

The polarizing effect of economic inequality on class identification: Evidence from 44 countries

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Received 28 March 2011; received in revised form 9 January 2012; accepted 9 January 2012

Abstract

Using cumulative logit mixed models fitted to *World Values Survey* data from 44 countries, we explore the impact of economic conditions – both at the individual-level and the national-level – on social class identification. Consistent with previous research, we find a positive relationship between household income and class identification in all countries that we explore, though this relationship varies substantially. Also corroborating previous research, we find that ‘low’ class identifications are more likely in poor countries than in rich ones. However, in contrast to previous research that has neglected the role of inequality, our results indicate that the effect of economic development diminishes if income inequality is considered in the same model. We further demonstrate that income inequality has an important polarizing effect on class identification. Specifically, the relationship between household income and class identity tends to be strongest in countries with a high level of income inequality.

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Keywords: Class identification; Class awareness; Economic development; Income inequality

1. Introduction

The study of class identity and awareness has a long tradition in political sociology and stratification research (Centers, 1949; Davis & Robinson, 1988; Hodge & Treiman, 1968; Hout, 2008; Jackman & Jackman, 1983; Kelley & Evans, 1995; Vanneman & Pampel, 1977; Wright, 1997). While it is generally accepted that class identification and awareness differs significantly by country (Evans & Kelley, 2004; Oddsson, 2010), less is known about the role economic context plays in these differences. Of particular interest in this regard is the role of income inequality. Stemming back as far as

Marx (1847), a longstanding argument suggests that class awareness would be strongest if class differences are clearly marked. Weber (1978: 305–307) similarly argued that people are most likely to consider their ‘class situation’ as a ‘status group’ if class-related differences in life chances are clear. Despite the prominence of arguments regarding the role of inequality, they have seldom been empirically evaluated.

While there are exceptions, most studies on class identification have typically involved individual country analyses (Davis & Robinson, 1998; Goldman, Cornman, & Chang, 2006; Hayes & Jones, 1992; Oddsson, 2010; Shirahase, 2010; Surridge, 2007), or at most, an analysis of a collection of only a few countries separately (e.g., Baxter, 1994; Evans, Kelley, & Kolosi, 1992; Johnston & Baer, 1993; Wright, 1997). These studies imply the importance of national economic context, but they are far from conclusive. To gain better purchase on the sources

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of class identity, an extensive cross-national analysis that simultaneously assesses many countries is necessary. The present research attempts to shed light on this issue by exploring class identity in 44 countries.

We start with the premise that one's own economic standing, which we measure by their relative position in the distribution of household incomes in their country, is a driving force behind class identity. We also consider the role of national-level economic prosperity and economic inequality. We will show that relative to those living in poor societies, people in rich societies tend to hold higher class identities. However, this relationship is weakened significantly once income inequality is considered. We will also demonstrate that income inequality has a profound effect on class identities. Specifically, the more unequal a society, the stronger the relationship between household income and class identity is likely to be.

1.1. Previous research on class identity and awareness

Most people believe that social classes exist (Argyle, 1994; Popitz, Bahrdy, Juenes, & Kesting, 1969; Vanneman & Cannon, 1987), understand class labels (Gilbert, 2003; Jackman & Jackman, 1983; Reid, 1998), and routinely place themselves in class categories (Cousins & Brown, 1975; Davies, 1967; Evans et al., 1992; Moorhouse, 1976; Wright, 1985). Nevertheless, self-reports of social class are often poor measures of objective class position in most societies (Kelley & Evans, 1995; Oddsson, 2010). In this regard, it is a well-known finding that people often identify with the middle classes, regardless of their economic position (Evans & Kelley, 2004).

Explanations for middle class identification among the working class extend back several decades. For example, Goldthorpe et al.'s (1969) affluent worker thesis suggests that improved economic conditions in mid-20th century Britain lifted workers' perceptions of their class position in society. A similar argument is implicit in Inglehart's (1987) post-materialist thesis, which argues that social class has diminished in importance due to improvements in living standards resulting from economic development. While such arguments make some intuitive sense, it is not only people from the working class who get it 'wrong'. Recent research demonstrates that a substantial proportion of people in high class positions also tend to see themselves as belonging to the middle class in both affluent Western countries (Kelley & Evans, 1995; Oddsson, 2010) and the less affluent countries of Central and Eastern Europe (Evans et al., 1992).

Particularly relevant to this 'middle class' identity bias is 'reference group theory', which contends that people form perceptions of their class standing by comparing themselves to others in their social environment. According to this theory, public opinion is characterized by a 'funnel effect', where people across the class structure develop a dominant 'middle class' consensus. In this regard, Kelley and Evans (1995) demonstrate that subjective perceptions of class were relatively similar across six Western democracies – the United States, Great Britain, Australia, Switzerland, Austria, and Germany. They argue that in all six countries 'reference group' processes distort people's perceptions, encouraging them to identify with the middle classes.

Some further argue that when people make references to the 'middle class' they tend to consider similarities in consumption patterns rather than production relations (Clement and Myles, 1994). From this view, many working class people identify with the middle class because they perceive that they have a very similar lifestyle. One way to view this phenomenon is that people do not understand class structure well enough to give accurate answers to abstract questions about where they fit within it. Alternatively, people may simply be less concerned with occupational differences and more concerned with economic rewards.

