

**The Societal Context of School-Based Bullying Victimization:
An Application of Institutional Anomie Theory in a Cross-National Sample**

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Abstract

The present study examines cross-national variation in school-based bullying victimization. Specifically, we address whether decommodification, a concept implicated in Institutional Anomie Theory that measures the degree of a society's social welfare protection, is a protective factor against school-based bullying victimization. To test this theory, we retrieve data from the Programme for International Student Assessment (PISA) questionnaire and combine this data with other sources capturing cross-national factors hypothesized to impact bullying victimization. The sample consists of 286,871 adolescents (with an average age of 15 years) attending 14,192 schools nested within 55 high-and-middle-income countries. We estimate multilevel regression models with three levels of analysis (student, school, and country), finding that countries with a greater degree of decommodification have lower rates of school-based bullying. Overall, our findings illustrate that the national level of social welfare protection, which had been previously neglected in this research literature, is a robust predictor of bullying victimization.

Keywords: bullying, anomie, decommodification, adolescents, PISA, homicide rates

Word Count: 7,962

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School-based bullying is a social phenomenon that affects children worldwide. According to UNESCO (2018), almost a third of 11 to 15-year-old students have been bullied by their peers at school. Not only is bullying a widespread problem, but research also demonstrates that it has devastating consequences for its victims' mental and physical health (Turcotte, Viever, & Gjelsvik, 2015). Despite its widespread nature and severe consequences, the context under which school-based bullying takes place remains poorly understood. While individual, family, and school factors have been studied extensively, some contextual factors have not been as thoroughly examined. For example, only recently have scholars begun to turn their attention to cross-national variation in school-based bullying victimization.

Previous cross-national research on school-based bullying victimization suggests that its prevalence varies significantly across social contexts. The most consistent finding in the cross-national literature is that more economically unequal nations have higher rates of bullying victimization (Due et al., 2009; Elgar et al., 2009; Elgar et al., 2013; Elgar et al., 2019; Pickett & Wilkinson, 2007; cf. Elgar et al., 2015). A greater amount of school-based bullying has also been noted in less economically-developed nations (Elgar et al., 2015; cf. Due et al., 2009), in nations with less educational spending (Elgar et al., 2015) and in certain regions of the world (Craig et al., 2009). Interestingly, some research also suggests that violence primarily involving adults, specifically the homicide rate, is associated with bullying victimization as well (Elgar et al.,

2013). Why are some societies more prone to both higher rates of homicide *and* a greater amount of school-based bullying victimization?

One potential avenue to address this question is to draw upon the more established literature on cross-national variation in homicide rates. Similar to the cross-national bullying victimization literature, income inequality is one of the most consistent predictors of cross-national homicide rates (Nivette, 2011). Additionally, the direct association between the homicide rate and bullying victimization implies that these phenomena stem from similar societal contexts. Therefore, theoretical frameworks designed to explain cross-national variation in homicide may explain variation in bullying victimization as well. In the current study, we draw upon Messner and Rosenfeld's (1994) 'Institutional Anomie Theory' to assess whether the apparent association between the homicide rate and bullying victimization in cross-national research is spurious. However, before presenting this analysis, we must first address the theoretical underpinnings of this study.

Bullying, Homicide and Institutional Anomie Theory

The apparent association between crime rates and school-based bullying in both national (Gimenez, Tkacheva, & Barrado, 2021) and cross-national (Elgar et al., 2013) samples suggests that these phenomena stem from similar societal contexts. Plausibly, both phenomena may be explained by greater degrees of societal 'anomie' as conceptualized in Institutional Anomie Theory (IAT). Building on the research of Merton (1938), Messner and Rosenfeld (1994) examined both the cultural values of the United States and the impact that these values have on institutionally-based social control. Culturally, the American Dream's emphasis on acquiring wealth "by any means necessary" provides the motivation for criminal offending for pecuniary gain. Institutionally, this cultural emphasis on wealth accumulation overrides other normative

concerns, which causes an imbalance between economic and non-economic social institutions (family, polity, education, etc.). This institutional imbalance weakens normative and institutional social control, contributing to elevated rates of crime within the United States as compared with other wealthy 'Western' democracies.

While IAT was originally designed to explain why the homicide rate in the United States is an aberration amongst its peers, it has since been formulated into a general theory to explain crime and deviance (i.e., Chamlin & Cochran, 1995, 2007; Messner & Rosenfeld, 1997; Messner, Thome, & Rosenfeld, 2008). Instead of focusing on the unique 'American Dream', subsequent research on IAT suggests that a general set of values that place acquiring wealth, especially through competition on an unconstrained market, above all other concerns can contribute to a greater motivation to commit criminal offenses due to an egoistic market orientation and less effective social control. In general, cross-national homicide research has empirically supported the basic tenets of this framework (Chamlin & Cochran, 1995; Messner & Rosenfeld, 1997).

