand, there are some gender specific differences in indirect bullying episodes: age, race, and poverty school are variables correlated to

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[8] As exposed in their paper, the distinction of the two types of bullying is the following: Direct bullying is measured via two questions tapping physical violence or threats of violence: (a) ''Have you been attacked or threatened on your way to or from school'' and (b) ''Have you been threatened or attacked at school?'' Indirect bullying includes three questions: (a) ''Have you had mean rumours or lies spread about you at school;'' (b) ''Have you been made fun of at school because of your looks or the way you talk; and (c) ''Have you had sexual l jokes, comments, or gestures made to you at school?''.

boy's inclination to be involved in indirect victimization episodes. For girls instead these specifications are uncorrelated to verbal bullying.

After observing how school can be a source of bullying, now we are going to report in what way, through the scientific literature, the family environment and the context of belonging, understood as place of residence, urban/rural area, social extraction, are associated with this adverse social phenomenon.

Understanding the association between socioeconomic factors and mental health in early stages of life with adult wellbeing is the topic of several researches. In Layard et al. (2014), one important predictor among childhood characteristics for adult life satisfaction (at 34-year olds) is children emotional health, which affects, as seen, following steps in individual growth such as educational attainment, employment and partnership status. Clark and Lee (2017) observed that positive outcomes from belonging families and early-life experiences are linked to a significant well-being in older life (over 50-year olds). These aspects influence mainly the so-called eudaimonia[9] with respect to happiness. Hence, keeping into consideration the socioeconomic context and the background of individuals in early stages of life might be significant to understand how they develop and how their behaviour is associated with bullying involvement and consequently how all these aspects impact on their life in the ongoing educational attainment and later in workplace.

Brown and Taylor (2008) in a paper where they focus their attention on the effect of bullying in childhood on future returns as educational attainments and future earnings in the UK, find that the peculiar predictors of being bullied at the beginning of adolescence (11 years old) are being a boy, having disabilities, unattractive physical appearance, personal traits, and number of school attended. They add another characteristic which from then onwards has been taken into consideration as much as possible: socioeconomic background of the family: here in specific the variable considered was financial problems of the household. Besides, other variables are considered, related to the family where the children live in, the parents' age, their marital status (married, divorced, separated), the level of education of parents. Instances as accidents, drug and sexual abuse, serious illness in the family, are important to understand and compute correlation between children victimization and

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[9] Here, with the term eudaimonia is meant happiness as the purpose of own life.

bullying. Moreover, two other important determinants of victimization felt by children are the potential low income of the family and the perception of do not feeling safe with at least one of the parents (Henningsen, 2009). The identification of the quality in domestic environment and perceived family safety might be important predictor of bullying victimisation and perpetration outside home, as the level of family income level might influence the reduction (when higher) of non-domestic bullying occurrence (Henningsen, 2009; Eriksen et al., 2014; Doidge et al., 2017; Chrisanthou and Vasilakis, 2018).

Indeed, Danish-based work, Henningsen (2009), trying to identify correlations between bullying, childhood experiences and quality of life, finds out that the two main determinants of child victimization are low family income and not feeling safe with at least one parent. Besides, he identifies other crucial factors correlates with child-victimization, such as: parental education achieved, divorce among the couple, serious illness cases in the family, accidents, foster care, drug abuse, and sexual assault.

Ttofi et al. (2014) observe that an important predictor of family support, and so a counter of bullying victimisation, is the household income. On the other hand, Carbone-Lopez et al. (2010) and Doidge et al. (2017) observed that non-domestic victimization, in particular school violence, is linkable to lower lever of income in the victims and bullies' families. This might be due to the fact that parents in these households might suffer by stress which lead to reduce their propensity to spend time with their children, to focus on their education, to disincentive the will to raise and take care of theme, hence lower income parents might be forced to drop the attention on monitoring their children because they are struggling to give them enough resources for their daily needs. Again, analysing the similarities and the differences in the victimization of pupils in primary school in South England and in Germany, Wolke et al. (2001) observe that victimization and disadvantageous low socioeconomic status are positively correlate.

The environment of household might impact significantly on feelings of the children which live in it and might have repercussions on their relationships and behaviours outside the family level, as at school. For instance, in Carlson (2000), children which

are exposed to domestic violence, witness to any sort of abuse and suffer from it, exhibit anger, aggression, and difficulty to create bonds with peers. A series of other researches attached to this first evidence, express that pupils belonging to violent domestic environment recorded scares but statistically significant results in school test (Carrell & Hoekstra, January 2010). Moreover, linked to lower academic scores, young students exposed to domestic adverse experiences develop disruptive peer behaviour among their peer, which lead to negative effects on both individual achievement and overall peer group attainments increasing the aggregate level of misbehaviour (Cook and Ludwig, 2005; Carrell and Hoerkestra, 2010). These spillovers are driven in particular by troubled pupils from family with low-income threshold (Carrell & Hoekstra, January 2010). The socioeconomic background is a potential determinant of misbehaviour at school and potential factor of bullying, where the exposition of children is associated with parents' education level achieved and the household economic participation (Due et al., 2009; Nordhagen et al., 2005, Von Rueden et al, 2006). These researches study with different methods the relationship between exposure to bullying and contextual factors, mainly socioeconomic situation of the family.

Due et al. (2009) implement a cross-national and cross-sectional analysis among adolescence where they observe that it is easier for students belonging to a low socioeconomic status being involved in bullying episodes. Nordhagen et al. (2005) use a different approach to assess the presence of bullying at school among Scandinavian adolescents: parents report towards questionnaire. Here, the low socioeconomic background is indicated by the parents' low educational attainment and scares skill occupation, but also with the lack of material resources and number of parents within the household. Tied to educational and single parenthood gradients of young victimization, another important indicator is parental occupation (Von Rueden et al, 2006; Elgar et al., 2009), where towards cross-sectional among European children and adolescents, they find that parents' status is associated with the general wellbeing of sons and daughters both physical and psychological. Also, these results underscore the higher presence of bullying and the lack of family support, especially in deprived area. In contrast with this last part, there are the evidences proposed by Chaux el al. (2009), which finding an association between the

frequencies of bullying at schools and the settle of schools, proposed that aggressive misbehaviours and bullying victimizations by students was a matter of structural inequality rather than a mere consequence of socioeconomic status. Hence, the presence of bullying victimization might be influenced by the "surrounding social environment" (Due et al., 2009).

In a more recent study, Chrysanthou and Vasilakis (2019) claim the same findings, sustaining that economic disadvantages, as scarce family income associated to poor regional income per capita, are risk factor for being involved in bullying episodes. The literature observes that the incidence of bullying episodes is peculiar in schools settled in deprived areas, where at the same time students that attend these kinds of institutes belong to families with lower income threshold. Indeed, household income is a clear predictor of family support and defence from external bullying episodes, higher the family level of poverty, higher it is the victimization level by children (Carbone-Lopez, 2010; Eriksen et al., 2014). Tippett and D. Wolke (2014) introduce another aspect for the potential higher odds to be subjected to bullying victimization: violent factors which take place at home. Indeed, abuse and perpetrated violence influence the capacity of children to build strong peer relationships.

In Chrisanthou and Vasilakis' (2020) work based on UK individuals between 10 to 15-year olds pupils, they single out what the previous researches underscore that preadolescents and adolescents from healthier families tend to report higher level of life satisfaction and low level of emotional symptoms with respect to their peer from poorer households. Despite these general considerations, they observe that in the wealthiest area of England, where the gross value added per capita is considerable high, hence in the regions of London, South East, South West, and East of England, the level of economic stability significantly lowers the level of life satisfaction recorded by the youngers, and at the same time the emotional symptoms are linked to general episodes of bullying victimization. They claim that this important reduction of life satisfaction among early adolescents in these wealthier areas it might be linked to the longer working hours of their parents which might lead to higher stress bond to poor parental skills. This finding is comparable to their previous work (Chrisanthou and Vasilakis, 2018) where they associate violence in bullying episodes to a reduction in life satisfaction among early adolescents.

In a study about relationship between individual characteristics of adolescents and the multi-context of bullying toward an ecological perspective, one of the main evidences identified by Barboza et al. (2009) which is associated to an increase in youth bullying is the low attention and poor expectations that in particular parents have for the school performances of their children. At the same time, the absence of parental support felt by the young members of the family, and the negative interaction by parents with their children might generate bullying perpetration and victimization outside the family environment. Moreover, Spriggs et al. (2008) underscore how much might be a prevent factor of bullying victimization the presence of both parents in the household, especially for white-ethnic children, and the level of communication between the two components of the household.

1.5 Truancy, properties and future outcomes

Truancy is another type of misbehaviour with potential negative repercussions in the long run, such as bullying victimisation and bullying perpetration, which might underscore deprived socioeconomic situations related to the families where boys and girls belong to. Defining truancy towards economic literature and psychological works on determinants of childhood and adolescence experiences on adulthood, Cunningham (2005) refers to it as the school absence adopted by a student without the permission or the knowledge by the corresponding parents. On the other hand, Oehme & Franzke (2002) and Ricking and Heinz (1997) describe truancy as a specific school refusal behaviour or school absenteeism linked to the concept of school tiredness and school phobia (for a deep explanation of similarities and differences among these terms, see Kearney, 2003) however it is a misbehaviour adopted by young people, which need to be understood. For Virtanen et al. (2014), "truancy is a is a cause of public concern". Bond (2004) identifies three main components of this misbehaviour: truancy, condoned absenteeism, and school refusal, which might develop in school dropout. The clear difference between these three components is that in the last two categories parents are aware about the behaviour of the children, specifically for condoned absenteeism they tend to justify it for several reasons (for pity or for necessity), while for school refusal they try to prevent it, but in vain

(Kearney, 2007). Our attention will focus on the first aspect, truancy, which is describe by English Law as an unauthorised absence from school in primary and secondary school. In fact, in United Kingdom for students between 5 and 16 a-year olds, it is mandatory to attend lectures and receive a satisfactory level of full-time education. In a research based on the PISA 2012 data implemented by OECD on 24 European countries with the purpose to observe the intensity and frequency of truancy among adolescents, here 15-year olds maximum, two weeks before PISA tests, Keppens & Spruyt (2015) observe that the United Kingdom recorded a truancy rate around 12% of the interviewees, and despite it is not the highest rate observed in this study, it is above the average frequency observed in all the countries considered. Hence, truancy is a misbehaviour which occur frequently among younger pupils. Understanding the determinants and the long-term outcomes of this kind of absenteeism from school are the purpose of several studies, which we expose in the following part. The information we are going to face, give us the initial pattern of potential variables we can adopt in the implementation of our models.

Baker et al. (2001) expose three categories which are correlated to truancy. These associations cover different aspects of youngers' daily life: family factors, economic influence, and school factors and student variables. Family factors include "lack of guidance or parental supervision, domestic violence, poverty, drug or alcohol abuse in the home, lack of awareness of attendance laws, and differing attitudes toward education" (Baker et al., 2001). For instance to face in the first place this problem, in the UK was introduced the Crime and Disorder Act 1998 and the Anti-Social Behaviour Act 2003 (Home Office, 2003), which oblige, toward a parenting-order issued by the specific court after previous notification by the local authorities, defaulting parents to guarantee the compulsory education to their children, escorting them at school, ensuring in this way school attendance.

Besides this juridical remedy, Hijaz and Naqvi (2006) analysing the factor which might affect the performances of students at school, observed an association between attendances of pupils and the role of different domestic factors such as mothers age, mothers education, family income. The U.S. Department of Justice (2001) exposes other main family factors which might predict truancy among young people: lack of guidance or parental supervision neglecting their children needs, domestic violence

both among the partner and among sons and daughters, drug or alcohol abuse in the household which is strictly linked to the level of poverty of the family, the lack of awareness of mandatory attendance at school laws and related potential sanctions, and low attitude and interest in the education progresses of children. Another important family factor is underscored by Tittle & Meier (1990) and Ballantine and Hammerick (2009), where they sustain that living in an household with one single parent, due to divorce, separation or other reasons, record higher rates of dropout alongside lower grades and tests scores among children compared to the ones which live in households with two parents (see also Farrington 1996; Vaughn, Maynard, Salas-Wright, Perron, & Abdon, 2013). At the same time, Achilles et al. (2007) in a study among children and early-adolescents with behavioural problems, argues that exclusion and absence from school is more common for pupils without both parents. Bond et al. (1994) reported that might happen that the parents themselves withdraw the children from school or do not enrol them during the mandatory years for several reasons, such as employing them in economic family activities or force them to find job occupation.

Moreover, other parental characteristics such as educational level and the amount of time of absence for the major part of the days, which lead to a poor involvement in the life dynamics of their sons and daughters, affect the propensity of children of playing truant and avoid class lectures (Tittle & Meier, 1990; Ballantine and Hammerick, 2009) in accordance with what expressed by the U.S. Department of Justice (2001).

Considering these two aspects, the presence of both parents inside the household and their attention on the children lifetime, Miller and Plant (1999) observed how these variables work in the UK context, among teenagers around 15-year olds, with a self-fulfilment questionnaire. Despite other things, they try to explain how truancy and school performances vary considering family variables such as family structure, that is the comparison between intact families and families with one single parent, the level of parental education achieved, perceived level of parental caring, and the frequency of parental control. They observed that family structure and parental education affect both truancy and school performance, while parental caring and parental control affect only school performances.

The other main important category correlated with truancy expressed by Baker et al. (2001) is the economic influence, which it is a wide definition that interest different aspects of the contextual background of people considered. Financial hardship of the household, the belonging social class and the corresponding geographical area, are identified causes of truancy among young individuals (Ubogu, 2004). Substantially, low economic status of the household is demonstrated to be correlated with truancy and in the second place with poor school performances as well (Synder, Tan, & Hoffman, 2005).

Farrington (1996) observes some important evidences which link the socioeconomic disadvantage background of individuals to their propensity to be involved in truancy. Indeed, comparing non-truant pupils with truant ones, he underscores that the truants belong to low income level families, plus they have been separated form a parent since age 8 to 10 and the respective father reported unemployment status during their early adolescence (12 to 14-year olds).

Achilles, McLaughlin, & Croninger (Spring 2007) observe that students from urban areas and schools tend to be more prone in take part at episodes of truancy with respect to the counterparts in rural area. Belfanz & Byrnes (2012) underscore that these absences from school have higher rate reports among youth from poor urban areas. On contrary, the poor young individuals from rural areas report lesser truancy rates, this it might be due to the less exposure to crime and deprivation in these areas. Klein, Sosu, & Dare (2020) include the level of neighborhood deprivation in the predicotrs of overall absenteeism, in Scotland context, moreover they observed that rented housing generate an interesting association with truancy.