Although appealing in some respects, reference group theory fails to explain why middle class identification is higher in some societies than others. On this point, Wright's (1985) research on class identification in the United States and Sweden provides some insight. Using complex measures of class identity, Wright demonstrates results that are consistent with Marx's (1968) idea of a class-for-itself. He suggests that class awareness is highest when people perceive that they share interests and experiences with others of the same class position. This begs the question, then, of 'what contextual factors influence perceptions of shared class interests, and concomitantly, class identity?'

1.2. Cross-national differences in class identity and awareness

Some studies suggest that there is little difference in the levels of class awareness across modern countries. For example, Vanneman (1980) argued that perceptions of social class divisions in the 1970s were as sharply defined in the United States as they were in Britain, despite that class was more politicized in the latter. Similarly, Wright's (1989) analysis of class structures in Sweden and the United States concludes that the pattern of class consciousness was essentially similar in the

two countries, although Swedish workers tended to be more anti-capitalist than were US workers.

Other evidence indicates that there are, indeed, cross-national differences in class identity. For example, Robinson and Kelley's (1979) early study demonstrates that fundamental differences in class structure resulted in class awareness being stronger in Britain than in the US. Similarly, in contrast to his earlier work, Wright (1997) concludes that there are significant differences in class consciousness in the US, Sweden, and Japan. He contends that "state employment may help to explain greater ideological demarcation between the middle class and the capitalist class in Sweden by reducing the material dependency of a significant segment of the middle class from the capitalist class" (1997: 459). This, of course, implies that economic inequality influences class identities (see also, Johnston & Baer, 1993). Although he provides no formal testing of the idea, Wright also surmises that economic development may influence class identity and consciousness. Kikkawa (2000) provides a similar explanation for a decline in class identification in Japan that corresponded with a period of vast economic growth.

More recent research on class identity has begun to compare many countries simultaneously. While these studies lose detail in their explanations, they improve on country specific analyses by allowing the systematic investigation of national context. For example, Kelley and Evans' (2004) examination of class identification in 21 nations between 1987 and 1998 reveals that economic prosperity strengthens people's sense of 'upper class' identification. On average, regardless of their economic position, people in richer countries tend to report being higher in the class hierarchy than do people from poorer countries. Although data restrictions prevented them from analyzing many countries with widely varying degrees of economic development, Evans and Kelley (2004) tentatively concluded that living in more affluent societies might raise people's subjective images of their place in the class structure.

Other evidence suggests that economic growth could disproportionately strengthen class identity for those on the lower end of the income distribution. Economic growth can generate higher expectations for consumption and social mobility, especially among those in the lower classes (Logan, 1977; see also Gurr, 1970; Huntington, 1968; Olson, 1963). The fruits of economic growth are seldom, if ever, distributed equally among all economic groups, however (Atkinson & Piketty, 2007; Kenworthy, 2010; Smeeding, 2005). A concomitant growth in inequality could result in the economic expectations of lower class individuals not being realized. As

a result, a large portion of the working class could move away from middle class identification toward the lower end of the class distribution (Shirahase, 2010). It is clear, then, that this argument is only indirectly about economic development. At the heart of the argument is the impact of economic inequality. Nevertheless, as yet, no research has directly addressed the relationship between national-level inequality and class identity. Given that related evidence suggests that inequality shapes a wide array of attitudes and behaviors (e.g., Andersen & Fetner, 2008; Garand, 2010; Solt, 2008), it is possible that similar mechanisms are associated with class identities.

1.3. Research questions

Our main goal is to determine the economic conditions that influence subjective class identity. We improve on previous research by systematically exploring how national economic factors influence class identity in a much larger number of countries than any research has explored previously. We also provide the first systematic test of the role of inequality. With this in mind, we derive and test three sets of hypotheses from the literature review above:

Hypothesis 1. As household income rises, people tend to have higher class identifications. We expect this relationship to hold in all countries, though we also expect to find significant cross-national variation.

Hypothesis 2. Based on previous research, we expect that economic prosperity has a significant impact on subjective class identities. That is, relative to those in poorer countries, those in rich countries will tend to place themselves higher in the class structure.

Hypothesis 3. Finally, we further expect the relationship between household income and class identity to be moderated by national-level income inequality. Specifically, we expect those at the bottom of the income distribution to be more aware of their relative disadvantage when inequality is high, and thus more likely to identify with lower class positions. We also expect that high income earners are more likely to place themselves in higher class positions when income inequality is high. The driving force behind this increase in class polarization as inequality rises is rather simple: divisions between classes become clearer, so people are better able to discern them and place themselves accordingly.

We test these hypotheses using individual-level data from the *World Values Survey* and national-level data from various official sources.

2. Data and methods

2.1. Individual-level survey data

The *World Values Survey* (Inglehart et al., 2006) consists of a collection of nationally representative samples of adults. The survey was administered in five waves in 87 countries over about a 30-year period, though not all countries were surveyed each year. Because it included the relevant measures, our analysis relies only on data from the 2005 wave. The required information for our study was available for a total of 44 countries from the Americas, Europe, South Asia, Africa, and Oceania. We limit our analysis to respondents between the ages of 35 and 65 on the grounds that people in this range are likely to be well established in the labor force and thus have relatively stable class positions. After removing observations for which data were missing, the analytical sample size is 11,470 individual respondents nested within 44 countries. The countries included in the analysis, and some descriptive information for each of them, are displayed in Table 1.