One of the primary ways in which IAT has been tested in the literature is by examining the mechanism of "decommodification". Decommodification is a concept that Messner and Rosenfeld (1997) borrow from Esping-Andersen (1990) which refers to the degree to which citizens are freed from market considerations: the greater the degree of decommodification, the greater the ability of citizens to demand a certain good (or service) as a right of citizenship rather than a commodity purchased on a market. Messner and Rosenfeld (1997) argue that decommodification reduces the emphasis on market competition and therefore brings the economy back into "balance" with other social institutions, promoting the normative restraints that enhance social control. Scholars have generally confirmed that social welfare spending is

negatively associated with homicide rates in cross-national samples (Messner & Rosenfeld, 1997; Pratt & Godsey, 2003; Tuttle, 2018).

Some scholars have elaborated upon IAT to explicate the social-psychological characteristics of anomie. As Konty (2005) argues, the cultural elements of anomie result in “microanomie”, which is a value system that promotes self-interest over the collective well-being. Similarly, Groß, Hövermann and Messner (2018) have developed the concept of “market mentality” to operationalize IAT at the individual level. Market mentality emphasizes economic role functions, success, individualism, and monetary-fetishism, all of which place self-interest above considerations of the community. The values promoted by microanomie (or “market mentality”) may produce “frustration, anger and fear when these interests are blocked or unavailable” (Konty, 2005: 124), resulting in higher rates of crime and deviance. Additionally, the egoistic values imparted by a cultural emphasis on market competition and lack of altruism (see Chamlin & Cochran, 1997) indicated by a meager social safety net provide the social and cultural context for conflict and predation based upon self-interest. Therefore, societies that possess a greater degree of balance between economic and non-economic institutions should exhibit cultural values that are less prone to microanomie or market mentality (Hövermann & Messner, 2021).

Specific to the current analysis, microanomie/market mentality are expected to affect the antisocial behavior of adolescents. Konty (2005) finds that the self-enhancing values associated with microanomie contribute to a greater degree of acceptance of deviant behavior as well as more cheating, vandalism, larceny, assault, alcohol intoxication, and marijuana abuse amongst adolescents. Additionally, Groß and colleagues (2018) find that market mentality corresponds with higher rates of self-reported delinquent behavior. Although both of these studies are limited

to a single country, they illustrate the potential relevance of IAT to deviant and delinquent behavior among adolescents, which plausibly includes school-based bullying. In the current study, we utilize these observations on the social psychology of microanomie/market mentality as the foundation for understanding cross-national variation in school-based bullying.

The Current Study

In the current study, we apply IAT to bullying victimization in a cross-national sample of 55 countries. In this analysis, we utilize a (three-tiered) multi-level regression analysis to simultaneously capture dynamics operating at the country, school, and individual level. This analysis could be considered to be a partial test of the social psychology implied by IAT, as we do not assess the intervening mechanisms (microanomie) at the individual level. Instead, we assess whether greater decommodification, implicated by Messner and Rosenfeld (1997) as capturing greater institutional balance between economic and non-economic institutions, is associated with bullying victimization. We hypothesize that bullying victimization will vary inversely with decommodification at the country level, even after accounting relevant factors influencing bullying at the individual level and school level. Additionally, we expect that the association between homicide rates and bullying victimization is spurious after accounting for decommodification.

Method

Data

Our data are drawn primarily from the Programme for International Student Assessment (PISA) (OECD, 2018). This international assessment is carried out by the Organization for Economic Co-operation and Development (OECD) every three years (since 2000). Its objective is to evaluate educational systems by measuring students' performance in mathematics, science,

and reading. In the 2018 round, PISA surveyed 612,004 students attending 21,903 schools located in 79 countries. The sample is representative of the target population: 15 and 16-year-old students attending educational institutions throughout these countries. In addition to a cognitive test, students are asked to answer a background questionnaire concerning their home life and their school/learning experiences. School principals completed a separate questionnaire, which addresses the school system and the surrounding environment.

To select their sample, the OECD (2019) targeted all students born in 2002 among OECD and OECD-affiliated nations, using systematic probability proportional to size sampling. This sampling method involved a multiple stage process in which schools were sampled from a list of eligible schools and stratified by sub-regions within countries. Within these schools, students were selected if they met the age criteria using simple random sampling. Specific standards (such as national review, cognitive labs, centralized transfer of trend material and monitoring/recording of procedures) underlie the PISA questionnaire and the implementation of the findings into the final instruments. More detail concerning the selection of the sample and data collection is located in a technical report prepared by the OECD (2020). There was some missing data within the student and school-level indicators derived from the PISA questionnaire. We follow previous research using PISA data (Fernández-Gutiérrez, Gimenez, & Calero, 2020) by using listwise deletion when conducting the analyses.

These questionnaire responses compiled by PISA serve as the source for our dependent variable, bullying victimization, as well as our student-level and school-level predictors. For country-level data, we draw upon the World Bank (2022) and the International Labor Organization (ILO) (2022). Our final sample was limited to countries with complete data. This sample is not representative of all nations as low-income countries, particularly those located in Africa, are not

included in the sample. Out of the initial (PISA) sample of students within 79 countries, we were limited to a sample of only 55 nations due to missing data in the World Bank and ILO databases. Of the countries not included in the final analysis due to missing data at the country level, there is a fair mix of high-income (Australia, Belgium, Canada, Italy, etc.) and middle-income (Azerbaijan, Kosovo, Malaysia, etc.) nations. These missing nations do not appear to systematically differ in income level or geographical region from the countries included in the final sample. The full list of 79 countries and territories can be located in the technical report provided by the OECD (2020). Overall, our final sample consisted of 286,871 students in 14,192 schools across 55 countries (see Table 1).