Linked to the socioeconomic context and to specific characteristics of students, specific personal traits and ethnicity might be predictor factors among young individuals (Vaughn, Maynard, Salas-Wright, Perron, & Abdon, 2013). Considering the ethnicity of the students, the minority groups recorded higher rates of truancy than white students (Bell, Rosén, & Dynlacht, 1994)

Bell, Rosén, & Dynlacht (1994) found that for boys which play truant, the perception of school experience is more negative with respect to girls, and this is tied to the fact that higher rates of truancy are recorded for male students than female (Attwood & Croll, Truancy in Secondary School Pupil: Prevalence, Trajectories and Pupil

Perspectives, 2006). Other important aspect related to school and pupils' characteristics are their increasing tendency, for both genders, in "avoidance behaviour" which lead to highest rate of truancy across the years.

Students with low self-esteem and low academic self-concept, so with weak non-cognitive skills, with less competent social relations, which reports phobia and anxiety tend to play truant more frequently than peers with stronger non-cognitive skills (Attwood & Croll, Truancy and Well-Being Among Secondary School Pupils in England, 2015; Vaughn, Maynard, Salas-Wright, Perron, & Abdon, 2013).

Elevated episodes of truancy might lead the risk to become a chronic behaviour and generate harsh outcomes during academic life and in the future. Truancy works as the cause and the effect of all the disturbances exposed above, generating a sort of circular relationship with them Dahl (2016). Truancy is a social misbehaviour that may lead to a developmental pathway to increasing delinquency or deprivation, followed by socioeconomic and behavioural problems in the adulthood.

In the first place, truants record modest or even insufficient academic achievement rates with respect to the non-truants, which can lead to higher propensity to dropout the school once for all (Strand & Lovrich, 2014), and consequently to have restricted job opportunities leading to higher rate of unemployment periods. Hence, truancy is "an important marker of functional impairment in adolescence" (Attwood, 2015).

Adults who played truant during adolescence report lower levels both in health and in mental health (Hibbett and Fogelman 1990), higher rate of incarceration (Bell, Rosén, & Dynlacht, 1994). Besides they register lower paying job (Attwood & Croll, Truancy and Well-Being Among Secondary School Pupils in England, 2015) or job instability (Farrington, 1996) with respect to adults who did not played truant during schooling ages, following that they are more exposed to the probability to live in poverty (Bell, Rosén, & Dynlacht, 1994), reporting to poor life satisfaction (Attwood & Croll, Truancy and Well-Being Among Secondary School Pupils in England, 2015). One other important thing, is that these kind of adults reliance on welfare support, and linked to this evidence, Collingwood, Mazerolle, & Cardwell (2019) studied how truancy might affect welfare dynamics towards lifestages, and differentiating in two pathways people who used to be truants and who is not, observed that in the truant group the request for financial assistance from government funds were higher that the

adults non-truants. Kearney C. A., An Interdisciplinary Model of School Absenteeism (2008) exposes a potential pathway with these characteristics[10]. Alongside, with the purpose to understand how can proceed the future life of people who play truant, Hibbett, A., & Fogelman, K. (1990) analysis the life paths of a survey of people born in the 1958 in four steps: 7, 11, 16, 23-year olds, comparing the outcomes at the final age between truants and non-truants. Their findings were in line with the aspect previous shown: elevated level of truancy, might lead to chronic absenteeism, which might culminate with school dropout, following with economic deprivation, partial or complete detachment from social and occupational life, neglecting even martial life. Substantially, they report a significant increase of depression level among adults once-truants with respect to non-truants. Vaughn, Salas-Wright, & Maynard (2013) found the same evidences in their more recent work about mental health and lower propensity to find a job by former truants.

In conclusion, we comprehended that truancy is not a student misbehaviour which is linked only with school attendance, and it is not a mere decision of students. This choice to be absent from school, with different intensity and frequency, is the consequences of several factors related to the student's life, emotional pattern, and socioeconomic context where he/she belong to. The complexity behind this juvenile phenomenon brings to multifaceted consequences, supported by scientific evidences, hence it is important to spend time to get deep into these original factors which might help to draw better response to face and to ease their frequency, that is their effects.

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[10] "In one potential pathway, a young child with an anxious or difficult temperament is placed in a disengaged family or educational system that does not monitor or value achievement and attendance. During elementary school, this situation could lead to academic problems, family conflict, inadequate attention to the child's curricular needs, and child anxiety and depression. Upon entry into middle school, where many cases of problematic absenteeism begin, other risk factors could be introduced. These include association with deviant peers, pursuit of tangible rewards outside of school, parent disengagement, and initial referral to a juvenile justice system. Upon entry into high school, episodes of absenteeism could increase substantially following academic failure, opportunities for outside employment, entry into gang-related activity, drug use, or pregnancy." (Kearney, 2008).

1.6 Conclusion and research questions

Bullying victimisation, bullying perpetration, and truancy in youth age report future adverse outcomes for people and the society as a whole. For these reason it is important to maintain the focus on these negative social phenomena, because the right implementations of policies in young age might produce virtuous escalation in different stages of adult life, producing efficiencies and significant returns on human skill capital formations, avoiding anti-social and submissive mis-behaviour by individuals which affect them and surrounding society.

Important attention has been dedicated to understanding the determinant factors of bullying victimisation, bullying perpetration, and truancy among young generations. We notice that these misbehaviours have significant and complementary outcomes, with similar determinant sources in the emotional, socioeconomic, domestic, and educational levels. However, we notice that the family environment perception from younger point of view was barely considered in the research settings, especially in the estimations of truancy. With the perceived family climate we intend a set of variables which cover the frequency of talking about things that matters with the respective parents, the frequency of having arguments or even quarrels with them, the perceived family, and in particular parental, interest on school progresses, and the family support felt by young people. To sum up, we intend variables that gathered might give to the researchers the likelihood of daily living in a specific household, where the estimation is evaluated by the younger members.

Understanding how the family climate is perceived by children, and how this perception can vary depending on the social class to which they belong, can be an important predictor that allows us to understand how the subjective evaluations by children can then influence their behaviour outside the family environment, and whether the intensity of these events varies according to the age of the children and the social class to which they belong, through the level of income of corresponding parents. Together with the variables of perception of the family climate, we will also adopt different control variables, taking a cue from the previous literature. The gender and ethnicity of the young people interviewed, the employment status of their parents,

their maximum level of education and their age group, then passing through the variables of residence and status, within the UK, and which king of housing tenure.

The purpose of this research is therefore to evaluate what are the characteristics that can best be labelled as potential predictors of violence at school and absenteeism, studying the presence of socioeconomic gradients within the UK population. To do this, despite the statistics about prevalence of bullying and truancy episodes are not so serious compared to other developed countries (Due, et al., May 2009; Elgar, Craig, Boyce, Morgan, & Vella-Zarb, 2009; Elgar, et al., 2013; Klein, Sosu, & Dare, 2020), a considerable number of young people, around 1.5 milions, are involved in bullying episodes and around 12% of young people play truant (Dith the Label, November 2019; Klein, Sosu, & Dare, 2020). Moreover, we focus on this national area in particular, because we adopt the Understanding Society dataset, which gather informatiom on the last ten years from more than 4000 young people under age 16, their parents and the belonging households about school and relational dimensions, which permit us to study these social dynamics under different aspects. We will see its main characteristcs and in particular which data we will take into account in the next chapter.

In the following sections we will expose the variables used to generate our model. These cover both personal characteristics presented in the youth questionnaire, such as age, gender, ethnicity, and demographic and contextual aspects such as the place of residence among the various states of the UK and the division between rural and urban areas, so that we can observe whether what has been developed in this research is in line with the literature that considers the place of residence an important component for the determination of potential risk areas compared to others (Carbone-Lopez et al.,2010; Chrysanthou and Vasilakis, 2019). Another set of variables deriving from 10 to 15-year olds interviewees are referred to their perception of the family environment, reporting here both the perceived level of parents' interest on their school performance, perceived general family support, frequency of conversations and arguments/quarrels with parents. In this way, we generate peculiar instruments which might measure the domestic environment where the young respondents live in, in accordance with the observations exposed in Smith et al. (2004) and Henningsen (2009) on the necessity to control by the thresholds attention of

parents in the various aspects of their children life. This is the reason why we generate perceived variables on parents' relationships from youngers' perspective. Alongside these variables, in accordance with the evidences presented in Brown and Taylor (2008) work, we analyse parents' characteristics, through their presence within the family unit[11], their educational qualifications, current occupation, and their age. Finally, referring to the entire belonging household, the creation of variables related to housing contracts and, above all, income classification levels of households adjusted for the number of members themselves, complete our general framework. Before proceeding with the specific exposition of the variables, bearing in mind the progresses achieved in this branch of health economics across the last decades, we expose the following three research questions we will try to answer in this dissertation, which might produce any sort of contribution in this field or might be an incentive for further studies:

1) If and how are observed any socioeconomic and demographic gradients in preadolescents and adolescents' background, which of them might explain a predisposition to be bullied or be a bully, or to play truant by young students related to contextual factors.

2) To what extent does the children's perception of an adverse domestic environment affect their school behaviour through episodes of violence and truancy.

3) How the interactions between income level and family environment vary according to the group they belong to and how these interactions modify the incidence on absenteeism and bullying

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[11] Here, in contrast to Brown and Taylor (2008) research, we do not control by the martial status of parents (married/separated/divorced), but we simply control for the presence of both within the household.

Chapter II – Data and Methodology

2.1 A Brief Introduction to the Understanding Society

In our analysis we use both quantitative and qualitative data from five waves of the English longitudinal household panel Understanding Society, henceforth UKHLS, spanning the period between 2009 and 2019. The waves we use are Wave 1 (2009-2011), Wave 3 (2011-2013), Wave 5 (2013-2015), Wave 7 (2015-2017), and Wave 9 (2017-2019). The survey counts approximately 40000 household members form the first wave, then the number of participants decreases for the following sections. It is based on United Kingdom population. In UKHLS there are different types of questionnaire where participants answer voluntary about various aspects of their life. The Individual Questionnaire is the one with more observations and gathers the answers of panel's adult members aged 16 and above and in it there are a brief questionnaire exclusively dedicated to the so-called young adults, people aged between 16 and 21-year olds. The Household Questionnaire is completed by one member of the family which must answer to different aspects of the belonging household socioeconomic context. The Child Questionnaire is dedicated to children between 5 and 10-year olds, which only after previous authorization by parents or caretakers, they are allowed to fill it. In the end, the Youth Questionnaire is a self-completion survey for middle school and early secondary school boys and girls, from 10 to 15-year olds. Their corresponding parents, which is/are present in the Individual Questionnaire, might be biological/stepparents/into foster care.

These are the main questionnaires in this longitudinal survey, and we focus the attention on Individual Questionnaire, Household Questionnaire and Youth Questionnaire, dropping the Child Questionnaire. Considering the purpose of our study is to understand the determinants of truancy, bullying victimization, bullying perpetrations among preadolescents and adolescents in the age range between 10-15[12] , the principal survey on which we focus our attention is the latter: Youth

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[12] We have already seen that in the corresponding literature, preadolescence is until 11-year olds and adolescence is from 12 to 18-year olds.

Questionnaire. The other two samples to which we refer and from which we extrapolate the variables we need for the continuation of our work are Individual Questionnaire and Household Questionnaire.

The Table 2.1 presents the number of observations of our final dataset towards the five waves.

Table 2.1: Number of observations per wave (Wave 1: 2010, Wave 3: 2012, Wave 5: 2014, Wave 7: 2016, Wave 9: 2018).

Year	Freq.	Percentage	Cumulative
2010	4877	25,17	25,17
2012	4415	22,79	47,96
2014	3647	18,82	66,78
2016	3618	18,67	85,46
2018	2818	14,54	100
Total	19375	100.00.00	-

Note: Note: Data corresponding to appended Wave 1, Wave 3, Wave 5, Wave 7, Wave 9. Source: UKHLS dataset.

At this point, we assist to a decreasing number of observations towards the years: in fact, observations diminish from initial[13] 4877 in Wave 1, to 4415 in Wave 3, then 3647 in Wave 5, 3618 in Wave 7, and finally to 2818 in Wave 9, for a total of 19375 observations.

In the following parts we are going to expose for each dataset taken into account all the variables considered in our models and their principal properties. In the last section of this Second part, we expose the method implemented for our models.

2.2 Youth Questionnaire: Variables and Properties

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[13] The term "initial" is due to the fact that along the construction of the datasets for each wave, we delete observations for specific reasons.

2.2.1 Dependent Variables

Building a dataset requires different steps to be fulfilled. In the first place is essential to have clear in mind which dependent variables we want to consider, why we want them and what are their main characteristics. In our models we decide to study three different variables: truancy among students, aggregate victimization bullying, aggregate perpetrated bullying. Before we expose how we generate the three variables, the following Table 2.1 shown the taxonomy and the definitions of the three dependent variables:

The original variable of truancy is formed from the replay to the question "whether has you ever played truant" and the possible answers were "yes", "no", or missing. From this question we create a binary variable (which in the final models is labelled as Truancy), omitting the missing variables, where the value 1 corresponds to have played truant at school at least one time, while zero is negative answer. In Table 2.6, at the end of this Chapter II, are expose the descriptive statistics of all the variables. Here we can observe that the mean of truancy variable is equal to 0.08, hence less than one out ten young interviewee reported truancy at least one time in the last six months.

The aggregate passive/victimization bullying (which in the final models is labelled as PassBull) is a binary variable originated from two different variables gathered together, which express a twofold way of being bullied physically or in other way, and in which frequency. These variables are present just in the odd waves of the longitudinal panel, this is the reason why we pick up the odd waves from UKHLS. The two initial variables describe the intensity of being assaulted by physical bullying and other ways bullying episodes. These types of bullying exposed derived from the following questions: "How often do you get physically bullied at school, for example getting pushed around, hit or threatened, or having belongings stolen?" and "How often do you get bullied in other ways at school such as getting called names, getting left out of games, or having nasty stories spread about you on purpose?". In both sentences there are four possible answers, which at the beginning might help us to understand the level of intimidation felt by the young respondents: never; not much

(1-3 times in the last 6 month); quite a lot (more than 4 times in the last 6 months); a lot (a few times every week).

As for truancy, also aggregate passive/victimization bullying is a binary variable, and it is equal to 1 for more frequent episodes of bullying recorded ("more than 4 times in the last 6 months" and "a few times every week"). Otherwise the replies are labelled with zero value.

In Table 2.6, bullying victimization reports a mean corresponds to 33.80 %, which underscore that at least one person out three suffered from adverse bullying episodes in the last half a year.