2.1.1. Dependent variable: class identity

Consistent with previous research (Goldman et al., 2006; Johnston and Baer, 1993; Oddsson, 2010), our dependent variable taps class identity by a single questionnaire item:

People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the (read out and code one answer): (1) 'Upper class', (2) 'Upper middle class', (3) 'Lower middle class', (4) 'Working class', (5) 'Lower class'.

In order to avoid confusion in interpretation of the statistical models, we reversed the coding of this variable so that high values represent high social class identity and low values represent low class identity responses.

2.1.2. Individual-level predictors

The most important individual-level predictor is *household income*, which is measured in deciles. In other words, we do not tap income *per se*, but rather respondents' relative positions in the distribution of household incomes in their country of residence.² Our statistical models control for gender, age (measured in years), and

² We acknowledge that income is only one element of social class. A more standard approach would employ an occupation-based measure of social class to capture not only economic position but also structures of power (Wright, 1985, 1997) and life chances not necessarily

education. Education is divided into three categories: (1) less than secondary (the reference category), (2) secondary school diploma, and (3) university or college degree.

2.2. National-level data

2.2.1. Economic development

Level of economic development is measured by *GDP per capita* in 2005 U.S. dollars. For half of the countries, GDP per capita was obtained from the *Organization for Economic Co-Operation and Development* (OECD). For the non-OECD countries, GDP per capita was obtained from the *World Bank* (<http://www.worldbank.org>). Following common practice, we enter the log of GDP per capita in our final models.³

2.3. Income inequality

We measure income inequality using the *Gini coefficient for equivalized household incomes after transfers*. The equivalized household income – which applies to all members of a particular household – is calculated by dividing the unadjusted household income by the square root of the number of household members. In other words, our concern is with the *actual* levels of inequality that people experience rather than the level of market generated inequality (Kenworthy and McCall, 2007). Theoretically, the Gini has a range from 0 (perfect equality) to 1 (perfect inequality). Gini measures were obtained from the *Luxembourg Income Study* (LIS) (2005), and when not available from the LIS, from the *Standardized World Income Inequality Database* (Solt, 2009).⁴

We standardize both national context variables to have a mean of 0 and standard deviation of 1 so that their effects in the statistical models can be directly compared. The data sources for both economic development and income inequality for each country are identified in Table 1.

associated with income (Erikson et al., 1992). Occupation was not measured consistently across the 44 countries we analyzed, however.

³ We also explored other specifications for the effect of GDP per capita, including a linear effect and a quadratic polynomial. Taking the log of GDP consistently resulted in the best model fit.

⁴ As with the effects of GDP, we also tested the impact of other specifications for the effect of the Gini coefficient – e.g., a quadratic polynomial, and the square of the Gini coefficient – on model fit. In most cases, the linear specification adequately captured the relationship between the Gini coefficient and subjective class attitudes.

Table 1
Descriptive statistics for each country. Countries are rank ordered by level of economic development (GDP).