Dependent Variable

Our dependent variable is bullying victimization, derived from the PISA questionnaire (PISA code: BEINGBULLIED) asking students how often during the prior 12 months they had the following experiences in school: “Other students left me out of things on purpose”; “Other students made fun of me”; “I was threatened by other students”. The answers students provided to these three prompts were combined to construct a bullying victimization index. Positive values on this scale indicated that the student is exposed to more bullying at school than the average student in OECD countries; negative values indicated the opposite. Descriptive statistics are located in the supplemental materials.

Table 1 shows students' exposure to bullying by country, based on the responses to the three questions used to construct the bullying victimization index. On average, 9.62% of students are frequent victims of bullying. The Netherlands and Japan are the countries with the lowest prevalence of victimization (2.28% and 4.32%, respectively) and the Philippines and the Dominican Republic are the ones with the highest (40.13% and 22.04%). In the United States,

10.32% of students are frequent victims of bullying, which is somewhat higher than the overall mean (9.62%) and the average (7.87%) among European countries.

<Insert Table 1 here>

Independent Variables: Country Level

The primary independent variable is our decommodification index. This index is based upon nine variables derived from the ILO (2022) database. These variables include: 1) population covered by at least one social protection benefit, 2) persons above retirement age receiving a pension, 3) persons with severe disabilities collecting disability social protection benefits, 4) unemployed receiving unemployment benefits, 5) employed covered in the event of work injury, 6) children/households receiving child/family cash benefits, 7) vulnerable persons covered by social assistance, 8) mothers with newborns receiving maternity benefits, and 9) poor persons covered by social protection systems. The index was constructed for only 54 countries of our initial sample of 55 countries, as Montenegro did not provide data to the ILO. We standardized these scores for each individual indicator (using the mean and standard deviation) to create an additive index which is divided by the number of observations for each nation (9). For nations with missing data for one (or more) of these indicators, the overall score is divided by the number of complete observations. Positive values in this index indicate a higher proportion of population covered by social protection systems.

At the country level, we include three other controls, all derived from the World Bank (2022). These variables include the homicide rate, GDP per capita (corrected by purchasing power parity in constant 2017 dollars), and the Gini index. An examination of the frequency

distribution shows that there is high variability and a skewed distribution in the homicide rate. To address these statistical issues potentially leading to biased results, we used a log transformation of the homicide rate for the final regression analyses. For all variables at the national level, data refer to 2018 or the closest year available.

Independent Variables: School Level

Additionally, research suggests that the school environment is a robust predictor of bullying victimization. Previous research suggests that students in private schools (Harris et al., 2019) and schools located in more rural locations (Bradshaw, Sawyer, & O'Brennan, 2009) suffer from greater amounts of bullying victimization. Additionally, a positive school climate is a significant protective factor against school bullying victimization (Hong, & Espelage, 2012; Wang, Berry, & Swearer, 2013; Yang et al., 2018), reinforced by teacher support and enforcement (Rigby, 2020). Therefore, we account for school ownership (public vs. private; PISA code: SC013Q01TA), community location (code: SC001Q01TA), and disciplinary climate (code: DISCLIMA) in our models.

Independent Variables: Student Level

Bullying victimization also varies along several student-level dimensions. Psychologically, students who are more neurotic and have negative emotional reactions to their surroundings seem to be at a greater risk of being bullied (Hansen et al., 2012). Bullying tends to differ somewhat by gender, as recent research in the United States suggests that overall bullying victimization rates for girls may exceed that for boys (Merrill & Hanson, 2016; Pontes et al., 2018). Younger children appear to be at an increased risk of bullying, as children seemingly age out of victimization (Craig et al., 2009; Merrill & Hanson, 2016; Wang, Lannotti, & Nansel, 2009). In previous cross-national research, immigrant status is linked to higher rates of bullying

(Stevens et al., 2020). Student co-operation within schools also appears to be protective against bullying victimization (Bradshaw et al., 2014; Chen et al., 2020; Yang et al., 2018). Finally, there appears to be a somewhat higher incidence of bullying among students of a lower socio-economic status (Tippett & Wolke, 2014). Accordingly, we account for age (code: AGE), gender (code: ST004D01T), immigration status (code: ST019AQ01T), socio-economic status (code: ESCS), perceived teacher support (code: TEACHSUP), student co-operation (code: PERCOOP), feeling socially connected at school (code: BELONG), positive feelings (code: SWBP), and perceived meaning in life (code: EUDMO) in these models. While some of these variables could plausibly be conceptualized at the school level, we follow the structure of the PISA data collection in modeling these variables.