The second kind of bullying is the active/perpetrating one (which in the final models is labelled as ActBull). Firstly, it is composed by two different components: physical bullying committed, and other-ways bullying committed. The first one is based on this question: "Do you physically bully other children at school by hitting or pushing them around, threatening or stealing their things?", while the second one is generated from the following sentence: "Do you physically bully other children in other ways at school such as calling them names, leaving them out of games or spreading nasty stories about them on purpose?". As for truancy and aggregate passive/victimization bullying, active/perpetrating bullying is a binary variable, and it is equal to 1 for more frequent episodes of bullying recorded ("more than 4 times in the last 6 months" and "a few times every week") and zero otherwise.

Table 2.6 shows a mean close to 0.10 for bullying perpetration episodes, hence one child out ten might create disruptive situation to his/her peer.

Before the clarification of the explanatory variables, we add the Table 2.2 which explains the degree of correlation between the three dependent variables implemented. It is interesting to observe that the two aggregate bullying variables share the highest correlation among the three, even if it is not so higher, indeed $r = 0.2666$. besides, the active/perpetrating bullying variables record a much higher correlation with truancy variable with respect to passive/victimisation bullying variable ($r = 0.1358$ compared to $r = 0.0436$).

Table 2.2: Correlations among the dependent dummy variables.

	Truancy	PassBull	ActBull
Truancy	1,0000	0,0436	0,1358
PassBull	0,0436	1,0000	0,2666
ActBull	0,1358	0,2666	1,0000

Note: Data corresponding to appended Wave 1, Wave 3, Wave 5, Wave 7, Wave 9. Source: UKHLS dataset.

2.2.2 Explanatory Variables

The core of our final dataset is formed by all the explanatory variables which can give us a clear comprehension of the students' background. The variables we use from the Youth Questionnaire cover two different aspects of the interviewees' context and background: the first set of variables are related to the general information, which form the baseline of our analysis, about individuals like their gender, age, ethnicity, residence living area among the four countries which form the United Kingdom, a specification between urban and rural area, and the presence of siblings within the household. The other component we consider in the model is the perceived family environment felt by the interviewees. This second set of variables will be implemented in a second stage of our study. To choose these variables, we based our decision on the previous literature developed from the same longitudinal panel (Chrisanthou and Vasilakis, 2018; Chrisanthou and Vasilakis, 2020), so we take into account self-estimation of perceived family interest in school performances, perceived family support in daily life, the confidence level with parents on talking about things that matter, and the conflict level with them, that is how frequently they have arguments or quarrels with mother and father. An important first consideration for these last two variables is that firstly we considered them in a separated way, so we study apart the

confidence level and conflict level with mother and with father, then in a second part we analyse jointly their impact on dependent variables.

Firstly, we explain temporal variable which we generate for each wave without previous data associated. The models we implement adopt a full set of wave dummies, one per wave, where the precise value for each is the mean year of the interval (ex. Wave 1 covers the range 2009-2011, hence the corresponding time dummy is equal to 2010).

Proceeding step by step, we start now to present the general information about our panel of 10 to 15-year olds students. In the first place it is important to distinguish the interviewee by the personal gender, doing so we might understand if there are significant differences in bullying and truancy dependent variables with respect to the gender. If so, it is an important first distinction which could be used in future targeted prevention programs. Gender variable (which in the final models is labelled as Male) is binary and it is equal to 1 if the respondent is a male student, while if the interviewee is female, the value is zero. In the following Recap Table 2.6, we can observe that the mean value of the variable is approximately equal to 0.5, this stands that the observations are close to be half boys and half girls. Hence, we do not have any sort of gender imbalanced among the young participants of the survey.

In the following part of the study we analysis the sample members' age. YoungAge is the label we use in the following models and indicates the age of interviewees at the time they were subjected to the questionnaire. This variable works alongside another age variable: a second-degree polynomial variable, expressed as YoungAge2 in the following models. This second age variable is useful in our computations because it seized risk variations of playing truant and suffer from bullying episodes or perpetrating despite of the temporal effects deduced by wave dummies.

Following the path to understand which individual baseline characteristics are important determinant of bullying victimization, bullying perpetration, or truancy, it is fundamental to add to our model the ethnicity component of the respondent. In the literature, this variable is already studied as important predictor, hence it is useful for us control the dependent variables toward this component. In Understanding Society Youth Questionnaire are exposed several different types of ethnic groups where students might belong to. The question is strict "which of the following groups do you

think you belong to?", and the available answers lead to 21 different ethnic groups. With the purpose to simplify our comprehension of this variable, to generate groups with an important number of observations, and keeping into account the evidences of the regarding specific literature, we generate a binary variable (which in the final models is labelled as White) where its values is 1 if the sample's member is white, so belonging to one of the following ethnic groups: English, British, Welsh, Scottish, Northern Irish, or Irish. The value is zero for every other ethnic group taken into account such as mixed background, Asian, Caribbean, African, Arab, or others. As shown in the Table 2.6, the majority of the interviewees, 63.16%, belongs to the white ethnic group. A further observation is that, considering that the non-white group is 36.84% of the sample, factoring this variable in other different ethnic groups, might bring to small groups useless for our purpose.

For the residence variables we split the original one which asks to interviewees their country of residence. Considering that the answers are England, Wales, Scotland, Northern Ireland, we generate four dummies variables one for each country (which in the final models are respectively labelled as ResEng, ResWales, ResScot, ResNorthIr), where 1 is equal to the respective country and zero if the respondent live in one of the other countries. Taking a look on Table 2.6, we can comprehend the distribution of young interviewees along the countries of United Kingdom: the majority of the respondents are from England, 81.20%, followed by the inhabitants of Scotland, 7.72%, then Norther Ireland recidences, 5.98%, and finally welshes with 5.06%. From this framework we can observe if there are significant residential differences associated with main areas of the United Kingdom. Associated with the country of residence, we add the binary variable which shed a light on the potential differences in urban and rural area (which in the final models is labelled as Urban), which is equal to 1 if the individual is located in an urban area and 0 otherwise. Table 2.6 shows that the 78.10% of participants live in urban areas. This characteristic is useful compared and integrated with the country of residence, so we can observe if the location environment might be an important predictor of bullying or truancy.

The final background variable from Youth Questionnaire gives as the notion if the sample's member has in his/her household at least one sibling, which could be biological, step, or adopted. Dropping the missing variables, our variable (which in

the final models is labelled as Siblings) is equal to 1 if in the household is recorded the presence of at least one sibling, and obviously it is valued zero if there are no siblings in the same family. From Table 2.6, we can understand that less than 14,0% of the young participants of the survey are an only child, the others (more than 86,0%) record at least on sibling.

These previous variables, together with the variables in the following section from the Individual Questionnaire and the Household Questionnaire, generate the baseline model for our research. In fact, they explain the socio-economic and demographic characteristics of the preadolescents and adolescents involved in this study.

However, from these questionnaires filled by 10 to 15-year olds boys and girls, we now are going to expose another set of variables which we will use in the developing of our research, integrating the baseline model. The following control variables are fundamental to better understand the family environment, the degrees of relationship between youngers and their parents/stepparents/adopting parents. In the examination of the literature review, we have already expressed the importance to consider in the research the dynamics that happen within the domestic context because they can lead, in the first place, to important consequences on the children behaviour which, as a waterfall effect, might influence external peer relationships and educational attainments. After that, we now proceed to expose our set of domestic[14] environmental variables. These are reported biennially in the self-completion questionnaires (such as bullying variables), and include perceived parents' interest in school progresses, perceived family support, mother and father conversation frequencies and jointly parental frequencies, and mother and father argument/quarrel frequencies and jointly parental frequencies.

Perceived parents' interest in school progress (which in the final models is labelled as FamIntSchool) variables is generated from the question "Do you feel supported by your family, that is the people who live with you?". The binary values that this variable expresses are equal to 1 if the answer is "I feel supported by my family in most or all the things I do", while it is zero if the answers are "I feel supported in some of the things I do" or "I do not feel supported". The mean of this dummy variable is

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[14] To avoid fallacious interpretations, in this part we refer to the family context as "domestic environment", we do not use the phrase "household" because of the third questionnaire previously mentioned.

0.8232, hence the majority of the sample report that they perceived family interests in their school progresses.

Of course, here as onwards for the other variables, we omitted the missing values from the generation of the domestic environmental variables.

Perceived family support (which in the final models is labelled as FamSupport) is a binary variable derived form the question "Do you feel supported by your family, that is the people who live with you?" and has value 1 if the answer is "I feel supported by my family in most or all of the things I do" and 0 otherwise ("I feel supported by my family in some of the things I do" or "I do not feel supported by my family in the things I do"). Table 2.6 underscore that the 80.00% of the respondents feel supported by their family.

The variables about the frequencies of conversations with mother (which in the final models is labelled as TalkMother) and father (which in the final models is labelled as TalkFather) have the same structure: their values depend on the respective questions "How often do you talk to your mother, about things that matter to you?" and "How often do you talk to your father, about things that matter to you?". Both are equal to 1 if the answers are "most days", "More than once a week", "Less than once a week", and are zero when the respondent sustains that "Hardly ever" or "Don't have a mother"/"Do not have a father".

The argument/quarrel frequencies with mother (ArgMother) and with father (ArgFather) derived from the questions "Most children have occasional quarrels with their parents. How often do you quarrel with your mother?" and "How often do you quarrel with your father?". Their values are similar to the talking ones, that is they are equal to 1 when answers are "Most days", "More than once a week", "Less than once a week", otherwise the value of the two variables are zero (when the answer is "Hardly ever" or "Don't have a mother"/"Don't have a father").

In the end, the last two variables derived from the Youth Questionnaire are based from the last two typologies exposed. In our opinion, it is useful to observe the frequencies of talking and having arguments/quarrels with parents jointly, and not just separated one parent from the other. Hence, we generated two more variables (TalkParents and ArgParents). The frequencies of talking with parents is equal to 1 if the interviewee records a conversation with his/her mother/father at least "less than once a week",

vice versa its value is zero. The same values are generated in the frequencies of argument/quarrel variables: it is equal to 1 if the sample's member was involved in one episode less than a week, and zero otherwise.

We can observe that the 82.32% of the young interviewees believe that their parents are interested in their school progresses, and that around 80% feel supported by mothers and fathers. Interesting is the comparison of the frequencies of conversations with parents: it is recorded that preadolescents and adolescents are more prone to talk about things that matter with mother (81.93%) rather than father (60.77%). However, the 83.24% of them have conversations with at least one parent. Important to keep in consideration is the percentage of arguments recorded between youngers and fathers, close to 50.0% (precisely 48.83%). Arguments or quarrels with the mothers drop to a 35.06%. The association between the two variable brings to a 54.31% of frequency for young people to be involved in arguments or quarrels with at least one parent.

In conclusion of this part, these are the variables we derived from the Youth Questionnaire. They are important to understand the potential determinants and associations between the two declinations of bullying and the contextual characteristics of the respondents. However, it is worthy to expose briefly now, even though in the Third Part of these research we will face it in a complete way, one problem of the last set of variables. It is important to bear in mind that these self-assessment interviews are subjective and personal considerations valuated exclusively by the participants, their interpretations and feelings. Nevertheless, these questionnaires are the only way we have to record the domestic environments, and in particular how it is felt by the young members. This is the pivotal point of our research, understanding how personal perceptions of household bond lead to adverse behaviours outside it.

2.2.3 Individual Questionnaire: Variables and their Properties

In this questionnaire we observe the characteristics of parents related to the preadolescents and adolescent of the Youth Questionnaire. Here, we analyse which parental properties may be useful for the proceeding of the research and why. In the First Part of this study we overview on the principal factors which might affect the

develop skills in early stages of life, and we comprehend how it is important the family factor, the parents education, if they are working or not (Ttofi et al, 2014). For these reasons, in this dataset we decide to pick the variables such as the education level of the parents, if they are employed at the time of the interview or not, if in the household there are both parents and, finally, the respective age of the parents/stepparents/adopting parents/caretakers.

Checking our model for the presence of both parents within the household can be very significant in understanding potential predictors of bullying and truancy. Hence, we start our discussion on the values from Individual Questionnaire with the binary variable related to the presence of both parents in the preadolescents/adolescents' families, in the model this variable corresponds to the label BothParents. After merging the three datasets, this generated variable is equal to one if a specific young interviewee has a natural/step/adoptive mother and at the same time a natural/step/adoptive father. Otherwise the value of this variable is zero, even though there is one parent in the household. Considering the contemporaneous presence of mother and father in the same household, we can understand if the presence of both parents has significant impact on children outcomes. In this way, we can understand at which extent this variable might affect the consequences of bullying and truancy of the children. Tied to this information, we add other parental characteristics which together can help us to comprehend the mother and father's impact children behaviours.

The first parental characteristic we generate is related to the highest qualification level reached. This variable is proposed each year in the questionnaire to include every recent educational achievement by the existing members in the panel and the new entrants. The variable presents seventeen different educational titles, in this way we break this information down into four different categories: college or university degree; a-level or higher education diploma below college; gcse-o level (the general certification of secondary school); or none of the previous certifications. Starting from this division into categories, we build the variable that we will then need in the final models. The control variable for the level of education is binary (which in the final models is labelled as EduParents) that is worth 1 if at least one parent reaches the diploma certification or greater degrees, while zero for gcse-o level or do not report

anything. The 41.06% of the families report at least one parents achieve a secondary diploma or further certifications.

From educational level, we now focus our attention on the employment status of parents. These two variables are considered in an aggregate way, so there are no distinctions between parents, in doing so we face a twofold necessity: to underline that just one parents' educational level and employment status might affect children behaviour, and to counter any potential problem of misreports by one family members.

As educational variable, also employment status variable is dichotomic (which in the final models is labelled as EmplParents). It is based on the values form the related question about the current economic activity of the respondent: "which of these [categories] describes your current employment situation?". The answer foresees twelve different possible job categories, and in the creation of our binary variable it gets value 1 if the reply is "self-employed" or "paid employment", while it is zero for the remaining replies. In two thirds of the families (66.05%) there is at least one employed parent.

Parents' age variables are the only one in this questionnaire we consider separated by mother and father. Differently respect to YoungAge, these variables are not continuous but binary and to generate them we follow the same procedure for mother and father. We started from the question about the current age of mother at the time of the interview, and considering we are interested to understand at what time she has the baby, we subtract to her age the actual age of the corresponding children. In this way we obtain the age of mothers at birth. After that, we split this computed variable in quartiles, as shown in the following Table 2.3, and then we introduce in our model the two variables which describe younger mothers, the ones in the first quartile, and the elder ones in this survey, corresponding to the fourth quartile.

Table 2.3: Mothers' Age Classification.

Mothers' Age Classes	N	Mean	Min	Max	sd	Median
1	4941	22,07	14	25	2,38	22
2	4258	27,6	26	29	1,11	28
3	4638	31,47	30	33	1,13	31
4	4453	36,72	34	50	2,56	36
Total	18290	29,3	14	50	5,76	29

Note: Note: Data corresponding to appended Wave 1, Wave 3, Wave 5, Wave 7, Wave 9.
Source: UKHLS dataset.