| Country | Sample size | Individual-level data | | | | | National-level data | |
|-------------------|-------------|-----------------------------------|-------------------------------------|---|---|------------------------------------|---------------------|------------------------------|
| | | Proportion. reporting lower class | Proportion. reporting working class | Proportion reporting lower middle class | Proportion reporting upper middle class | Proportion. reporting higher class | GDP per capita | Income inequality (Net Gini) |
| Norway | 135 | 0.05 | 0.214 | 0.406 | 0.326 | 0.004 | 47,319 ^a | 0.256 ^c |
| U.S.A. | 171 | 0.07 | 0.034 | 0.341 | 0.276 | 0.008 | 42,494 ^a | 0.372 ^c |
| Switzerland | 98 | 0.012 | 0.112 | 0.394 | 0.453 | 0.028 | 35,478 ^a | 0.268 ^c |
| Canada | 232 | 0.055 | 0.325 | 0.317 | 0.295 | 0.008 | 35,033 ^a | 0.318 ^c |
| Australia | 141 | 0.033 | 0.317 | 0.351 | 0.292 | 0.008 | 33,963 ^a | 0.312 ^c |
| Andorra | 229 | 0.015 | 0.251 | 0.437 | 0.295 | 0.001 | 32,650 ^b | 0.268 ^d |
| Sweden | 138 | 0.047 | 0.165 | 0.372 | 0.398 | 0.019 | 32,298 ^a | 0.237 ^c |
| Germany | 185 | 0.046 | 0.308 | 0.402 | 0.237 | 0.007 | 31,366 ^a | 0.278 ^c |
| Finland | 119 | 0.027 | 0.356 | 0.363 | 0.24 | 0.014 | 30,644 ^a | 0.252 ^c |
| Japan | 151 | 0.089 | 0.306 | 0.444 | 0.15 | 0.01 | 30,312 ^a | 0.31 ^d |
| Italy | 95 | 0.03 | 0.381 | 0.312 | 0.27 | 0.008 | 28,144 ^a | 0.338 ^c |
| Spain | 180 | 0.018 | 0.251 | 0.694 | 0.03 | 0.008 | 27,377 ^a | 0.351 ^c |
| S. Korea | 263 | 0.059 | 0.169 | 0.543 | 0.223 | 0.007 | 22,783 ^a | 0.301 ^d |
| Cyprus | 199 | 0.023 | 0.217 | 0.348 | 0.387 | 0.025 | 20,330 ^b | 0.291 ^d |
| Slovenia | 155 | 0.031 | 0.349 | 0.378 | 0.229 | 0.012 | 17,871 ^a | 0.24 ^d |
| Taiwan | 212 | 0.048 | 0.342 | 0.329 | 0.272 | 0.008 | 14,985 ^b | 0.305 ^d |
| Poland | 125 | 0.131 | 0.486 | 0.27 | 0.105 | 0.008 | 13,786 ^a | 0.32 ^c |
| Chile | 174 | 0.13 | 0.262 | 0.46 | 0.135 | 0.013 | 13,031 ^a | 0.48 ^d |
| Trinidad & Tobago | 195 | 0.126 | 0.335 | 0.339 | 0.164 | 0.036 | 11,397 ^b | 0.376 ^d |
| Turkey | 374 | 0.055 | 0.268 | 0.392 | 0.266 | 0.018 | 11,391 ^a | 0.45 ^d |
| Brazil | 303 | 0.273 | 0.355 | 347 | 0.019 | 0.006 | 8603 ^a | 0.486 ^d |
| S. Africa | 541 | 0.319 | 0.238 | 0.213 | 0.195 | 0.035 | 8504 ^a | 0.679 ^d |
| Malaysia | 278 | 0.112 | 0.331 | 0.278 | 0.25 | 0.029 | 5329 ^b | 0.371 ^d |
| Uruguay | 162 | 0.163 | 0.388 | 0.356 | 0.092 | 0.002 | 4995 ^b | 0.43 ^d |
| Romania | 234 | 0.207 | 0.348 | 0.279 | 0.158 | 0.008 | 4572 ^a | 0.343 ^c |
| China | 208 | 0.219 | 0.305 | 0.414 | 0.056 | 0.005 | 4067 ^a | 0.44 ^d |
| Bulgaria | 146 | 0.106 | 0.576 | 0.21 | 0.106 | 0.001 | 3510 ^b | 0.298 ^d |
| Peru | 319 | 0.123 | 0.497 | 0.256 | 0.117 | 0.006 | 2901 ^b | 0.503 ^d |
| Thailand | 228 | 0.016 | 0.327 | 0.444 | 0.207 | 0.005 | 2797 ^b | 0.411 ^d |
| Serbia | 236 | 0.114 | 0.368 | 0.36 | 0.15 | 0.008 | 2660 ^b | 0.358 ^d |
| India | 385 | 0.28 | 0.176 | 0.34 | 0.159 | 0.045 | 2078 ^a | 0.346 ^d |
| Morocco | 399 | 0.11 | 0.475 | 0.341 | 0.072 | 0.002 | 1933 ^b | 0.413 ^d |
| Ukraine | 191 | 0.076 | 0.362 | 0.381 | 0.169 | 0.012 | 1829 ^a | 0.36 ^d |
| Georgia | 223 | 0.14 | 0.218 | 0.499 | 0.141 | 0.002 | 1434 ^b | 0.396 ^d |
| Indonesia | 288 | 0.102 | 0.082 | 0.555 | 0.255 | 0.006 | 1269 ^b | 0.352 ^d |
| Egypt | 723 | 0.221 | 0.198 | 0.443 | 0.129 | 0.008 | 1231 ^b | 0.335 ^d |
| Moldova | 146 | 0.056 | 0.376 | 0.252 | 0.234 | 0.042 | 831 ^a | 0.38 ^d |
| Zambia | 416 | 0.326 | 0.18 | 0.234 | 0.213 | 0.047 | 634 ^b | 0.509 ^d |
| Vietnam | 288 | 0.04 | 0.813 | 0.097 | 0.049 | 0.002 | 625 ^b | 0.38 ^d |
| Ghana | 397 | 0.421 | 0.275 | 0.225 | 0.065 | 0.014 | 476 ^b | 0.408 ^d |
| Mali | 266 | 0.124 | 0.189 | 0.39 | 0.263 | 0.035 | 457 ^b | 0.388 ^d |
| Burkina Faso | 345 | 0.486 | 0.159 | 0.29 | 0.065 | 0.001 | 403 ^b | 0.47 ^d |
| Rwanda | 411 | 0.59 | 0.126 | 0.226 | 0.056 | 0.002 | 232 ^b | 0.441 ^d |
| Ethiopia | 585 | 0.249 | 0.26 | 0.32 | 0.127 | 0.043 | 144 ^b | 0.279 ^d |

^a Source of national-context data: OECD.

^b Source of national-context data: World Bank.

^c Source of national-context data: Luxembourg Income Survey.

^d Source of national-context data: SWIID.

2.4. Statistical models

We start by fitting a separate ordered logit model predicting the five-class identification variable for each country. Although our emphasis is on the effects of household income, these models also control for age, gender and education. These models allow us to explore the extent to which the effect of household income on class identity varies across countries, setting the stage for the rest of the analysis. In other words, the results from these models are used to assess our first hypothesis regarding the relationship between individual-level household income and class identity. We also pay close attention to variation in this relationship across countries.