Analytic Plan

We estimate a three-tiered Hierarchical Linear Model (HLM) to assess the impact of the variables outlined above on bullying victimization. This methodology is suitable due to the nested structure of the PISA data: students are grouped in schools and schools are nested in countries. At the school and country levels, we considered variation in the intercepts. This allows us to account for issues of unobserved heterogeneity and to obtain more accurate inferences about the link between decommodification, the homicide rate, and other country-level factors and exposure to bullying at school. To be clear, while we are measuring bullying victimization and the characteristics/perceptions of bullying victims at the individual level, the focus of the theoretical portion of this paper emphasizes bullying *perpetration* and the tenets of IAT. The assumption is that the perpetrators of bullying are located within the schools and countries in which the victims attend school and reside.

HLM models are composed of two parts: one general, common to all contexts (which are the so-called fixed effects) and another that represents the specificity of each context (random effects). The three-level model that we used can be expressed as:

$$Y_{ijk} = \beta_0 + \beta_1 X_{1ijk} + \beta_2 S_{jk} + \beta_3 C_k + \varepsilon_{ijk} \quad (1)$$

$$\beta_0 = \gamma_{00} + v_{0k} + u_{0jk} \quad (2)$$

In the first equation, Eq. (1), Y_{ijk} is the expected value of the being bullied of student i enrolled in school j in a country k ; X_{ijk} , S_{jk} and C_k are vectors of control variables at the individual, school and country level, respectively; and ε_{ijk} is the unexplained component. Eq. (2) is estimated simultaneously and allows us to model the school and country-specific intercepts and the associated complex error structure. v_{0k} and u_{0jk} are the respective deviation of the schools' and the countries' means from the overall mean γ_{00} . They are assumed to be normally distributed, with a mean of 0, and uncorrelated with ε_{ijk} . Estimations were executed using Stata 17 statistical software. The dataset and code to replicate the estimations are located at: <https://drive.google.com/drive/folders/1vGsrI7iI-QKK2X3k1MD7Flrq2jTdsY64?usp=sharing>.

<Insert Table 2 here>

Results

Table 2 shows the results of the estimations of Eqs. (1) and (2), including both the fixed and random effects. The latter, at the bottom of the table, shows the standard deviations from the overall mean, with origin in the school-and country-level variance unaccounted for in the model. We estimate six models in total in Table 2. The main difference between these models is at the

country level. Because there are more issues associated with multicollinearity at higher levels of aggregation (Land, McCall, & Cohen, 1990), we examine different model configurations to confirm that our results are robust. While the bivariate correlation between only two of the variables warrants moderate concern about multicollinearity ($r = .68$ between homicide rates and the Gini index), we examine changes in coefficients across different model configurations to test their stability. Overall, the similarities across model configurations suggest that our findings are robust and are not significantly impacted by multicollinearity issues.

Table 2 presents our findings with student-level results near the top, followed by the school-level and country-level results. The findings at the student and school levels are substantively identical across different model specifications. At the student level, we find that being male and originating in a different country are both positively and significantly ($p < .01$) associated with bullying victimization. Conversely, age, teacher support, student co-operation, feeling socially connected at school, and positive feelings are significantly ($p < .01$) and negatively associated with bullying victimization. The student's economic and cultural status and perceptions of meaning in life are not significantly associated with bullying victimization across these models.

At the school level, we find that students who attended a private school are more likely to be bullied than students in public schools ($p = .029$). Additionally, students who attend schools situated in smaller towns and villages are more likely to report being bullied ($p < .01$). Finally, students who are located within schools with a better disciplinary climate tend to be bullied less often ($p < .01$).

At the country level, our findings change slightly across different model specifications. In an initial analysis (results not shown), we find that the Gini index is positively and significantly

($p < .05$) associated with bullying victimization when no other country-level variables are included. However, when either the decommodification index or the homicide rate are included in the model, income inequality is no longer a statistically significant predictor of bullying victimization, as is apparent in Table 2.

Overall, we find support for our hypothesis that decommodification at the country level is significantly (and negatively) associated with bullying victimization. Additionally, the apparent homicide/bullying association appears to be spurious after accounting for decommodification, confirming our expectations. In Models 2 through 6, decommodification exerts a statistically significant ($p < .05$) and negative impact on bullying victimization. In Models 3, 4 and 5, the inclusion of decommodification causes the homicide/bullying association to no longer reach statistical significance at the .05 level. GDP per capita and the Gini index are not statistically significant predictors of bullying in Table 2. In the final model (Model 6 of Table 2), we remove homicide rates to examine changes in coefficients due to potential multicollinearity concerns between homicide rates and the Gini index. The results remain substantively identical. Overall, it appears that the significant impact of the homicide rate on bullying victimization in previous research may be due to differences in decommodification across countries and is likely a spurious association.

To assess the relative impact of decommodification on bullying victimization, the interaction between the calculated coefficients and the standard deviations of the explanatory variables can be used to understand effect size. According to our calculations, an increase of one standard deviation (SD) in the decommodification index is associated with an average reduction of 0.09 SD in the PISA index of exposure to bullying. To contextualize the importance of this variable, the effect sizes for other variables is generally smaller. For example, an increase of one

SD in the indexes of teacher support and student co-operation — traditional factors associated with bullying— would lead to smaller reductions in the PISA index of exposure to bullying (.03 and .02 SD, respectively).