We made the same computations for fathers (see Table 2.4), so from their starting parenting age, we obtain the two binary variables corresponding to first quartile and forth quartile.

Table 2.4: Fathers' Age Classification.

Fathers' Age Classes	N	Mean	Min	Max	sd	Median
1	3504	24,73	14	28	3,08	26
2	3324	30,54	29	32	1,1	31
3	3080	34,39	33	36	1,11	34
4	3273	41,04	37	69	4,4	40
Total	13181	29,3	14	69	6,62	32

Note: Note: Data corresponding to appended Wave 1, Wave 3, Wave 5, Wave 7, Wave 9.
Source: UKHLS dataset.

Controlling for these four parents age variables, we are wondering if being parents at young age, here the mother's first quartile median=22 and father's first quartile median=26, or in elder age, mother's fourth quartile median=36 and father's fourth quartile median=40, are significant aspect for the children outcomes.

2.2.4 Household Questionnaire: Variables and their Properties

From this questionnaire, where one member of the household answers to the questions referring to all the members of the family where he or she belongs to, we generate two variables and some interactions with previous variables.

At the baseline model we add two more variables, which are present here in the Household Questionnaire, and give us substantial elements to understand the household level characteristics: housing tenure. This data gathers different kinds of housing occupation from ownership, to private rent, and social rent. We are interested in the first category and in the latter, which are important factors that mark different social backgrounds.

Both are binary variables, the first one includes house owners (which in the final models is labelled as TenOwnership) which is equal to 1 when the panel member answered that his/her family house is owned outright or is owned with a mortgage, and zero otherwise. On the other hand, we have the variable referred to the social renters (which in the final models is labelled as TenSocRenter), which is equal to 1 when the respondents rent their house from the local authorities or from housing associations, if not the value of the variable is zero.

From Table 2.6, we can observe that the 65.29% of the households considered has an own tenure, while the 22.10% live in rental houses.

After the explanation of the contextual characteristics of young participants and their parents or caretakers, now we generate the variables related to the income level of the specific household where the single interviewee belongs to. The starting point is the variable which express the gross household income received by the household the month before the interview. The first step is to delete all the negative data reported, which are non-significant for our purpose, and here we count six answers. Then, since the total observations toward the five waves are more than 16000, we decide that the better way to add this important variable to our model is through the creation of an income classification divided in quartiles. Before proceeding with this operation, we adjust our income data for the members of the respective family adopting a household income conversion factor: the OECD scale of equivalence. In this way we have a better comprehension of the income shared in the household by each family member,

in fact it assigns a weight of 1 to the first person in the household with age equal or over 14-year olds, then a weight of 0.5 for every additional member aged 14 or older, and a weight of 0.3 to each member with age between 0 and 13-year olds, that is for each child.

After that, we obtain the adjusted value of household income toward a simple division between the original value and the modified OECD scale, hence we split the final variable in quartiles.

Table 2.5: Adjusted Gross Income Classification in Quartiles.

Adj Income Classes	N	Mean	Min	Max	sd	Median
1	4002	738,47	0	1007,1	198,8	775,56
2	4002	1229,51	1007,41	1469,9	130,28	1226,54
3	4002	1796,76	1470	2195,93	205,5	1774,87
4	4001	3571,15	2196,37	39578,6	6591,6	2897,07
Total	16007	1833,86	0	395787,6	6,62	1469,9

Note: Note: Data corresponding to appended Wave 1, Wave 3, Wave 5, Wave 7, Wave 9. Source: UKHLS dataset.

The last part of the definition of income variables is the generation of four dummy variables from the adjusted gross income classification (which in the final models are labelled as IncomeQ1; IncomeQ2; IncomeQ3; IncomeQ4), where the numbers expressed in the Table 2.5 stand for the respective quartiles. As happened for country residence dummy variables and for the wave year variables, here we control for the first quartile dummy variable IncomeQ1 toward the implementation of the models.

The last variables we create for the following models are interaction variables between income quartile classification and the perceived domestic environment by the young panels' members, which variables we have already exposed in the previous paragraph. We are going to observe their properties in Chapter III.

2.3 Method of analysis

Now that we have exposed the variables we measured from the different datasets, the next steps are to clarify our data preparation, how we generate the final dataset, which tools and statistical methods we adopted, how we procced with the implementation of the models, justifying the criteria and procedures used.

To investigate the potential determinants of bullying victimization, bullying perpetration, and truancy we implement three different conceptual models. In the first one, there is a baseline of variables that describe the socio-economic and social context of youngers present in the panel. In the second model, the baseline variables are integrated with a set of potential predictors that describe the perceived family environment by the young people interviewed, while in the third specification domestic environmental dummies are interacted with income quartiles to analyse to what extent income classification effects depend on the perceived quality of family life. To implement our analysis, we analyse the relationships between explanatory and dependent variables toward linear probability regressions for each dependent variable and for each model describe above, then we are able to understand which explanatory variables are significant for predicting bullying victimization, bullying perpetration and truancy toward the study of their t-tests likelihood and p-values.

In the first place, our dependent variables are (Truancy), (PassBull), and (ActBull). These are binary variables, we decide to adopt this dichotomy taking a cue from the previous works by G. M. Christanthou, C. Vasilakys (2018; 2019; 2020) where, based on the UKHLS Wave 1, Wave 3, and Wave 5, they study how bullying is determined by different kind of peer violence among students at school and siblings at home, and the impact of bullying on mental health of the victims with respect to the one who does not suffer by the same experiences.

The first stage the model is composed by all the variables characterizing the social background of the young respondents, therefore their gender, their age, the ethnic group they belong to, the country within the UK in which they reside, if the area of residence is urban or rural, and the presence of siblings. In addition, all the properties relating to the parents matched to each child is added. These contain information as the presence of both parents in the family unit or not, information on the maximum

level of study achieved by the family holders up to the time of the interview, specifically if at least one of the parents has obtained a degree certification equal to or higher than the secondary school diploma. Other variables relating to parents are the level of employment, specifically whether at least one of the parents in the family has a permanent job or not. Finally, the ages of both parents are considered as a whole, which are entered separately (if both parents are present) in order to observe if there are significant differences as the age of the mother and father varies. The last variables considered in this baseline model are housing tenure properties, ownership and social renter, which might be important determinant of the household background in which the preadolescents and adolescents lived, and the income classification of the families split in quartiles. All these explicative variables with their taxonomy are expose in the following Table 2.6.

To the baseline of our models we need to add the temporal component (year indicator) that can be a useful control for the evolution of variables across time toward the five waves considered.

In the second stage of our work, we match the baseline model with the perceived variables generated by the young panel's members referring to their subjective evaluation of domestic environment and relationship with parents. Hence, we attached to the previous variables exposed the followings: how young people interviewed feel supported by their parents in school progresses, if they feel supported by their family in the things they do, if they communicate frequently with their parents; if episodes of discussion or mistreatment occur frequently at home. These last two variables are both considered individually for mother and father (where possible), and then considered in aggregate, that is if one of the events occurs at least with one parent with frequency. As for the baseline model, we run linear regression for each dependent variable and focus our attention on the variables which present significant gradients associated with truancy, passive and active bullying.

Lastly, before running regressions in the third stage of our model, we add to the baseline model the perceived domestic environment variables one by one, with their interactions with income classification (as we have already seen, even here we consider either talking and argument/quarrel singularly for mother and father, and in the aggregate form). We decide, in this third stage, to generate one regression for each

explanatory perceived variable and its income interactions omitting all the other variables exposed in the second sets of models (that is, baseline variables integrated with perceived domestic environment variables), avoiding any potential problem derived from the high correlation between the estimations presented here.

A table with an overall of all the statistic description of the variables exposed in Chapter III is presented in the next page, where to each explicative and dependent variable is associated the number of observations, the mean, the minimum and maximum value, the standard error and the corresponding variance, and finally the value at first, second/median, and third quartile.

In the following Chapter III, we expose the evidences between explanatory variables and dependent variables, underscoring their potential incidence or their non-likelihood, and trying to explain why these results are important for this research field with respect to the current theoretical and experimental evidences.

Table 2.6: Recap of the Essential Information for each Dependent Variable and Explanatory Variable.

Variable	Obs	Mean	Std. Dev.	Min	Max
Truancy	19145	0,08	0,27	0	1
PassBull	19375	0,34	0,47	0	1
ActBull	19375	0,1	0,3	0	1
y2010	19375	0,25	0,43	0	1
y2012	19375	0,23	0,42	0	1
y2014	19375	0,19	0,39	0	1
y2016	19375	0,19	0,39	0	1
y2018	19375	0,15	0,35	0	1
IncomeQ1	19263	0,25	0,43	0	1
IncomeQ2	19263	0,25	0,43	0	1
IncomeQ3	19263	0,25	0,43	0	1
IncomeQ4	19263	0,25	0,43	0	1
ResEng	19375	0,81	0,39	0	1
ResWales	19375	0,05	0,22	0	1
ResScot	19375	0,08	0,27	0	1
ResNorthIr	19375	0,06	0,24	0	1
Urban	19375	0,78	0,41	0	1
Male	19375	0,5	0,5	0	1
YoungAge	19375	12,52	1,69	10	16
YoungAge2	19375	159,66	42,47	100	256
White	19375	0,63	0,48	0	1
Siblings	19375	0,87	0,34	0	1
BothParents	19375	0,74	0,44	0	1
EduParents	19375	0,41	0,49	0	1
EmplParents	19375	0,66	0,47	0	1
MotherAgeQ1	19375	0,26	0,44	0	1
MotherAgeQ4	19375	0,23	0,42	0	1
FatherAgeQ1	19375	0,18	0,39	0	1
FatherAgeQ4	19375	0,17	0,37	0	1
TenOwnership	19375	0,65	0,48	0	1
TenSocRenter	19375	0,22	0,42	0	1
FamIntSchool	19061	0,82	0,38	0	1
FamSupport	19151	0,8	0,4	0	1
TalkMother	19109	0,82	0,38	0	1
TalkFather	18996	0,6	0,5	0	1
ArgMother	18903	0,35	0,48	0	1

ArgFather	18986	0,49	0,5	0	1
TalkParents	19276	0,83	0,37	0	1
ArgParents	19273	0,54	0,5	0	1

Note: Note: Data corresponding to appended Wave 1, Wave 3, Wave 5, Wave 7, Wave 9.
Source: UKHLS dataset.

Chapter III – Results and Discussion

The purpose of this study is to understand which are the main determinants of antisocial behaviours among preadolescents and adolescents. Towards three research questions we are going to face what predictors of their socioeconomic background affect their behaviours. In order, we assess the personal characteristics of children in association with their parents educational and working life and with the disposable income of the household and the kind of tenure where they live in. Then, we integrate subjective evaluation by young interviewees on family environment, and finally we want to find if these last set of variables might have significant differences across the income classes, divided in quartile.

In the following section we clarify how the models are generated, what are the main results, and in which extent they are important for our study.

3.1 Models

The study proceeds following three steps. With the baseline model, we try to answer to the first research question, about which are the socioeconomic determinants on antisocial behaviour, analysing the corresponding variables toward an Ordinary Least Square (OLS) regression on pooled waves. Here we can understand how the essential characteristics of young participants of the survey (such as gender, age, belonging ethnicity group, country and urban/rural area of residence), and their contexts (education level and employment status of parents, and their age classification, plus living in owned house or rent from social associations or local authorities, and corresponding income class of the household) might impact on truancy, passive bullying, and active bullying.

Next, to face the second research question about how the subjective evaluations of family climate might impact on the outcome variables, we add to the baseline models a set of variables related to perceived domestic environment. Firstly we support the initial model with variables such as family interest in school progresses of their children, perceived family support, frequency of talking and frequency of having arguments/quarrels with mother and father, then we run a similar model with the

aggregate variables or mother and father related to the frequency of having conversations or arguments. With these new variables we can observe how the subjective evaluations of the relationships with parents by youngers modify or strength the evidences observed previously. Besides, we can understand between the perceived variables and the socioeconomic ones which have higher impacts on the dependents.

Finally, in the third phase of this study, we want to understand if there are any significant variation between the impact of subjective evaluations of household income and the belonging income classes. Hence, we implemented a full set of interaction terms of the variable of interest with income quartiles. The purpose of these measures is to observe if, and in which extent, the effects on antisocial misbehaviours of subjective perception of domestic environment varies among the income classes, or if the impact of income classes on dependent variables report variations with respect to different evaluations of households' climate. Thus,

The linear least-square regressions we run present robust standard errors; in this way we avoid the violation of the constant variances' assumption among the variables. Considering we are using a dataset formed with the information within five different waves, the standard errors are adjusted considering the correlation at individual level across time, because the young respondents might be present in different waves, not just in one. Besides, robust standard errors keep into account the arbitrary heteroskedasticity: this is due to the definition of linear probability model.

3.2 Results

In order to answer to our research questions, we observe the results of all models proceeding in the following way. In the first place we study each dependent variable following the three phases of model implementations. In this way we can single out how the independent variables work along the study and the extent of their changes when implemented with other explanatories. We accept the variables at 99% (p-value <= 0.001) and 95% (p-value between 0.001 and 0.05) of likelihood, but also at for 90% of confidence (p-value between 0.05 and 0.10). In this way we are able to better comprehend which are the main independent variables in relationship with the

dependent ones. However, for any further information, the regression tabulations for each model are available in the Appendix (Tables A.2 to A.31) at the end of the work. However, we can anticipate that looking at the corresponding F-test computed for each model, we can assure that each of them has some explanatory power.

Another important consideration to bear in mind is that for the set of dummy variables such us income classification, corresponding year per wave variables, and the country of residence within the United Kingdom, we omitted one value. In this way, we avoid the problem of multicollinearity among the variable. Thus, we drop the time variable referring to Wave 1: y2010, the dummy about the first quartile of income classification: IncomeQ1, and the explicative related to the inhabitants of England: ResEng. Moreover, in the third typology of models, we drop the interaction variable corresponding to the first income class.

Adopting this measure permit us to evaluate each dummy variables' effect on the dependent variable with respect to the omitted one.

3.2.1 Truancy estimates and gradients

The first dependent variable we are going to study is truancy. In Table 3.1 are presented the baseline model followed by the two integrations with a set of explicative variables corresponding to perception by preadolescents and adolescents of domestic environment.

The baseline model introduces all the variables relating to the personal characteristics of the pupils; hence we observe how their gender, ethnicity, age, residence country and area (urban/rural) affect their propensity to play truant. Alongside we add information about their parents such as their employment status, the maximum educational attainment achieved, their age at the birth of the first son or daughter. Besides, we consider general household characteristics which help us to give the models an economic perspective: income level classification of the family, and housing status, that is living in a owned property, or living in a rent property borrowed by social associations or from local authorities.