We then fit a set of cumulative logit mixed models to the pooled data from all 44 countries to predict class identification. These models extend from hierarchical linear models and ordered logit models to accommodate random effects in models predicting dependent variables with order responses. Such models are ideal for our purposes because they allow us to account for the clustering of respondents within countries. Our baseline model takes the following form:

$$\begin{aligned} \text{logit}(P(\text{Class identity}_i \leq j)) \\ = \theta_j - \beta_1 \text{ age} + \beta_2(\text{gender}_i) + \sum_{m=1}^2 \gamma_m(\text{education}_i) \\ + \beta_3(\text{household income}_i) + u(\text{country}_i) \end{aligned}$$

where $i = 1, \dots, n$, refers to the individual respondents, and $j = 1, \dots, J - 1$ refers to the ordered categories of the class identity response variable. In other words, the model determines the cumulative probability of the i th individual respondent falling in the j th class identity category or below, where the θ_j represent the threshold points (also known as the cut-points). Finally, $u(\text{country}_i)$ specifies a random effect for country, meaning that the model explicitly allows for different overall levels of class identification according to country.⁵ The same random component is applied to each threshold point, meaning

⁵ One of the goals of the paper is to test whether income has differential effects according to the level of income inequality in the country. Ideally, then, our statistical models would specify a random effect for household income. That is, the models would allow a different household income effect for each country. The standard approach would test for the interaction between household income and income inequality only after determining that the variance component for the household income effect was statistically significant. Unfortunately due to the complexity of the models, they failed to converge when specified in this manner.

that the larger the random component for any particular country, the greater the cumulative probability (*i.e.*, of moving up the class identity scale) for individuals within that country. Put another way, the random effect tells us how much the cut-points shift from the mean for a particular country (see Agresti, 2010: 281–287 for more details). The country effects are assumed to be independent and normally distributed, $u(\text{country}_i) \sim N(0, \sigma_u^2)$. The variance component for these effects, σ_u^2 , is estimated simultaneously with the fixed effects in the model.⁶

Although the basic structure of the mixed models fitted to the pooled data parallels that of the individual country models – *i.e.*, they include age, gender, education and household income as predictors – the model is extended to consider national context. Model 1 includes only the effect of household income. Model 2 builds on this model by including all other individual-level predictors to provide a more rigorous test of the effect of household income. In order to test our second hypothesis, Model 3 extends the model by adding GDP per capita as a predictor. Model 4 further adds the Gini coefficient to test the relationship between economic inequality and class identity. Finally, Model 5 adds the cross-level interaction between household income and the Gini coefficient, allowing us to test our final hypothesis.

3. Results

Some descriptive information for each of the 44 countries in our analysis is presented in Table 1. In particular, the proportions falling in each of the five categories of the class identity variable, GDP per capita, and the Gini coefficient for household incomes after taxes are listed. Countries are displayed in descending order according to their level of economic development. The analytical sample sizes for each country are also displayed.

A comparison of the proportions in each of the five class identity categories suggests that responses differ quite widely by country. This is especially evident from the proportion reporting ‘lower’ class identification, which reaches approximately half in some countries and is almost 0 in others. There is also considerable variation in the proportion of respondents identifying with the middle classes. An exception is ‘upper’ class

⁶ Maximum likelihood estimates were calculated using the Laplace approximation to compute the likelihood function. To obtain these estimates, we relied on routines in the ordinal package for R (Christensen, 2011).

identification, which was reported by very few respondents in all countries. In summary, Table 1 provides preliminary evidence that country-level variation exists in people's opinions toward their place in the class structure. This variation, coupled with the economic diversity of our sample, presents an ideal scenario for examining the effect of economic conditions and class identification.

We now turn to Fig. 1, which displays the 'average' class identity for each country according to its levels of economic development and income inequality. The class identity average is simply the mean score for the five class categories scored from 1 to 5, with 1 representing 'low' class and 5 representing 'high' class. Consistent with our second hypothesis, panel (a) suggests a positive relationship between GDP per capita and class identity, though this relationship is not particularly strong. Panel (b), on the other hand, suggests a negative association between income inequality and class identities. Of course, these findings should be interpreted cautiously because they do not consider economic conditions at the individual level. Nonetheless, they suggest the importance of exploring the effects of these two contextual factors in more sophisticated statistical models.

Recall that our first set of hypotheses expects income to have a positive impact on class identification in all countries, though we also expect that the strength of this effect varies significantly by country. Fig. 2 provides compelling evidence that income has a positive effect on class identification in all 44 of the countries that we examined. The income coefficients from the ordered logit models fitted to each country separately are plotted against GDP per capita (panel (a)) and the Gini coefficient (panel (b)). We can clearly see that in all countries household income has a positive effect. Moreover, all of the coefficients are statistically significant ($p < .001$). It is also clear that there is large variation in the income effect. Still, at this point there is little evidence that economic development or income inequality influence the relationship between individual-level income and class identification. The OLS regression lines displayed in both panels of Fig. 2 are nearly horizontal, suggesting that economic context is not important.⁷ Again, we must be careful not to over-interpret these figures, however, because each context variable is considered independently. We shall demonstrate shortly that when they are

simultaneously considered in the same statistical model the story changes.