Supplemental Analyses

We completed supplemental analyses to account for additional theoretical considerations. First, based upon previous research on IAT (Pratt & Godsey, 2002) and social support theory (i.e., Cullen, 1994), we address whether educational expenditures, which have been used as an indicator of the strength of education as an institution (i.e., Maume & Lee, 2003), are significantly associated with bullying victimization. Educational expenditures are measured as a percent of GDP and are drawn from the World Bank (2022) for the year circa 2018, supplemented with OECD (2022) data for the case of the United States. In Models 7 and 8 of Table 3, educational expenditures near statistical significance, although the moderately strong bivariate correlation between educational expenditures and decommodification ($r = .49$) may be causing the partialling fallacy (see Gordon, 1968) to occur between these variables as neither achieve statistical significance when they are both included in the model. In Model 9, after decommodification is removed, educational expenditures exert a statistically significant impact on bullying victimization, indicating that stronger educational institutions are associated with less bullying victimization, supporting the tenets of IAT. The results from this table suggest that educational expenditures reduce bullying victimization, which confirms previous cross-national research (Elgar et al., 2015).

<Insert Table 3 about here>

In Models 8 and 9 of Table 3, we also assess cultural values in relation to bullying victimization. Specifically, inspired by previous research (Smith & Robinson, 2019), and one of the cultural elements implicated by IAT, we address the impact of individualism on bullying victimization. This specific measure of individualism, defined as a preference for individuals (and their immediate families) to be self-sufficient and autonomous rather than dependent and strongly integrated within larger collectives, is derived from Hofstede, Hofstede and Minkov's (2010) original conceptualization of culture (data available at: <https://www.hofstede-insights.com/fi/product/compare-countries/>). Although individualism approaches statistical significance (Model 8 of Table 3), there is no significant relationship between individualism and bullying victimization after accounting for our measures of decommodification and/or educational expenditures. At the student and school levels, the results are substantively identical between Tables 2 and 3, with the lone exception of school ownership (public vs. private), which does not reach statistical significance in the supplemental analyses.

Discussion

This study contributes to our understanding of school-based bullying among adolescents by examining the impact of decommodification. In our sample representing students across 55 countries, we find that nations with greater social welfare protection have lower rates of school-based bullying victimization. Our novel application of IAT to bullying victimization is consistent with research on microeconomic/market mentality amongst juveniles (Groß et al., 2018; Konty, 2005). Microeconomic/market mentality, which represents placing personal interests over collective well-being, is more pronounced in nations with an 'institutional imbalance' between economic and non-economic institutions (Hövermann & Messner, 2021). Our measure of

institutional *balance* (decommodification) is negatively associated with bullying victimization, broadly consistent with the expectations of IAT (i.e., Messner & Rosenfeld, 1994; 1997).

Decommodification partially or completely mediates (or renders spurious) the effects of other relevant variables in the cross-national bullying literature. First, the association between crime rates and bullying observed in previous research (Elgar et al., 2013; Gimenez et al., 2021) may be spurious, due to the dynamics implicated in IAT. When we combine our findings with previous cross-national homicide research, it suggests that decommodification reduces both serious criminal offending committed by adults as well as bullying within schools. Additionally, income inequality is not significantly associated with bullying in our models after accounting for decommodification. The most consistent finding within the cross-national bullying literature is the inequality/bullying association, but previous research has failed to account for decommodification or general social welfare spending. However, the redistributive nature of decommodification causes there to be some conceptual overlap between income inequality and decommodification. Further research is needed to parse these inter-related concepts in relation to bullying victimization.

Our findings have potential public policy implications, but longitudinal research is needed to confirm their relevance to policy. By the logic of IAT, which emphasizes cultural factors, changes in public spending must accompany a cultural shift as well. Decommodification is hypothesized to promote ‘balance’ between economic and non-economic institutions (Hövermann & Messner, 2021), thereby promoting self-transcendent rather than self-enhancing cultural values (Groß et al., 2018; Konty, 2005). This cultural dynamic implied by IAT complicates the implications of a straightforward public policy intervention, as increased spending would ultimately be aimed at achieving a cultural change. Longitudinal research is

needed to examine temporal variation in social welfare expenditures and bullying victimization to establish the degree to which increases in social spending will correspond with decreases in bullying victimization.

While the control variables at the student and school level are not our main focus, some of our findings have implications for the bullying victimization literature. We confirm some previous findings, including that a positive school climate reduces bullying victimization (Wang et al., 2013; Yang et al., 2018), the importance of student cooperation and teacher support (Bradshaw et al., 2014; Chen et al., 2020; Yang et al., 2018), that older students have a somewhat diminished probability of being bullied (Craig et al., 2009; Merrill & Hanson, 2016; Wang et al., 2009), a higher incidence of bullying victimization among immigrants (Stevens et al., 2020), and that negative affective/psychological states correspond with higher rates of bullying victimization (Low & Van Ryzin, 2014). We also find support for the previous findings that private schools (Harris et al., 2019; cf. Khamis, 2015) and schools located in smaller towns (Bradshaw et al., 2009) have higher rates of bullying victimization.