Hence, starting from the first model we notice that the significant variables are the residential control variable corresponding to Scotland, the gender of young respondents, their age and the squared age, plus their corresponding ethnicity.

Looking at the signs and the values of coefficients, we observe that being a male individual increases the propensity of playing truant with respect to being female. This adverse behaviour increases its intensity with time, in fact noting the signs of the t by 1.4%. Living in Scotland have a significant impact of increasing this misbehaviour by 2,1%, and if they are white the frequency of truancy is 1% lower, hence it is more common among non-white students, among the minorities. From the baseline model, there are two other significant variables: the ones corresponding to age (labelled in the model as YoungAge and YoungAge2). We can observe the age have a parabolic path: it decreases and then, due to the sign of the polynomial variable, it increases. Toward the appropriate operations, we assess that the age at which the reducing effect over time stops and start increasing is around 10-year olds (in the models it varies between 9.4 and 10.4), that is the minimum age of young respondents' range. Hence, episodes of truancy increase toward age among preadolescence and early adolescence. Truancy records significant relationships also with parental and household variables. The presence of both parents in the family seems to negatively affect truancy, precisely having a mother and a father might reduce, with respect to the other variables, the propensity of truancy by 3,8%. This might be due to a more careful adopted by mother and father on children's life. Also, their maximum level of education achieved right before answering the questionnaire, which it is likelihood significant at 99%, has a negative impact on school absenteeism of children (-1.1%). Interesting information arise from the two kind of tenure housing dichotomic variables: living in owned houses is negatively associated with truancy, students living there have 2.5% of probability to play truant less with respect to who live in other residences. In fact, living in houses borrowed from social organization or local authorities seems to have positive influence on the frequency of truancy, indeed the probability arise by 2.0%. These differences between the two binary variables might be linked to the economic classification of the families: indeed, lower income households tend to do not live in home owned with respect to wealthy families. In these models, observing the income classification control variables, we can notice,

even though their results are not significant, that the second, the third, and the fourth quartiles report negative influence with respect to the first one, which correspond to the families with lower disposable income. Hence, we can sustain that, keeping into account the first research question, socioeconomic background might report significant gradients in propensity of children to play truancy. The ones belonging to lower income classes are more subjected to take part of skipping classes episodes.

In Model (2) and (3) in Table 3.1, we report other significant explanatory variables: the set of independents variables corresponding to the perceived domestic environment. Firstly, we claim that the significant socioeconomic variables we reported in Model (1) maintain their likelihood also in these models, and their impacts and signs remain the same as well. Each of them is significant in all the following models, except for the measure "talking with fathers' frequency", which is not significant in (2). The subjective evaluation of school interest by parents reported by their children might counter episodes of skipping school frequently or occasionally for 3.1%. stronger impact has the perception of feeling supported by both mother and father. Their attention decreases the frequency of truancy by 6.3%, while talking with mother bring to a reduction of 1.4%, which is in line with the aggregate variable's impact of having conversation with at least one parent (the reduction is 1.1%). On the other hand, having arguments or quarrels with mother and father have different impact. Both foster the propensity of their sons and daughters to play truant, but with different intensity: while have discussions with mother increase the frequency by 1.1%, having the same arguments with father increase this propensity by 3.3%. In aggregate, the increase is equal to 3.9%.

Considering the purpose of our second research question, we can underscore that the subjective evaluations of domestic environment by preadolescents and adolescents are important predictors of frequency of school absenteeism. These variables report higher incidence on dependent ones with respect to the socioeconomic determinant we have already seen. For instance, perceived family support has 1.65 higher magnitude on reducing the propensity of truancy among sons and daughters with respect to the presence of both parents in the household. Moreover, parental interest in school progresses has 1.25 higher probability to be associated to less skipping school episodes. This stronger relationship is seen also in those variables that increase

the propensity of truancy: in fact, the aggregate frequency of having discussions or quarrels with parents increase by the double absenteeism in school with respect to leave in rented house by social associations or local authorities.

Hence, we can sustain that the analysis of this particular set of variables is fundamental to comprehend the dynamics related to truancy among youngers. Another step is important to consider, that is how these variables impact on dependent variables among different income classes. We proceed keeping into account the Table 3.2, where it is shown the interaction between income classification levels the subjective evaluation of domestic environment, here the perceived family interest on school progresses by the children, perceived family support, aggregate frequency of having conversations on things that matter with at least one parent, and propensity of having arguments or quarrels with at least one parent.

The reason why we proceed our analysis towards the study of these interactions is important for the comprehension of these dynamics which link socioeconomic factors to human behaviours. In fact, after we established that the perceived family climate variables might impact significantly on antisocial behaviours such as truancy, studying if these associations varies due to the belonging income class or not, might give us insights on which could be the best policies to implement and on which factors they have to focus on, in these way the corrective measures might be more performing and efficient. These considerations stand also for the following analysis on interaction between income distribution classes and bullying victimisation and bullying victimisation.

In Table 3.2 we present only the perceived variables exposed before and their interaction. We did not insert the socioeconomic variables, because their extent effect, their signs, and their likelihood are analogues through the models. The table presents the coefficients of interaction variables with respect to the corresponding income quartile, the difference between the second, third and fourth quartiles interacted and the first, and their level of likelihood[15].

Considering that the perception of degrees of interest in school progresses decreases from the first quartile, which report a reduction in the probability of playing truancy

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[15] For further information, such as standard errors which are clustered to account for arbitrary correlation in the error term at the individual level of the values, see the Appendix at the end of the work.

of 8.6%, to the fourth quartile, which its negative relationship is around 3.8%, we can sustain that for lower income individuals higher parents' attention on their school life have more incidence on the prevention of truancy with respect to what happen in wealthier families. An analogous consideration is evident for family support where reduction of probability to play truant passes from -9.6% to -4.6% toward the income classifications, and also for having frequently conversations on thing that matter with at least one parent (from -5.4% of incidence on truancy in the first quartile to -2.2% in the fourth quartile). If positive domestic dynamics seem to have major effects on prevention of truancy episodes for lower income classification levels, on the other side, also negative domestic dynamics are more intense for poorer classes. As shown in Table 3.2, the impact of frequent discussions or quarrels in family in the lower quartile (+6.6%) is more than double the impact report for higher quartile (+2.8%).

Hence, after these assessments, we can affirm that, despite the perceived domestic environment variables report significant gradients in the association with frequency of truancy among preadolescents and adolescents, they have significant variations among different income classes, in particular for family interest in school progresses and for frequency of arguments.

Table 3.1: Linear regression models for truancy, values from Wave 1, Wave 3, Wave 5, Wave 7, Wave 9. Baseline Model (1) and Baseline + Perceived Family Environment Variables (2) and (3).

VARIABLES	(1) Truancy	(2) Truancy	(3) Truancy
y2012	-0.031***	-0.029***	-0.029***
	(0.006)	(0.006)	(0.006)
y2014	-0.039***	-0.037***	-0.036***
	(0.007)	(0.007)	(0.007)
y2016	-0.036***	-0.032***	-0.032***
	(0.007)	(0.007)	(0.007)
y2018	-0.035***	-0.029***	-0.030***
	(0.007)	(0.007)	(0.007)
IncomeQ2	-0.002	-0.001	-0.002
	(0.006)	(0.006)	(0.006)
IncomeQ3	-0.006	-0.007	-0.006
	(0.006)	(0.006)	(0.006)
IncomeQ4	-0.010	-0.009	-0.009
	(0.007)	(0.007)	(0.007)
ResWales	0.014	0.017*	0.016*
	(0.010)	(0.010)	(0.010)
ResScot	0.021***	0.023***	0.023***
	(0.008)	(0.008)	(0.008)
ResNorthIr	0.002	0.001	0.000
	(0.008)	(0.008)	(0.008)
Urban	-0.004	-0.005	-0.005
	(0.006)	(0.006)	(0.006)
Male	0.014***	0.014***	0.015***
	(0.004)	(0.004)	(0.004)
YoungAge	-0.097***	-0.102***	-0.100***
	(0.019)	(0.019)	(0.019)

YoungAge2	0.005***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)
White	-0.010**	-0.012**	-0.011**
	(0.004)	(0.005)	(0.004)
Siblings	-0.009	-0.010	-0.009
	(0.007)	(0.007)	(0.007)
BothParents	-0.038***	-0.033***	-0.034***
	(0.007)	(0.007)	(0.007)
EduParents	-0.011***	-0.009**	-0.010**
	(0.004)	(0.004)	(0.004)
EmplParents	-0.001	0.001	0.000
	(0.006)	(0.006)	(0.006)
MotherAgeQ1	0.009	0.008	0.008
	(0.006)	(0.006)	(0.006)
MotherAgeQ4	-0.001	0.000	-0.001
	(0.005)	(0.005)	(0.005)
FatherAgeQ1	0.008	0.007	0.006
	(0.006)	(0.006)	(0.006)
FatherAgeQ4	0.009	0.005	0.006
	(0.006)	(0.006)	(0.006)
TenOwnership	-0.025***	-0.020***	-0.021***
	(0.007)	(0.007)	(0.007)
TenSocRenter	0.020**	0.020**	0.019**
	(0.008)	(0.008)	(0.008)
FamIntSchool		-0.031***	-0.035***
		(0.007)	(0.007)
FamSupport		-0.063***	-0.064***
		(0.006)	(0.006)
TalkMother		-0.014**	
		(0.007)	
TalkFather		-0.006	
		(0.005)	

ArgMother		0.013**	
		(0.005)	
ArgFather		0.033***	
		(0.005)	
TalkParents			-0.011*
			(0.006)
ArgParents			0.039***
			(0.004)
Constant	0.603***	0.719***	0.705***
	(0.114)	(0.115)	(0.114)
Observations	19,035	18,190	18,572
R-squared	0.046	0.068	0.068

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Standard errors are clustered to account for arbitrary correlation in the error term at the individual level. Source: UKHLS database.

Table 3.2: Coefficients of Respective Income Quartiles in Interaction Variables with Perceived Domestic Environment (Truancy as Dependent Variables)

Income quartile	FamIntSchool	FamSupport	TlkParents	ArgParents
Q1	-0.086***	-0.096***	-0.054***	0.066***
Q2	-0.065***	-0.102***	-0.025**	0.059***
Q2-Q1	*0.021*	*-0.006*	*0.029**	*-0.007*
Q3	-0.042***	-0.078***	-0.027**	0.048***
Q3-Q1	*0.044***	*0.018*	*0.027*	*-0.018*
Q4	-0.038***	-0.05***	-0.022*	0.029***
Q4-Q1	*0.048****	*0.046****	*0.032**	*-0.037****

Note: Computations made by the student. For values of standard errors, see corresponding models in Appendix A.2 onwards. Source: UKHLS database.

3.2.2 Passive/Victimisation Bullying estimates and gradients

As exposed in truancy model, in Table 3.3 there are three models corresponding to the baseline socioeconomic variables (1) which characterized interviewees and two model with previous variables and the addition of the set of perceived variables (2) and (3).

The model (1) presents as significant baseline variables in relation with passive/victimisation bullying the residential control variables, the urban area dichotomic variable, the age of the young respondents (not the squared value), being white and have siblings in the belonging family.

Giving interpretation to these young interviewees' contextual variables, we can assure that in England, controlling for the other three countries of UK, preadolescents and adolescents might face more victimisation bullying with respect to their Welsh, Scottish, and North Irish peers, where the extent of decreasing probability to be involved in violent experiences are respectively -3.3%, -3.4%, and -7.3%. Moreover, we observe that the urban area context presents a significant positive relationship with bullying episodes, in fact living in these areas expose the individuals to a 1.8% higher probability to be victimised. On contrary, it seems to decrease with the students' age by 6.1%. Moreover, being a white student increase the propensity to face adverse bullying episodes by 8.0%, while the presence of siblings within the family counter this occurrence by 5.2%.

Alongside these variables, the significant determinants from parents' characteristics are their employment status, which correspond to a negative association with passive bullying by 2.5%, while the first quartile of father's age classification has positive correlation with this juvenile phenomenon by 3.6%. The last significant variable among the baseline model is living in a house which is owned outright or owned with a mortgage. This characteristic is negatively related to bullying suffered episodes and reduce the probability of bullying victimisation by 3.4%.

With respect to truancy, for passive bullying we report different significant socioeconomic variables, such as living in urban or rural area and employment status of parents, or having young father. Here, the education of mother and parents do not seem to have important associations with the outcome variable. However, the general

impact of these variables on victimisation bullying have higher extent with respect to the ones in truancy, but if we add the set of perceived variables, their impact do not change, neither their signs, nor their extents, or their significance.

Now we study the subjective evaluation variables (always in Table 3.3). Considering the perceived domestic climate set of variables, they result significant in both models. In model (2), we observe that perceived family interest has a negative association with passive bullying as well as the perceived family support and the frequencies of having talks about things that matter with father. The impacts on the dependent variables is, respectively, -5.3%, -14.6%, and -3.5%. On the other hand, the perceived domestic environment variables that have a positive association with the dependent variable are the reports of having arguments or discussions with mother, which increase the probability by 5.7%, or father, 5.9%, or at least one of them, which is 9.9% in model (3). Surprisingly we observe that talking with mother or having important conversation with at least one parent are in a positive relationship with passive bullying, with respective extent of 5.1% and 3.6%. While the argument variables' association is understandable, last results are difficult to give them some consistent interpretations. The integration with income classes might give us a comprehensive explanation of these particular outcomes. However, considering the last evidences in model (2) and (3), we might underscore how subjective evaluation of domestic environment are important predictor of bullying victimisation, in particular we observe that family support is the strongest determinant which can counter distress from bullying episodes. Its impact is almost 6 times more performing with respect to the employment status of parents. At the same time, have arguments with parents has a magnitude of 5.5 higher with respect to living in urban areas. Hence, it is fundamental to understand how these perceived variables change along the income classes, but we already can sustain that their relationship with bullying victimisation is important for future policy implementations.

In Table 3.4 we observe how subjective evaluations of family climate might change towards the income classification variables. The family interest in school progresses of the young interviewees increases its gradient in countering episodes of bullying victimisation among preadolescents and adolescents toward increasing level of income classes, in fact we can observe that the reduction of probability to be bullied

for students belonging to the first quartile of income distribution is 9.0% and the impact of family interest for students from the wealthiest quartile is 10.6% (for the second quartile is 11.1% and for the third 10.6%). We can report a similar incidence for family support. Even if it record significant and important percentage along the quartiles, the evidence that for higher income classes the reduction of passive bullying episodes underlines a significant difference among them: 15.7% for students in first quartile, 16.7% for the ones in the second, 20.2% for the ones in the third, and 17.5% for the pupils in wealthiest families.