The estimates from the cumulative logit mixed models are displayed in Table 2. Recall that these models improve on our previous analyses because they control for the demographic composition of countries when assessing the effect of the context variables. They also allow us to systematically test whether household income interacts with national-level income inequality. In other words, these models provide rigorous tests of our second and third hypotheses.

Models 1 and 2 test for cross-national differences in overall levels of class identification and the general effect of household income averaged across all countries. For both Model 1, which includes no individual-level variables except household income, and Model 2, which includes controls for age, gender and education, both the income coefficient and the variance component for country are statistically significant. We thus find compelling evidence that household income has a positive association with class identification, and that class identification varies significantly across countries. It is also important to note that the income effect changes very little after the other individual-level variables are added to the model. The coefficient drops only slightly from 0.513 to 0.454 from Model 1 to Model 2. In other words, household income has a profound impact on class identity, and this effect is independent of age, gender and education.

Model 3 provides a preliminary test of the impact of economic development on class identification. Although this model is limited because it does not consider the role of economic inequality, it is consistent with standard research on the topic. In short, the findings from this model support previous conjectures that GDP per capita has a positive influence on class identity. The GDP effect is both strong and statistically significant. This finding does not withstand a more rigorous test, however. As Model 4 demonstrates, when we simultaneously consider the effect of income inequality, economic development no longer has a statically significant effect on class identification.

It is interesting that neither GDP per capita nor the Gini coefficient have a statistically significant effect on class identification when both are included in the model. This casts doubt on the standard argument that economic prosperity is associated with higher class identification. Without much reflection, it might also seem problematic for our third hypothesis regarding the role of income inequality, but more thoughtful consideration leads to a different conclusion. We have no reason to expect income inequality to have a general and unqualified

⁷ Although South Africa's very high income inequality (Gini=0.678) is an outlier in panel (b) of Fig. 2, it is not influential on either the regression line shown in the figure or in the statistical models to follow later. That is, the results change very little when data from South Africa are excluded.

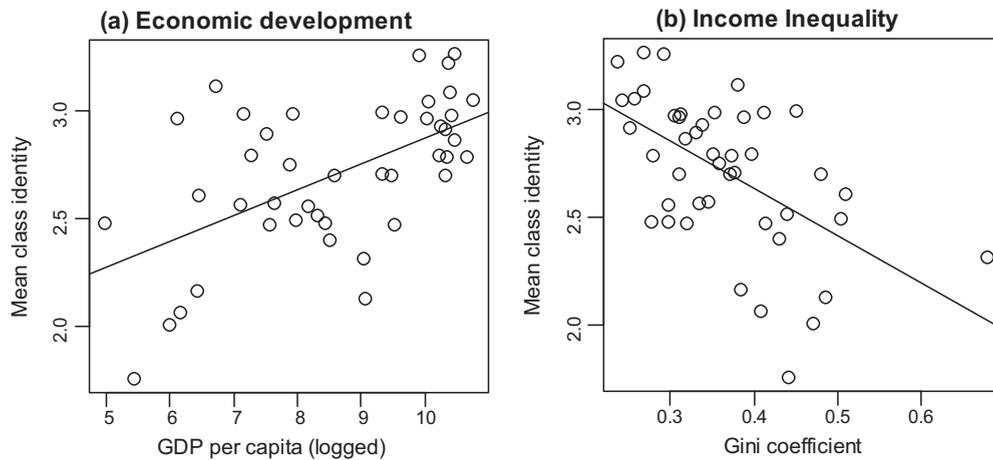


Fig. 1. Country averages on the five-point class identity scale by (a) level of economic development and (b) level of income inequality.

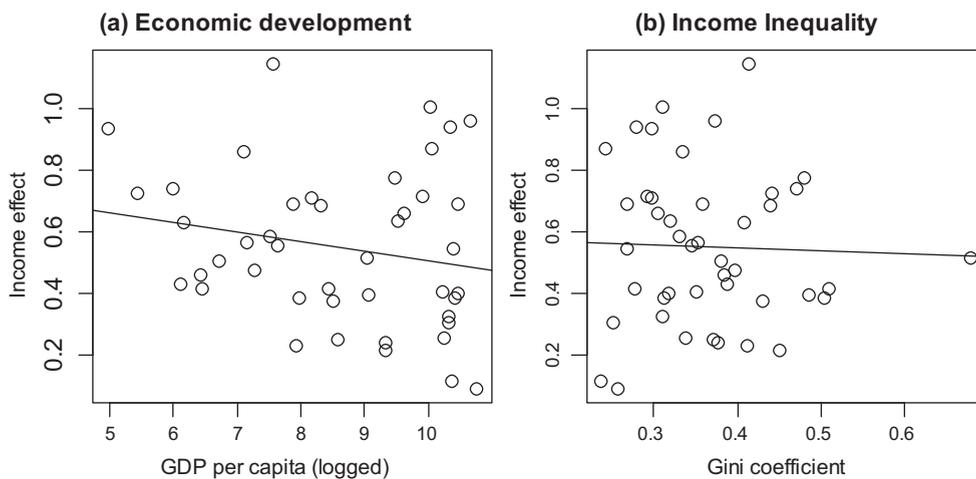


Fig. 2. Relationship between household income and class identity by (a) level of economic development and (b) level of income inequality. Estimates of income effect are from 44 country-specific ordered logit models predicting class identity.

effect on class identity. Instead, our theory is about how income inequality influences the relationship between household income and class identification. We thus expect an interaction between the Gini coefficient and income inequality, but have no reason to expect that income inequality influences class identification for everyone equally.