Some of our findings may help inform the literature where previous research findings are somewhat more ambiguous. For example, recent research suggests that girls may face higher rates of bullying (Merrill & Hanson, 2016; Pontes et al., 2018), but some research has suggested the opposite (Haynie et al., 2001; Veenstra et al., 2005). Our findings suggest that boys experience higher rates of bullying victimization within our sample. The discrepancies between previous research findings and our own could be due to differences in the measurement of bullying, as there is a wide variety of ways in which bullying has been operationalized within the research literature. Our measurement of bullying victimization is fairly broad and includes no allusions to differential power dynamics between the perpetrator and victim, which some

researchers have used to define and measure bullying. However, no clear pattern was discovered in measurement differences/similarities and discrepancies in the previous literature. Further research is needed to understand these incongruent findings with special attention paid to measurement issues.

Limitations

Despite our contributions to the literature, we recognize some limitations to this study. Our analysis is limited by the fact that the PISA sample is representative of just 15 and 16-year-old students, which restricts the generalizability of our conclusions. Additionally, the cross-sectional nature of the PISA data collection design warrants caution on making strong claims of causality. This is particularly the case for some of the (individual-level) psychological correlates of bullying. We include the variables ‘feeling socially connected at school’, ‘positive feelings’, and ‘meaning in life’ as controls for protective psychological factors against bullying victimization. However, it is plausible that being a victim of bullying could be causally prior to these perceptions of the school environment and negative feelings/emotions.

Finally, we are unable to directly examine the social-psychological elements of IAT. While our analysis establishes the macro-level association between decommodification, which has been linked to greater market mentality (Hövermann & Messner, 2021), and school-based bullying victimization, we would ideally want to examine whether this country-level factor actually corresponds with less microanomie/market mentality at the individual level. Our research is limited by the fact that our measures of bullying capture the experience of victims rather than perpetrators. Therefore, our individual-level measures cannot address whether microanomie/market mentality is present among offenders. Additionally, while some of our school-level correlates of bullying may hint at microanomie/market mentality, it is still unclear

whether microanomie/market mentality mediates the association between decommodification and bullying victimization at the country level. Finally, despite some indication in the supplemental analysis that the strength of educational institutions, measured as educational spending, is negatively associated with bullying victimization, we cannot rule out alternative theoretical explanations. Namely, the observed relationships between social spending and bullying victimization could plausibly be due to altruism (Chamlin & Cochran, 1997) or social support (Cullen, 1994; Pratt & Godsey, 2002) rather than the mechanisms outlined in IAT.

Conclusion

This study establishes that decommodification is a robust protective factor against bullying victimization. In addition to clarifying one of the reasons why bullying may be associated with adult criminality in previous research, this study also suggests new directions for comparative inquiry on both IAT and bullying victimization. For researchers examining the impact of ‘anomie’, our findings are consistent with the idea that anomic social conditions influence bullying amongst adolescents in similar ways to the criminal behavior of adults. School-based bullying is seemingly far removed from the types of economic motivations outlined by Merton (1938) as the basis of the anomie perspective, such as achieving the ‘American Dream’ through the acquisition of wealth. However, through the more recent theoretical elaboration of microanomie (Konty, 2005) and market mentality (Groß et al., 2018), the application of modern anomie theories can span beyond the borders of typical criminological inquiry into other social harms, such as bullying victimization.

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Table 1*List of Sample Countries, Bullying Data and Country-level Variable Data*

Country	Frequently bullied students	Homicide Rate per 100,000 inhabitants	GDP per capita (in thousands)	Decommodification Index	Gini Index
	%				
Albania	7.141	2.289	13.601	-0.867	33.200
Argentina	11.303	5.324	22.746	-0.564	41.300
Austria	6.825	0.967	55.687	0.925	30.800
Belarus	5.577	2.391	18.885	0.061	25.200
Bosnia and Herzegovina	9.357	1.173	14.420	-0.294	33.000
Brazil	11.784	27.383	14.596	-0.134	53.900
Bulgaria	13.520	1.305	22.182	0.045	41.300
Chile	7.819	4.405	24.259	-0.110	44.400
Colombia	11.677	25.344	14.456	-1.397	50.400
Costa Rica	8.800	11.261	19.427	-0.508	48.000
Croatia	5.941	0.577	27.558	0.096	29.700
Czech Republic	8.239	0.620	39.453	0.295	25.000
Denmark	5.007	1.008	56.103	0.807	28.200
Dominican Republic	22.039	10.050	17.712	-1.032	43.700
Estonia	8.260	2.117	35.308	0.732	30.300
Finland	6.202	1.630	48.191	0.899	27.300
France	6.790	1.199	45.561	0.940	32.400
Georgia	8.355	2.223	14.257	-0.029	36.400
Germany	6.242	0.948	53.660	1.062	31.900
Greece	7.614	0.941	29.712	0.039	32.900
Hong Kong (China)	9.052	0.651	61.072	-0.354	
Hungary	7.423	2.487	31.073	0.435	29.600
Iceland	4.939	0.891	56.158	0.775	26.100
Indonesia	15.205	0.435	11.372	-1.457	37.800
Japan	4.319	0.263	41.074	0.713	32.900
Jordan	12.936	1.359	9.854	-1.145	33.700
Kazakhstan	12.630	5.061	25.544	-0.124	27.800
Latvia	11.317	4.356	29.942	0.597	35.100
Lithuania	9.706	4.569	35.390	0.142	35.700
Luxembourg	6.934	0.338	114.110	0.683	35.400
Macao (China)	10.279	0.317	131.908	-0.602	
Malta	13.857	1.594	43.064	0.348	28.700
Mexico	8.805	29.071	19.992	-0.837	45.400
Moldova	6.435	4.097	12.373	-0.125	25.700
Montenegro	9.083	2.230	20.629		38.500
Netherlands	2.284	0.586	56.455	0.930	28.100
Panama	13.104	9.385	31.049	-1.434	49.200
Peru	5.998	7.909	12.782	-1.825	42.400
Philippines	40.134	6.465	8.516	-1.373	42.300
Poland	8.284	0.730	31.766	0.467	30.200
Portugal	5.268	0.790	34.013	0.453	33.500
Romania	11.513	1.282	28.565	0.470	35.800
Russia	12.355	8.209	26.668	0.647	37.500