The interactions between the frequency of having important conversations with at least one parent and income classes, despite the interesting results observed in models (2) and (3), do not report any sort significance neither for each corresponding quartile, nor for the coefficients corresponding to the differences among quartiles. The only thing we can observe is that the incidence of conversations about thing that matter do not record important changes among the quartiles with respect to bullying victimisation.

Lastly, we assess if and how the frequency of having arguments or quarrels with parents report consistent variations towards the quartiles. The coefficients are strongly significant for each corresponding quartile and are positively associated with the possibility of being bullied by peers, so it might incentives suffering by violent episodes outside home environment. Nevertheless, there is a higher incidence on passive bullying for discussions which take place in lower income classes (for the first quartile the percentage is 13.6%), with respect to the upper (for the fourth quartile the percentage is 11.6%).

In conclusion of this part related to passive bullying victimisation, we claim that the differences of family domestic environment among income classes report important and significant differences through families. In particular, the evidences we find out in this last part of the section underscore in which way the differences among class income levels have different and coherent results in the explanation of bullying victimisation, where upper class families might better prevent violent passive experiences with a positive domestic climate, with respect tp the lower class households.

Table 3.3: Linear regression models for passive/victimisation bullying, values from Wave 1, Wave 3, Wave 5, Wave 7, Wave 9. Baseline Model (1) and Baseline + Perceived Family Environment Variables (2) and (3).

VARIABLES	(1) PassBull	(2) PassBull	(3) PassBull
y2012	-0.015	-0.019*	-0.017*
	(0.010)	(0.010)	(0.010)
y2014	-0.024**	-0.016	-0.017
	(0.011)	(0.011)	(0.011)
y2016	-0.012	-0.010	-0.011
	(0.011)	(0.011)	(0.011)
y2018	-0.013	-0.008	-0.007
	(0.012)	(0.012)	(0.012)
IncomeQ2	0.025**	0.016	0.019*
	(0.010)	(0.010)	(0.010)
IncomeQ3	0.024**	0.019*	0.020*
	(0.011)	(0.011)	(0.011)
IncomeQ4	0.007	0.002	0.003
	(0.012)	(0.012)	(0.012)
ResWales	-0.033*	-0.023	-0.027
	(0.017)	(0.017)	(0.017)
ResScot	-0.034**	-0.028*	-0.028**
	(0.015)	(0.014)	(0.014)
ResNorthIr	-0.073***	-0.077***	-0.075***
	(0.016)	(0.016)	(0.016)
Urban	0.018**	0.015*	0.017**
	(0.008)	(0.008)	(0.008)
Male	0.009	0.015*	0.013*
	(0.008)	(0.008)	(0.008)
YoungAge	-0.061*	-0.056*	-0.055*
	(0.032)	(0.032)	(0.032)

YoungAge2	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
White	0.080***	0.069***	0.068***
	(0.008)	(0.008)	(0.008)
Siblings	-0.052***	-0.044***	-0.045***
	(0.012)	(0.012)	(0.012)
BothParents	-0.012	-0.009	-0.009
	(0.012)	(0.012)	(0.012)
EduParents	0.003	0.002	0.002
	(0.008)	(0.008)	(0.008)
EmplParents	-0.025**	-0.022**	-0.024**
	(0.010)	(0.010)	(0.010)
MotherAgeQ1	0.015	0.007	0.009
	(0.010)	(0.010)	(0.010)
MotherAgeQ4	0.009	0.007	0.008
	(0.010)	(0.010)	(0.010)
FatherAgeQ1	0.036***	0.035***	0.036***
	(0.012)	(0.012)	(0.011)
FatherAgeQ4	0.007	0.008	0.005
	(0.011)	(0.011)	(0.011)
TenOwnership	-0.034***	-0.031**	-0.031**
	(0.013)	(0.013)	(0.013)
TenSocRenter	-0.012	-0.015	-0.015
	(0.014)	(0.014)	(0.014)
FamIntSchool		-0.053***	-0.055***
		(0.010)	(0.010)
FamSupport		-0.146***	-0.146***
		(0.010)	(0.010)
TalkMother		0.051***	
		(0.011)	
TalkFather		-0.035***	
		(0.009)	

ArgMother		0.057***	
		(0.009)	
ArgFather		0.059***	
		(0.008)	
TalkParents			0.036***
			(0.010)
ArgParents			0.099***
			(0.007)
Constant	0.909***	1.001***	0.988***
	(0.197)	(0.201)	(0.199)
Observations	19,263	18,307	18,706
R-squared	0.023	0.057	0.057

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Standard errors are clustered to account for arbitrary correlation in the error term at the individual level. Source: UKHLS database.

Table 3.4: Coefficients of Respective Income Quartiles in Interaction Variables with Perceived Domestic Environment (Passive Bullying as Dependent Variables).

Income quartile	FamIntSchool	FamSupport	Tlkparents	Argparents
Q1	-0.090***	-0.157***	0.010	0.136***
Q2	-0.111***	-0.163***	-0.006	0.112***
Q2-Q1	*-0.021*	*-0.005*	*-0.016*	*-0.024*
Q3	-0.106***	-0.202***	0.000	0.138***
Q3-Q1	*-0.016*	*-0.045***	*-0.010*	*0.002*
Q4	-0.106***	-0.175***	0.005	0.116***
Q4-Q1	*-0.016*	*-0.018*	*-0.005*	*-0.020*

Note: For values of standard errors, see corresponding models in Appendix A.2. Source: UKLHS database.

3.2.4 Active/Perpetrating Bullying estimates and gradients

To comprehend which are the main predictors in baseline model and integrated baseline models we draw our considerations looking at the values of explicative variables in Table 3.5. Firstly, in model (2) the young respondents characteristics with significant likelihood in relation with the propensity of being involved actively in perpetrating bullying episodes are the following: the country of residence control variable corresponding to the Northern Ireland which having a negative relationship with the dependent variable tells us that with respect to England the probability of taking actively part in bullying episodes is by 2.2% minor (this statement is analogous for Wales, -1.5%, and Scotland, 1.3%, as well, even if their results are not significant), living in urban areas and being male. Residing in urban area might increase the probability of perpetrating bullying actions by slightly 0.9%, while being a male student increase this rate of 6.6%, controlling for other variables.

Considering the variables from family members' characteristics, having both parents in the family is reported as a significant variable negative relationship with the dependent variable: mother and father in the same household reduce the propensity of violent active episodes by 1.8%. As noticed for the bullying victimization models, having fathers in the first quartile of age classification is a significant variable with a positive association with active bullying as well. Its impact is by 1.7%. Besides, the last significant socioeconomic variable in the baseline model is living in owned houses, which it reveals to be a negative gradient in explaining active bullying episodes among children, where counters by 1.9% the frequency of perpetrating bullying.

Consequently we might sustain that among the socioeconomic variables which might be predictors of active bullying experiences among preadolescents and adolescents, the main factors are related to the area of residence, represented buy the country, the difference between urban or rural area, and the kind of housing tenure children live in. This last independent variable can give also important information about family economic background.

Interesting is the fact that all the parental characteristics we considered do not have any sort of influence on the perpetration of bullying by preadolescents and adolescents, neither the educational level of them, nor their employment status, or their age classification, except for the first lass of father's age. Besides, even living in social rent houses does not report likelihood in the prediction of these adverse misbehaviours, even though it reports an interesting positive association with the dependent variable.

Considering the socioeconomic variables are significant, maintain the same sign, and have similar effect on active bullying, in model (2) and (3) we focus our attention on perceived family environment explanatories. In model (2) family interest in school progresses reports a significant negative association with perpetrating bullying by 3.3%. At the same time, general family support in daily life counter this antisocial and violent behaviour by 7.2%. interesting is the main difference between frequency of having conversation about things that matter with mother and father. The former has a close to zero impact and it is non-significant, the latter has negative relationships with the dependent variable, which lead to a decrease by 1.5% of probability to be involved in violent episodes actively. Regarding having arguments with mother and father, both record a positive relationship with perpetrating bullying, respectively by 3.2% and 4.2%. In model (3) interest in school progresses and family support are both significant and maintain the same properties of the previous model, while have conversation on thing that matter with at least one parent is not significant. Aggregate arguments/quarrels variable is significant and increase with respect to the single variables of mother and father. The frequency of having discussions with at least one parent affects by 6.8% the outcome variable.

In views of these assessments, we can affirm that the subjective evaluation of family environment has important and significant effects on antisocial misbehaviours. Besides, taken singularly, they report higher influences with respect the socioeconomic variables, in particular family support and having argument or quarrels with parents. It is interesting to comprehend if these variables change their effect towards income classification levels. Hence, we now consider Table 3.6. Considering family interest in school, we single out that the reduction of active bullying episodes is reported for lower income quartiles with respect to the higher ones. In fact, as it is

shown in the table first and second quartiles have an average of 8.0% incidence in reduce perpetration of bullying episodes. The third and fourth quartiles report a similar value around 5.0%.

A similar result is recorded for the impact of family support on the active episodes of bullying perpetrated by preadolescents and adolescents, but the extent is minor. The value corresponding to the first quartile is 10.9%, while the one for the fourth is 9.0%. Analogously to the bullying victimisation interactions, here the variable related to the interactions between frequency of having important conversations with at least one parent and income classes are not significant.

For the interactions of aggregate frequency of having discussions or quarrels with parents and income classes, there are not reported any important variation among them with respect to active bullying.

In conclusion we can observed that in the prevention or exacerbation of active bullying episodes, there are clear associations between the income classes. This could suggest that the prevention measure of this antisocial behaviour might not be adopting income supportive measurers, but rather informative campaign.

Table 3.5: Linear regression models for active/perpetrating bullying, values from Wave 1, Wave 3, Wave 5, Wave 7, Wave 9. Baseline Model (1) and Baseline + Perceived Family Environment Variables (2) and (3).

VARIABLES	(1) ActBull	(2) ActBull	(3) ActBull
y2012	-0.004	-0.002	-0.002
	(0.007)	(0.007)	(0.007)
y2014	-0.031***	-0.025***	-0.025***
	(0.007)	(0.007)	(0.007)
y2016	-0.034***	-0.029***	-0.031***
	(0.007)	(0.007)	(0.007)
y2018	-0.043***	-0.037***	-0.037***
	(0.007)	(0.007)	(0.007)
IncomeQ2	0.008	0.008	0.005
	(0.007)	(0.007)	(0.007)
IncomeQ3	0.002	0.001	-0.000
	(0.007)	(0.007)	(0.007)
IncomeQ4	0.012	0.013*	0.011
	(0.008)	(0.008)	(0.008)
ResWales	-0.015	-0.016	-0.017*
	(0.010)	(0.010)	(0.010)
ResScot	-0.013	-0.011	-0.011
	(0.009)	(0.009)	(0.009)
ResNorthIr	-0.022**	-0.023**	-0.023**
	(0.009)	(0.009)	(0.009)
Urban	0.009*	0.008*	0.009**
	(0.005)	(0.005)	(0.005)
Male	0.066***	0.066***	0.066***
	(0.005)	(0.005)	(0.005)
YoungAge	-0.002	-0.007	-0.001
	(0.021)	(0.021)	(0.021)

YoungAge2	0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)
White	-0.005	-0.010**	-0.010*
	(0.005)	(0.005)	(0.005)
Siblings	-0.002	0.002	0.003
	(0.007)	(0.007)	(0.007)
BothParents	-0.018**	-0.018**	-0.016**
	(0.008)	(0.008)	(0.008)
EduParents	-0.002	0.001	-0.001
	(0.005)	(0.005)	(0.005)
EmplParents	-0.010	-0.010	-0.011
	(0.007)	(0.007)	(0.007)
MotherAgeQ1	0.004	0.001	0.001
	(0.006)	(0.006)	(0.006)
MotherAgeQ4	-0.005	-0.006	-0.007
	(0.006)	(0.006)	(0.006)
FatherAgeQ1	0.017**	0.017**	0.017**
	(0.007)	(0.007)	(0.007)
FatherAgeQ4	0.009	0.009	0.010
	(0.007)	(0.007)	(0.007)
TenOwnership	-0.019**	-0.014*	-0.016**
	(0.008)	(0.008)	(0.008)
TenSocRenter	0.011	0.010	0.009
	(0.009)	(0.009)	(0.009)
FamIntSchool		-0.033***	-0.039***
		(0.007)	(0.007)
FamSupport		-0.072***	-0.071***
		(0.007)	(0.007)
TalkMother		0.007	
		(0.008)	
TalkFather		-0.015***	
		(0.006)	

ArgMother		0.032***	
		(0.006)	
ArgFather		0.042***	
		(0.005)	
TalkParents			0.006
			(0.007)
ArgParents			0.062***
			(0.004)
Constant	0.123	0.223*	0.182
	(0.129)	(0.131)	(0.129)
Observations	19,263	18,307	18,706
R-squared	0.020	0.048	0.047

*Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Standard errors are clustered to account for arbitrary correlation in the error term at the individual level. Source: UKHLS database.*

Table 3.6: Coefficients of Respective Income Quartiles in Interaction Variables with Perceived Domestic Environment (Active Bullying as Dependent Variables).

Income quartile	FamIntSchool	FamSupport	Tlkparents	Argparents
Q1	-0.079***	-0.109	-0.035***	0.077***
Q2	-0.081***	-0.105***	-0.009	0.079***
Q2-Q1	*-0.002*	*0.004*	*0.026**	*0.002*
Q3	-0.051***	-0.072***	-0.012	0.074***
Q3-Q1	*0.028*	*0.037***	*0.023*	*-0.003*
Q4	-0.050***	-0.090***	-0.001	0.073***
Q4-Q1	*0.029*	*0.019*	*0.034**	*-0.004*

Note: Computations made by the student. For values of standard errors, see corresponding models in Appendix A.2. Source: UKHLS database.

3.3 Discussion

The empirical analysis provides a new insight into the relationship between the subjective contextual variables, differences among income classes and antisocial behaviours in preadolescence and adolescence.

For the propensity of being involved in episodes of truancy, we observed that factors such as being male, non-white preadolescent or adolescent increases this frequency. These evidences are in line with the scientific literature: Attwood & Croll (Truancy in Secondary School Pupil: Prevalence, Trajectories and Pupil Perspectives, 2006) and Vaughn et al. (2013), linked to the fact that pupils tend to increase episodes of truancy as they age. Considering the family contextual variables we observe that young individuals are more prone to increase their misbehaviour if there is only one parent in the and the maximum educational level achieved is lower than secondary school diploma. These observations are in line with Ballantine & Hammerick (2009) and Tittle & Meier (1990) works, which underline how these factors bring parents to spend less time with their children, affecting their propencity to skip school along. An interesting factor we find is that the absence of siblings in the family nudges in this adverse direction. Important socioeconomic determinants of truancy are living in owned houses which has a counter relationship with these episodes, while residing in social rented houses, affect positively the propensity to this misbehaviour among preadolescents and adolescents. This underline a first significant difference of reaction among the social income classes, because wealthier families tend to live in owned houses, while lower income households reside in not-owned ones.