Model 5 confirms our hypothesis that income inequality moderates the relationship between household income and class identification. Still, while the coefficients provide clear evidence that household income and the Gini coefficient interact, they give little indication of the nature of this interaction. Given the complexity of the model – *i.e.*, it is inherently nonlinear and contains interaction terms – it is nearly impossible to comprehend how the income effect differs according to the Gini coefficient from the coefficients alone. We have thus

calculated fitted probabilities representing the effects of the two variables and displayed them in Fig. 3.⁸

Fig. 3 contains five graphs demonstrating the effects of household income and income inequality, one for each of the class identification categories. The lines in each graph represent fitted values for two different within country household income levels: the top decile (noted by the broken lines) and the bottom decile (noted by the solid lines). Focusing on the distance between the lines as the Gini coefficient rises, some notable patterns emerge. First, the level of income inequality has little impact on the relationship between household income

⁸ The fitted probabilities were calculated by setting the Gini coefficient to several values throughout its range and household income to the first and last deciles. All other variables in the regression equation were set to typical values (see Fox and Andersen, 2006).

Table 2

Estimates from cumulative logit mixed models predicting class identification in 44 countries. Standard errors in parentheses.

| Independent-level variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|-------------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Age | | −0.003 (0.007) | −0.003 (0.007) | −0.003 (0.006) | −0.003 (0.007) |
| Gender (men) | | −0.170*** (0.036) | −0.170*** (0.036) | −0.170*** (0.036) | −0.171*** (0.036) |
| Education | | | | | |
| Less than secondary | | 0.735*** (0.069) | 0.730*** (0.069) | 0.730*** (0.069) | 0.727*** (0.069) |
| Secondary | | 1.314*** (0.068) | 1.306*** (0.068) | 1.305*** (0.068) | 1.293*** (0.068) |
| University degree | | 1.980*** (0.080) | 1.970*** (0.080) | 1.967*** (0.080) | 1.965*** (0.080) |
| Household Income | 0.513*** (0.010) | 0.454*** (0.010) | 0.455*** (0.010) | 0.455*** (0.010) | 0.455*** (0.010) |
| Contextual variables ^a | | | | | |
| GDP per capita (logged) | | | 0.207* (0.090) | 0.169 (0.098) | 0.170 (0.096) |
| Gini coefficient | | | | −0.108 (0.102) | −0.255* (0.112) |
| Household Income × Gini coefficient | | | | | 0.031*** (0.009) |
| Cut-points | | | | | |
| 1 | 0.122 (0.102) | 0.781*** (0.229) | 0.831*** (0.229) | 0.838*** (0.218) | 0.827*** (0.223) |
| 2 | 2.001*** (0.104) | 2.748*** (0.231) | 2.797*** (0.230) | 2.804*** (0.220) | 2.799*** (0.225) |
| 3 | 4.120*** (0.109) | 4.947*** (0.233) | 4.997*** (0.233) | 5.004*** (0.223) | 4.995*** (0.228) |
| 4 | 7.134*** (0.133) | 8.010*** (0.246) | 8.060*** (0.246) | 8.066*** (0.236) | 8.051*** (0.241) |
| Country variance | 0.523*** | 0.371*** | 0.331*** | 0.323*** | 0.320*** |
| Percent country variance explained | | 0.291 | 0.367 | 0.382 | 0.388 |
| Number of individuals | 11,470 | 11,470 | 11,470 | 11,470 | 11,470 |
| Number of countries | 44 | 44 | 44 | 44 | 44 |
| AIC | 27,636 | 26,912 | 26,909 | 26,910 | 26,899 |

^a GDP per capita (logged) and the Gini coefficient were both scaled to have a mean of 0 and standard deviation of 1 before entering the models so their effects could be directly compared.* $p < 0.05$.** $p < 0.01$.*** $p < 0.001$.