Saudi Arabia	7.469	1.266	47.597	-0.712	
Serbia	9.702	1.227	17.355	-0.749	36.200
Slovak Republic	9.177	1.137	32.067	0.405	25.000
Slovenia	6.607	0.481	38.022	0.650	24.600
Spain	5.261	0.621	40.329	0.384	34.700
Switzerland	6.731	0.586	68.479	0.612	33.100
Thailand	12.611	2.582	18.087	-0.264	36.400
Turkey	8.851	2.590	28.299	-0.365	41.900
United Arab Emirates	12.611	0.464	66.968	-2.023	26.000
United Kingdom	10.863	1.205	46.310	0.636	35.100
United States	10.315	4.957	61.391	0.147	41.400
Uruguay	8.458	12.060	21.591	0.499	39.700

Note: All data refer to 2018 or closest year available. A student is frequently bullied if he or she is in the top 10% of the index of exposure to bullying across all countries/economies. The index of exposure to bullying includes the following statements: “Other students left me out of things on purpose”, “Other students made fun of me” and “I was threatened by other students”. The information about students' exposure to bullying is taken from OECD, PISA 2018 Database, Table III.B1.2.1. For homicides rates, we used data from 2017 for Czech Republic, Hungary, Indonesia, Kazakhstan, Peru, Saudi Arabia, Thailand, and United Arab Emirates. For Gini index, we used data from 2017 for Albania, Chile, United Kingdom, Iceland and Serbia; from 2016 for Germany and Montenegro; from 2013 for Japan, from 2011 for Bosnia and Herzegovina; and from 2010 for Jordan. The data for the individual variables comprised within the Decommmodification Index are available at: <https://ilostat.ilo.org/topics/social-protection/>

Table 2*Results of Multi-Level Model Regression Models on Bullying Victimization*

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Fixed-effects parameters</i>						
Intercept	0.785** (0.145)	0.837** (0.125)	0.813** (0.124)	0.804** (0.131)	0.851** (0.147)	0.759** (0.144)
<i>Student-level</i>						
Age	-0.050** (0.008)	-0.052** (0.008)	-0.052** (0.008)	-0.052** (0.008)	-0.053** (0.008)	-0.053** (0.008)
Gender						
Female	Base					
Male	0.228** (0.018)	0.227** (0.018)	0.227** (0.018)	0.227** (0.018)	0.220** (0.018)	0.220** (0.018)
Immigrant background						
Country of test	Base					
Another country	0.040** (0.012)	0.039** (0.012)	0.039** (0.012)	0.039** (0.012)	0.047** (0.011)	0.047** (0.012)
Economic social and cultural status	-0.003 (0.005)	-0.002 (0.005)	-0.002 (0.005)	-0.002 (0.005)	-0.003 (0.005)	-0.003 (0.005)
Teacher support	-0.035** (0.005)	-0.035** (0.005)	-0.035** (0.005)	-0.035** (0.005)	-0.034** (0.005)	-0.034** (0.005)
Student co-operation	-0.016** (0.005)	-0.016** (0.005)	-0.016** (0.005)	-0.016** (0.005)	-0.015** (0.005)	-0.015** (0.005)
Feeling socially connected at school	-0.235** (0.012)	-0.235** (0.012)	-0.235** (0.012)	-0.235** (0.012)	-0.234** (0.012)	-0.234** (0.012)
Positive feelings	-0.072** (0.005)	-0.071** (0.005)	-0.071** (0.005)	-0.071** (0.005)	-0.074** (0.005)	-0.074** (0.005)
Meaning in life	0.002 (0.005)	0.001 (0.005)	0.001 (0.005)	0.001 (0.005)	0.0004 (0.005)	0.0004 (0.005)
<i>School-level</i>						
School ownership						
Public school	Base					
Private school	0.026* (0.012)	0.025* (0.012)	0.025* (0.012)	0.025* (0.012)	0.024* (0.012)	0.024* (0.012)
School's community location						
Village, hamlet or rural area	Base					
Small town	-0.049** (0.012)	-0.049** (0.012)	-0.049** (0.012)	-0.049** (0.012)	-0.050** (0.012)	-0.050** (0.012)
Town	-0.077** (0.013)	-0.077** (0.013)	-0.077** (0.013)	-0.077** (0.013)	-0.079** (0.013)	-0.079** (0.013)
City	-0.092** (0.015)	-0.092** (0.015)	-0.092** (0.015)	-0.092** (0.015)	-0.096** (0.015)	-0.096** (0.015)
Large city	-0.096** (0.017)	-0.096** (0.017)	-0.096** (0.017)	-0.096** (0.017)	-0.105** (0.017)	-0.105** (0.017)
Disciplinary climate	-0.126** (0.005)	-0.127** (0.005)	-0.127** (0.005)	-0.127** (0.005)	-0.126** (0.005)	-0.126** (0.005)