These socioeconomic determinants give us the sensation that contextual economic and background characteristics report important gradients in the frequency of truancy among youngers, but they are predictors lesser intense than the perceived family environment measures.

From the implemented models, we can observe that the perception of the younger survey's members impact significantly of each dependent variable. Thus, we observe that if the children feel supported by their parents and in general by the family members, it is associated a reduction in reporting truancy episodes. These evidences are in contrast with Miller and Plant (1999), which associate parental caring just to

the school performances of children and not to their truancy. In this way, we can sustain that major attention by parents might incentives youngers to be involved in school formation denying the idea of skipping it. To corroborate this positive bond between school parental caring and avoiding truancy, we observe that even having frequent conversation with both parents, and at least with one of them, may bring to reduction to truancy. The opposite relationship we have when the children live a difficult domestic environment. In fact, if they report frequently arguments and/or quarrels, this variable is positive associated with episodes of truancy, hence it appears that truancy is more likeable in perceived distressed families.

Overall, the coefficients of these measures in the integrated models to the baseline have higher impacts, both positive and negative, on the propensity of playing truant by respondents. This first observation might suggest that targeting policies focusing on domestic climate might register better outcome in the prevention of this particular antisocial behaviour. However, to sustain that we a clearer knowledge about tow these measures might change, we have to consider how these subjective evaluations differ with respect to the belonging class of income distribution where the household of the corresponding interviewee is collocated.

In these interaction models we report that the variation of propensity of playing truant are higher in the lower income classes, both for positive effects such as family interest in school progresses and family general support, and frequency of having conversations with at least one parent on thing that matter, but also on negative effects linked to the frequency of having argument or quarrels with at least one parent. This higher changes in probability I the lower classes with respect to the higher might suggest that, especially in the argument/quarrel scenario, poorer families tend to have more stressful environment due to the economic struggling and the outcomes on children's behaviour might change with respect to the propensity of parents caring. Thus, we can suggest that policies of economic support for these categories and a stronger sensibilisation among parents on the importance of take care of their sons and daughters, in particular supporting them, talking with them, and being interested in their school progresses might lead to a significant reduction on truancy by preadolescents and adolescents, in particular for older ones.

Instead, for bullying victimization episodes, being a white urban student living in England, with respect to the other countries of United Kingdom, in accordance with Henningsen (2009), reflect a positive propension to be victimised by peers. This tendency decreases with age but increases for the belonging class income. The presence of siblings seems to prevent these suffering, probably due to the empathy and the relief they can guarantee to the victims (Chrysanthou & Vasilakis, The Dynamics and Determinants of Bullying Victimisation, October 2018). Also, the employment status of parents might counter the bullying episodes, in fact working parents tend to generate a serene domestic environment, and to have more resources to face children's needs. In this way, we can read the negative effect on victimisation bullying of living in owned houses as a determinant factor of family stability as well. Considering that socioeconomic variables maintain their properties among the models implemented, we can compare their impact on bullying victimisation with subjective evaluation of family climate. In fact, as observed by Henningsen (2009), this set of variables might be an important predictor. We observe that for bullying victimisation the perceived domestic environment by the preadolescents and adolescents might influence significantly their attitudes outside the respective houses among peers. In fact, a positive climate and relationships with parents, such as their personal interest on the ongoing school progresses of children, if boys and girls feel supported by their entire family, and having often important conversations with mother and father or at least one of them, leads to downsize the impact of bullying victimisation of young individuals. On contrary, if they feel adverse climate inside their household, which is underscored by the frequent presence of arguments and quarrels with parents, their propensity to be bullied at school increase. This last consideration is in accordance with the evidences from Carrell and Hoekstra (2011).

A deep understanding of these evidences it is given by the analysis of the interactions between the set of domestic environment variables towards the income classification levels of households. In these models we can observe an interesting gradient due to the better socioeconomic background of the families. In fact, for positive family climate measures, the reduction in bullying victimisation episodes decrease with higher intensity with respect to the lower incomes, while in presence of arguments or quarrels, the impacts is less strong for wealthier households. This could be due firstly

to the difficult conditions on which the poorer families face, which can generate a spiral of tensions and violence which impact on children behaviours that lead them to develop lower self-esteem, mistrust in people adults and peers, and submissive behaviours, which might ease the dynamics to be target as a preferable victim of bullying victimisation.

Hence, in the first place one important con measure policy maker might implement to face the source of bullying among young people is develop some economic support for lower income families, which might relieve parents to economic distress and incentive them to spend more time with their children. Secondly, considering that developed submissive behaviours and low self-esteem are not easy task to correct when they are already take place in youngers, policy maker could support also some courses for increasing self-esteem and nudging wills to live a self-fulfilled life among youngers from deprived socioeconomic background.

Finally, we discuss the main evidences corresponding to the perpetration of active bullying episodes. Being a male young individual living in urban areas in particular in owned houses, and in England are the main predictors considering the personal characteristics of the survey's members. The presence of both parents might be a good counter factor for act violently with peers, because being in two in family increases the attention on children's behaviour outside home. As seen in passive bullying, also here the presence of a young father (which has had the first child in young age) increase the propensity of the individuals to be involved in active violent episodes. However, these socioeconomic predictors have lesser impacts on the determination of active bullying with respect to the set of variables corresponding to the domestic environment perceptions. Indeed, even for perpetrating bullying, the domestic climate perception variables work consistently with the theory and similarly with passive bullying. The fact that the positive relationships between parents and corresponding children in the household are associated with negative impact on active bullying mean that subjective evaluation of the household unity by their younger members is important to understand and predict antisocial behaviours by them. This is reinforced by the fact that discussion and quarrels are positive associated to perpetration of violence among young individuals.

These considerations, and the fact that these subjective evaluations have higher probability effects with respect to the mere socioeconomic variables underscore important gradients in perpetration of bullying among the family context. Hence, it important to understand if these properties have significant variations among income classification levels. As observed in the previous section, the main evidence we single out is that there are not significant variations among the income classes, in particular for the frequency of having arguments in families. This dynamic underline a substantial equal effect of increment the violent episodes among peers in presence of discussions or quarrels in family environment.

Hence, belonging to a specific socioeconomic class is indifference to the extent of impact on active bullying with respect to family environment. Thus, the main policies government might implement are strictly related to sensibilisation and information campaigns in schools but also among parents, incentives their presence at home and their attention on children behaviours. These measures of prevention are fundamentals when, as in our case of perpetration of bullying episodes, the income class conditions are not relevant.

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Conclusions

We analyse determinants of youth truancy and youth bullying among preadolescents and adolescents (10 to 15-year olds) using the Understanding Society (UKHLS) dataset. We investigate the evolution of three antisocial behaviours regarding the propensity of absenteeism from school, bullying victimisation, and bullying perpetration across the decade 2009-2019 (corresponding to wave 1, 3, 5, 7, and 9 of the UKHLS).

Specifically, the purpose of this study is to find the main potential predictors of truancy and bullying among socioeconomic background and perceived domestic environment set of variables. Besides, we studied how subjective family climate estimations vary their impact on dependent variables with respect to the belonging income class of the interviewees. These last measures are a new approach in studying the relationships between family factors, economic influences, and youth behaviour dynamics.

Using OLS linear regressions, we developed our work in three phases: firstly, we run models considering only socioeconomic independent variables. In doing so, we comprehend which contextual characteristics have significant impact on truancy and bullying. Secondly, we attach to the previous models a set of perceived domestic environment variables. These esteems permit to understand how, controlling for socioeconomic dynamics, family factors influence antisocial behaviours. Finally, we implement interaction variables among domestic climate and income classification quartiles, thus we can observe if income differences among families correspond to significant different incidences on antisocial behaviours.

Considering the main evidences we detected in the models, we can sustain that, for each dependent variable, subjective evaluations of domestic environment report stronger relationships with antisocial behaviours with respect to socioeconomic predictors. Besides, the joint analysis between family factors and income classification give us a clearer interpretation of the previous findings. Indeed, their correlation report significant differences among the different class of income we considered (here quartiles). In particular, we observe that prevention of bullying victimisation is higher for parental support in wealthier income families, while

adverse relationship between members fosters children exposition to violent experiences in lower class households. We detect similar variations also for truancy, in fact when children from poorer families are exposed to negative domestic climate, it reports higher propensity to skip classes than for students belonging to higher income levels.

Instead, considering the incidence of adverse domestic climate on propensity of bullying perpetration, we did not find variations among income classes.

Keep in mind Heckman's (2012) quote: "Health economists should consider the costs and benefits of preventing, rather than treating", we try now to expose the possible implications for state and government.

The previous findings suggest some insights for future policy measures. In order to prevent antisocial behaviours as truancy and passive bullying, policy makers have to focus on improvement of lower income family conditions toward economic support subsidies, which might relieve parents from stress and struggling. Another measure is to place at the disposal of these families professional figures which can spend time with their children when parents cannot be at home. Besides, the prevention should be focused also towards addressing parental educational lacks.

On the other hand, preventing bullying perpetration needs a different approach by the state authorities. Considering that it does not report significant variances in correlation among classes, economic supports might not record any substantial improvement. In this case, the problem is spread along income classes, hence the better way to face this misbehaviour is through the implementation of information and sensibilization campaigns at school as well as among families. Organizing plenary meetings, distributing information guides and leaflets about bullying sources and outcomes might easily convey the awareness on this adverse dynamic. Moreover, for parents should be useful attend educational programs in order to comprehend the importance of family support as a protective factor for their children.

The result on the relevance of the family as a special environment for children's adverse behaviours corresponding to externalisations, internalizations, or even uplifting behaviours, are in line with the previous scientific literature. Indeed, in Ttofi (2014), family support, the quality of supportive relationship, strong tied bond friendship, and nevertheless individual factors confer emotional resilience against

bullying victimisation. Besides, Chrisanthou & Vasilakis (2018) claims that family support is a protective determinant against adolescent bullying victimisation. On contrary, they underline that another factor such as low family income per capita, that is economic disadvantage, it might be a risk factor in juvenile misbehaviour, as explained by our findings.

In the end, we conclude our work underlining few limitations of this study.

This thesis does not demonstrate causality between the explicative independent variables and the dependent variables. In fact, we only underscore how some socioeconomic determinants might be considered significant predictors of the specific outcome variables, due to their correlation. In these models we do not considered important variables which can infer the possibility of causality among them. For example, the interviewees' scholastic attainments and grades might be important indicators which can be linked to both our explanatory and to our dependent variables. In fact, this measure might influence distress at school, or tension at home, or be influenced by family environment or be incentivized by classmates. In this case the absence of this indicator might generate endogenous problems. However, in UKHLS this particular data is not present in the questionnaires, so for us was impossible to compute it. Other important variables adopted in other works which, for the same problem we did not adopted, but could be useful are the number of close friends at school and daily hours worked by parents. The former might be a predictor of prevention in passive bullying or have a causal relationship with truancy, the latter might give us a reliable measure about the real impact of parents' absence from home to their children social behaviours.

The dummy variables we adopt to control for time through the waves considered are useful to monitor the model for exogenous turbulences in economic cycle. However, more specific variables which control for UK economic trend, or for employment/unemployment rate, or how households' income varies across time, might give us more specific explanations regarding macroeconomic variations.

This work could further be extended with future possibilities to follow these younger interviewees over time. Thus, we can understand how their juvenile experiences affect

their life cycle outcomes. Hence, we can better understand the impact extent of these variables in future life.

Also, this work generates a new set of questions for further research, on the inverse relationships between income differences, family factors, and antisocial youth behaviours. In other words, one interesting association to investigate would be the inverse relationships among the variables in the model, that is if antisocial behaviours such as propensity of truancy and bullying might lead to different impacts on perceived family climate with respect to income classes.

Another direction for future research is to explore whether these findings would be confirmed in other developed countries like Western European or North America countries, or former UK colonies like Australia and New Zealand.

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Appendix

A.1 Taxonomy of Variables Adopted in the Models and Their Descriptions.

Variable Name	Description variable
Truancy	Observation whether the young respondent has ever played truant
PassBull	Aggregate variable which explains the distribution of passive/victimization bullying toward youngers.
ActBull	Aggregate variable which explains the distribution of passive/victimization bullying toward youngers.
y2010	Dummy time variable Wave 1 (2009-2011)
y2012	Dummy time variable Wave 3 (2011-2013)
y2014	Dummy time variable Wave 5 (2013-2015)
y2016	Dummy time variable Wave 7 (2015-2017)
y2018	Dummy time variable Wave 9 (2017-2019)
IncomeQ1	Income classification: first quartile
IncomeQ2	Income classification: second quartile
IncomeQ3	Income classification: third quartile
IncomeQ4	Income classification: fourth quartile
Male	Gender interviewee (Male=1, Female=0)
YoungAge	Age at the time of the interview [10 to 15-year olds]
YoungAge2	YoungAge squared
White	Ethnicity interviewee (White=1, Otherwise=0)
ResEng	Dummy country variable (England)
ResWales	Dummy country variable (Wales)
ResScot	Dummy country variable (Scotland)
ResNorthIr	Dummy country variable (Northern Ireland)

Urban	Residence area (Urban=1, Rural=1)
Siblings	At least one sibling in the household
BothParents	Precence of both parents in the household
EduParents	Maximum level of parents' education achieved at the time of interview (Secondary school diploma =1, lower or otherwise =0)
EmplParents	Current labour force parents' status at the time of interview (Self employed or paid employment=1, otherwise =0)
MotherAgeQ1	First quartile of mother's age distribution, where age is the corresponding age at the birth of children
MotherAgeQ4	Fourth quartile of mother's age distribution, where age is the corresponding age at the birth of children
FatherAgeQ1	First quartile of father's age distribution, where age is the corresponding age at the birth of children
FatherAgeQ4	Fourth quartile of father's age distribution, where age is the corresponding age at the birth of children
TenOwnership	Housing tenure: owned outright + owned with mortage
TenSocRenter	Housing tenure: local authority rent + housing association rented
FamIntSchool	Perceived evaluation by interviewees whether parents are interested in own school progresses
FamSupport	Perceived evaluation by interviewees about how they feel supported by family members (especially parents)

TalkMother	Talking frequency with mother about things that matter
TalkFather	Talking frequency with father about things that matter
ArgMother	Argument/quarrel frequency with mother
ArgFather	Argument/quarrel frequency with father
TlkParents	Aggregate estimator of talking frequency with at least one parent
ArgParents	Aggregate estimator of argument/quarrel frequency with at least one parent

A.2.