<i>Country-level</i>						
Log of homicide rate	0.056*		0.038	0.040	0.043	
	(0.027)		(0.020)	(0.023)	(0.031)	
GDP per capita	-0.0004			0.0004	0.0004	-0.0004
	(0.001)			(0.001)	(0.001)	(0.001)
Decommodification index		-0.121*	-0.101*	-0.102*	-0.109*	-0.105*
		(0.052)	(0.050)	(0.048)	(0.051)	(0.050)
Gini index					-0.001	0.003
					(0.004)	(0.003)
<i>Random-effects parameters</i>						
Country: Identity sd(_cons)	0.216**	0.209**	0.205**	0.205**	0.210**	0.213**
	(0.050)	(0.046)	(0.045)	(0.045)	(0.046)	(0.046)
School: Identity sd(_cons)	0.146**	0.147**	0.147**	0.147**	0.145**	0.145**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
sd(Residual)	0.948**	0.947**	0.947**	0.947**	0.947**	0.947**
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)
<i>Grouping information</i>						
Students	286,871	282,010	282,010	282,010	269,944	269,944
Schools	14,192	14,132	14,132	14,132	13,747	13,747
Countries	55	54	54	54	51	51

Robust standard errors adjusted for clustering at country level. * = $p < .05$, ** = $p < .01$

Table 3*Supplemental Results of Multi-Level Model Regression Models on Bullying Victimization*

	(7)	(8)	(9)
<i>Fixed-effects parameters</i>			
Intercept	0.907** (0.184)	0.830** (0.180)	0.818** (0.124)
<i>Student-level</i>			
Age	-0.053** (0.008)	-0.053** (0.008)	-0.052** (0.008)
Gender			
Female	Base		
Male	0.212** (0.016)	0.212** (0.016)	0.214** (0.016)
Immigrant background			
Country of test	Base		
Another country	0.056** (0.012)	0.056** (0.012)	0.055** (0.012)
Economic social and cultural status	-0.004 (0.005)	-0.004 (0.005)	-0.003 (0.005)
Teacher support	-0.032** (0.004)	-0.032** (0.004)	-0.033** (0.004)
Student co-operation	-0.017** (0.006)	-0.017** (0.006)	-0.018** (0.006)
Feeling socially connected at school	-0.232** (0.013)	-0.232** (0.013)	-0.233** (0.013)
Positive feelings	-0.072** (0.005)	-0.071** (0.005)	-0.074** (0.005)
Meaning in life	0.0003 (0.005)	0.0003 (0.005)	-0.00001 (0.005)
<i>School-level</i>			
School ownership			
Public school	Base		
Private school	0.018 (0.013)	0.018 (0.013)	0.020 (0.013)
School's community location			
Village, hamlet or rural area	Base		
Small town	-0.054** (0.011)	-0.054** (0.011)	-0.052** (0.011)
Town	-0.086** (0.012)	-0.086** (0.012)	-0.082** (0.012)
City	-0.102** (0.013)	-0.102** (0.013)	-0.098** (0.014)
Large city	-0.120** (0.014)	-0.120** (0.014)	-0.116** (0.014)
Disciplinary climate	-0.126** (0.005)	-0.126** (0.005)	-0.127** (0.005)

Country-level

GDP per capita	-0.001 (0.001)	-0.003 (0.002)	-0.003 (0.002)
Decommodification index	-0.044 (0.082)	-0.086 (0.098)	
Gini index	0.006 (0.003)	0.006 (0.003)	0.010* (0.003)
Educational expenditures	-0.043 (0.026)	-0.052 (0.027)	-0.064* (0.031)
Individualism		0.004 (0.002)	0.003 (0.002)
<hr/> <i>Random-effects parameters</i> <hr/>			
Country: Identity sd(_cons)	0.213** (0.047)	0.207** (0.043)	0.211** (0.044)
School: Identity sd(_cons)	0.140** (0.008)	0.140** (0.008)	0.141** (0.008)
sd(Residual)	0.945** (0.017)	0.945** (0.017)	0.946** (0.017)
<hr/> <i>Grouping information</i> <hr/>			
Students	244,970	244,970	250,432
Schools	12,660	12,660	12,850
Countries	48	48	49

Robust standard errors adjusted for clustering at country level. * = $p < .05$, ** = $p < .01$