In the following tables we expose the complete models with the interaction variables of family interest in school progresses, perceived family support, frequency of having conversations on things that matter with at least one parent, and frequency of having arguments or quarrels with at least one parent.

We generate these interplaying variables toward a multiplication between the income reference classes and these variables taken one by one: perceived parents interests in school progresses (FamIntQ1; FamIntQ2; FamIntQ3; FamIntQ4), perceived family support in general aspects of life (FamSupQ1; FamSupQ2; FamSupQ3; FamSupQ4), frequencies of conversations on things that matter with parents (TlkParentsQ1; TlkParentsQ2; TlkParentsQ3; TlkParentsQ4), frequencies of arguments/quarrels with parents (ArgParetsQ1; ArgParetsQ2; ArgParetsQ3; ArgParetsQ4).

Thus, the creation of these variables allows us to understand if there are significant variations in the family climate attributable to the corresponding income class.

A.2.1

OLS Regression Model: Truancy and Interaction Between Perceived Family Environment and Income Classification Levels (Source: UKHLS dataset).

VARIABLES	(1) Truancy	(2) Truancy	(3) Truancy	(4) Truancy
y2012	-0.0325***	-0.031***	-0.030***	-0.030***
	(0.00633)	(0.006)	(0.006)	(0.006)
y2014	-0.0394***	-0.039***	-0.038***	-0.036***
	(0.00657)	(0.007)	(0.007)	(0.007)
y2016	-0.0367***	-0.035***	-0.035***	-0.034***
	(0.00669)	(0.007)	(0.007)	(0.007)
y2018	-0.0363***	-0.033***	-0.033***	-0.031***
	(0.00710)	(0.007)	(0.007)	(0.007)
IncomeQ2	-0.0190	0.003	-0.025	-0.000
	(0.0170)	(0.017)	(0.016)	(0.007)
IncomeQ3	-0.0421**	-0.019	-0.027*	0.001
	(0.0167)	(0.017)	(0.016)	(0.007)
IncomeQ4	-0.0486***	-0.045***	-0.034**	0.007
	(0.0170)	(0.016)	(0.017)	(0.007)
ResWales	0.0159*	0.016	0.013	0.015
	(0.00962)	(0.010)	(0.010)	(0.010)

ResScot	0.0239***	0.023***	0.020**	0.019**
	(0.00803)	(0.008)	(0.008)	(0.008)
ResNorthIr	0.00184	0.002	0.002	-0.001
	(0.00809)	(0.008)	(0.008)	(0.008)
Urban	-0.00363	-0.004	-0.004	-0.004
	(0.00568)	(0.006)	(0.006)	(0.006)
Male	0.0140***	0.015***	0.013***	0.015***
	(0.00407)	(0.004)	(0.004)	(0.004)
YoungAge	-0.0945***	-0.099***	-0.102***	-0.099***
	(0.0188)	(0.019)	(0.019)	(0.019)
YoungAge2	0.00469***	0.005***	0.005***	0.005***
	(0.000764)	(0.001)	(0.001)	(0.001)
White	-0.0110**	-0.007	-0.009**	-0.015***
	(0.00447)	(0.004)	(0.004)	(0.004)
Siblings	-0.0111*	-0.010	-0.009	-0.005
	(0.00657)	(0.007)	(0.007)	(0.007)
BothParents	-0.0350***	-0.036***	-0.037***	-0.039***
	(0.00705)	(0.007)	(0.007)	(0.007)
EduParents	-0.00874**	-0.012***	-0.011**	-0.012***
	(0.00436)	(0.004)	(0.004)	(0.004)
EmplParents	-0.00148	-0.001	-0.000	-0.001
	(0.00597)	(0.006)	(0.006)	(0.006)
MotherAgeQ1	0.00893	0.009	0.008	0.007
	(0.00604)	(0.006)	(0.006)	(0.006)
MotherAgeQ4	-0.000207	-0.002	-0.001	-0.002
	(0.00507)	(0.005)	(0.005)	(0.005)
FatherAgeQ1	0.00764	0.007	0.008	0.007
	(0.00631)	(0.006)	(0.006)	(0.006)
FatherAgeQ4	0.00640	0.008	0.008	0.009*
	(0.00555)	(0.006)	(0.006)	(0.006)
TenOwnership	-0.0230***	-0.023***	-0.025***	-0.024***
	(0.00697)	(0.007)	(0.007)	(0.007)
TenSocRenter	0.0197**	0.019**	0.019**	0.020**
	(0.00842)	(0.008)	(0.008)	(0.008)
FamIntSchool	-0.0858***			
	(0.0132)			
FamIntQ2	0.0213			
	(0.0181)			
FamIntQ3	0.0439**			
	(0.0176)			
FamIntQ4	0.0483***			
	(0.0176)			
FamSupport		-0.096***		
		(0.013)		
FamSupQ2		-0.006		
		(0.018)		
FamSupQ3		0.018		
		(0.017)		
FamSupQ4		0.046***		
		(0.017)		

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TalkParents				-0.054***
				(0.013)
TlkParentsQ2				0.029*
				(0.018)
TlkParentsQ3				0.028
				(0.017)
TlkParentsQ4				0.032*
				(0.017)
ArgParents				0.065***
				(0.009)
ArgParetsQ2				-0.007
				(0.012)
ArgParetsQ3				-0.018
				(0.011)
ArgParetsQ4				-0.037***
				(0.011)
Constant	0.663***	0.699***	0.687***	0.593***
	(0.115)	(0.115)	(0.115)	(0.114)
Observations	18,808	18,836	18,941	18,936
R-squared	0.053	0.062	0.047	0.054

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

A.2.2

OLS Regression Model: Passive Bullying and Interaction Between Perceived Family Environment and Income Classification Levels (Source: UKHLS dataset).

VARIABLES	(1) PassBull	(2) Truancy	(3) Truancy	(4) Truancy
y2012	-0.0189*	-0.031***	-0.030***	-0.030***
	(0.0100)	(0.006)	(0.006)	(0.006)
y2014	-0.0200*	-0.039***	-0.038***	-0.036***
	(0.0108)	(0.007)	(0.007)	(0.007)
y2016	-0.0142	-0.035***	-0.035***	-0.034***
	(0.0110)	(0.007)	(0.007)	(0.007)
y2018	-0.0154	-0.033***	-0.033***	-0.031***
	(0.0120)	(0.007)	(0.007)	(0.007)
IncomeQ2	0.0407*	0.003	-0.025	-0.000
	(0.0227)	(0.017)	(0.016)	(0.007)
IncomeQ3	0.0384	-0.019	-0.027*	0.001
	(0.0239)	(0.017)	(0.016)	(0.007)
IncomeQ4	0.0217	-0.045***	-0.034**	0.007
	(0.0259)	(0.016)	(0.017)	(0.007)
ResWales	-0.0295*	0.016	0.013	0.015
	(0.0172)	(0.010)	(0.010)	(0.010)
ResScot	-0.0284*	0.023***	0.020**	0.019**
	(0.0148)	(0.008)	(0.008)	(0.008)
ResNorthIr	-0.0733***	0.002	0.002	-0.001
	(0.0160)	(0.008)	(0.008)	(0.008)
Urban	0.0184**	-0.004	-0.004	-0.004
	(0.00798)	(0.006)	(0.006)	(0.006)
Male	0.00872	0.015***	0.013***	0.015***
	(0.00772)	(0.004)	(0.004)	(0.004)
YoungAge	-0.0543*	-0.099***	-0.102***	-0.099***
	(0.0319)	(0.019)	(0.019)	(0.019)
YoungAge2	0.000968	0.005***	0.005***	0.005***
	(0.00127)	(0.001)	(0.001)	(0.001)
White	0.0721***	-0.007	-0.009**	-0.015***
	(0.00789)	(0.004)	(0.004)	(0.004)
Siblings	-0.0572***	-0.010	-0.009	-0.005
	(0.0120)	(0.007)	(0.007)	(0.007)
BothParents	-0.00987	-0.036***	-0.037***	-0.039***
	(0.0119)	(0.007)	(0.007)	(0.007)
EduParents	0.00503	-0.012***	-0.011**	-0.012***
	(0.00838)	(0.004)	(0.004)	(0.004)
EmplParents	-0.0249**	-0.001	-0.000	-0.001
	(0.0105)	(0.006)	(0.006)	(0.006)
MotherAgeQ1	0.0111	0.009	0.008	0.007
	(0.0102)	(0.006)	(0.006)	(0.006)
MotherAgeQ4	0.00909	-0.002	-0.001	-0.002
	(0.0103)	(0.005)	(0.005)	(0.005)

FatherAgeQ1	0.0374***	0.007	0.008	0.007
	(0.0117)	(0.006)	(0.006)	(0.006)
FatherAgeQ4	0.00394	0.008	0.008	0.009*
	(0.0115)	(0.006)	(0.006)	(0.006)
TenOwnership	-0.0313**	-0.023***	-0.025***	-0.024***
	(0.0126)	(0.007)	(0.007)	(0.007)
TenSocRenter	-0.0119	0.019**	0.019**	0.020**
	(0.0137)	(0.008)	(0.008)	(0.008)
FamIntSchool	-0.0900***			
	(0.0171)			
FamIntQ2	-0.0212			
	(0.0250)			
FamIntQ3	-0.0159			
	(0.0256)			
FamIntQ4	-0.0162			
	(0.0271)			
FamSupport		-0.096***		
		(0.013)		
FamSupQ2		-0.006		
		(0.018)		
FamSupQ3		0.018		
		(0.017)		
FamSupQ4		0.046***		
		(0.017)		
TalkParents			-0.054***	
			(0.013)	
TlkParentsQ2			0.029*	
			(0.018)	
TlkParentsQ3			0.028	
			(0.017)	
TlkParentsQ4			0.032*	
			(0.017)	
ArgParents				0.065***
				(0.009)
ArgParetsQ2				-0.007
				(0.012)
ArgParetsQ3				-0.018
				(0.011)
ArgParetsQ4				-0.037***
				(0.011)
Constant	0.959***	0.699***	0.687***	0.593***
	(0.199)	(0.115)	(0.115)	(0.114)
Observations	18,950	18,836	18,941	18,936
R-squared	0.029	0.062	0.047	0.054

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

A.2.3

OLS Regression Model: Active Bullying and Interaction Between Perceived Family Environment and Income Classification Levels (Source: UKHLS dataset).

VARIABLES	(1) ActBull	(2) ActBull	(3) ActBull	(4) ActBull
y2012	-0.00605	-0.003	-0.003	-0.000
	(0.00672)	(0.007)	(0.007)	(0.007)
y2014	-0.0299***	-0.027***	-0.030***	-0.025***
	(0.00699)	(0.007)	(0.007)	(0.007)
y2016	-0.0356***	-0.032***	-0.032***	-0.029***
	(0.00700)	(0.007)	(0.007)	(0.007)
y2018	-0.0451***	-0.041***	-0.042***	-0.036***
	(0.00739)	(0.007)	(0.007)	(0.007)
IncomeQ2	0.00910	0.006	-0.013	0.005
	(0.0176)	(0.017)	(0.016)	(0.008)
IncomeQ3	-0.0202	-0.026	-0.016	0.000
	(0.0173)	(0.017)	(0.017)	(0.008)
IncomeQ4	-0.0100	0.001	-0.016	0.009
	(0.0191)	(0.019)	(0.017)	(0.008)
ResWales	-0.0164*	-0.015	-0.016*	-0.013
	(0.00998)	(0.010)	(0.010)	(0.010)
ResScot	-0.0116	-0.010	-0.013	-0.014
	(0.00886)	(0.009)	(0.009)	(0.009)
ResNorthIr	-0.0214**	-0.021**	-0.022**	-0.024***
	(0.00925)	(0.009)	(0.009)	(0.009)
Urban	0.00916**	0.008*	0.009**	0.008*
	(0.00458)	(0.005)	(0.005)	(0.005)
Male	0.0651***	0.067***	0.065***	0.066***
	(0.00472)	(0.005)	(0.005)	(0.005)
YoungAge	0.00308	-0.004	-0.004	-0.004
	(0.0209)	(0.021)	(0.021)	(0.021)
YoungAge2	-0.000167	0.000	0.000	0.000
	(0.000833)	(0.001)	(0.001)	(0.001)
White	-0.00760	-0.003	-0.005	-0.012**
	(0.00504)	(0.005)	(0.005)	(0.005)
Siblings	-0.00391	-0.003	-0.001	0.005
	(0.00714)	(0.007)	(0.007)	(0.007)
BothParents	-0.0160**	-0.016**	-0.018**	-0.019**
	(0.00758)	(0.008)	(0.008)	(0.008)
EduParents	0.000289	-0.003	-0.001	-0.001
	(0.00523)	(0.005)	(0.005)	(0.005)
EmplParents	-0.0114*	-0.009	-0.009	-0.010
	(0.00669)	(0.007)	(0.007)	(0.007)
MotherAgeQ1	0.00148	0.004	0.004	0.002
	(0.00646)	(0.006)	(0.006)	(0.006)
MotherAgeQ4	-0.00512	-0.006	-0.005	-0.006
	(0.00611)	(0.006)	(0.006)	(0.006)

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FatherAgeQ1	0.0183**	0.017**	0.018**	0.016**
	(0.00713)	(0.007)	(0.007)	(0.007)
FatherAgeQ4	0.00852	0.008	0.009	0.012*
	(0.00688)	(0.007)	(0.007)	(0.007)
TenOwnership	-0.0173**	-0.015*	-0.019**	-0.020**
	(0.00815)	(0.008)	(0.008)	(0.008)
TenSocRenter	0.0106	0.012	0.010	0.008
	(0.00916)	(0.009)	(0.009)	(0.009)
FamIntSchool	-0.0792***			
	(0.0130)			
FamIntQ2	-0.00197			
	(0.0187)			
FamIntQ3	0.0284			
	(0.0182)			
FamIntQ4	0.0289			
	(0.0196)			
FamSupport		-0.109***		
		(0.013)		
FamSupQ2		0.004		
		(0.018)		
FamSupQ3		0.037**		
		(0.018)		
FamSupQ4		0.019		
		(0.020)		
TalkParents			-0.035***	
			(0.012)	
TlkParentsQ2			0.026	
			(0.017)	
TlkParentsQ3			0.023	
			(0.018)	
TlkParentsQ4			0.034*	
			(0.018)	
ArgParents				0.077***
				(0.009)
ArgParetsQ2				0.002
				(0.013)
ArgParetsQ3				-0.003
				(0.012)
ArgParetsQ4				-0.004
				(0.012)
Constant	0.162	0.230*	0.162	0.105
	(0.130)	(0.130)	(0.130)	(0.128)
Observations	18,950	19,041	19,164	19,161
R-squared	0.027	0.036	0.021	0.035

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1