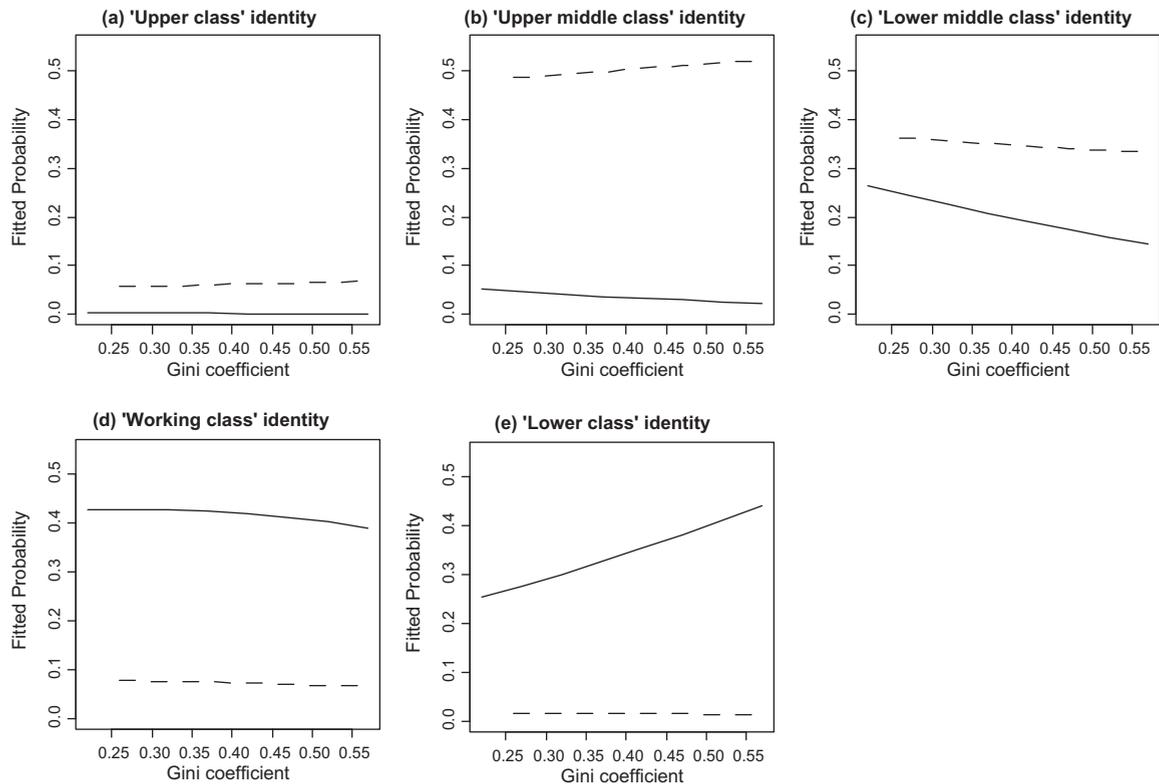


Fig. 3. Effect displays demonstrating the interaction between household income and national-level income inequality in their effects on class identity. Fitted values were derived from the final cumulative ordered mixed model. The solid lines represent the effects for the bottom decile of household income; the broken lines represent the effects for the top decile of income.

and ‘upper class’ (panel a) and ‘upper middle class’ (panel b) identification. That is, high income earners are much more likely than low income earners to have high class identification, but the difference between these two income groups is similar regardless of the national level of inequality. Income inequality also has relatively little impact on the relationship between household income and working class identification (panel d).

On the other hand, there are remarkable differences in the effect of income on ‘lower middle’ and ‘lower’ class identification, and especially the latter, which are conditioned by the level of income inequality in society. For example, panel (e) suggests that people with high incomes *know* that they are not in the ‘lower’ class, regardless of the level of income inequality in society. On the other hand, the poor are much more likely to identify with the lowest social class category in unequal countries than in more equal countries. Panel (c) indicates that the opposite is true for low income earners’ probability of ‘lower middle’ class identification. As income inequality rises, low income earners are increasingly less likely to place themselves in the lower middle class. Finally, for all five categories of class identification, the level of

income inequality has very little impact on rich respondents. In other words, rich people tend to have the same opinion about where they fit in class structure regardless of economic context. On the other hand, those at the bottom of the income distribution are profoundly influenced by the level of national income inequality. Simply put, low income earners are more likely to see themselves at the bottom of class structure when their position is more obvious.

4. Discussion and conclusion

Although seldom systematically tested, many studies have alluded to a relationship between national context and class identification. We build on this research by providing the first assessment of the influences of both economic prosperity and economic inequality on class identity across a large range of countries. Consistent with previous research, our evidence suggests that people’s perceptions of their class positions are highly influenced by their household income. We also find support for the common – but seldom rigorously tested – assumption that economic conditions moderate

the relationship between income and class identity. Nevertheless, in contrast to previous studies, our evidence suggests that economic inequality, not economic prosperity, is the driving force behind cross-national differences in class identification.

By examining data from 44 countries, we were able to more thoroughly investigate the relationship between economic development and class identity than any previous research. Consistent with other conclusions (*e.g.*, Evans & Kelley, 2004), we initially found that economic prosperity was positively related to class identity. That is, people in richer countries tend to be more likely to report higher class identities than those in poorer countries. Nevertheless, this finding held *only* when the income inequality was not considered. Once we included income inequality in our statistical models, the influence of GDP per capita diminished.

Our findings pertaining to the role of income inequality – both its moderating effect on the relationship between income and class identity and its negating influence on the GDP effect – make good intuitive sense. Recall that the argument for the effect of economic development is, at least partly, driven by the idea that an advanced economy limits the impact of inequality. That is, economic development is seen as ‘a rising tide that raises all boats’ where people of all incomes allegedly ‘move up’ the class structure as societies become richer. However, our results suggest that even if average people tend to be richer in wealthy countries than in poor ones, this has little impact on how they see their relative position in the class structure of their own society. On the other hand, inequality influences the relationship between household income and class identification regardless of the level of economic prosperity. This suggests, then, that the dominant ‘middle class’ consensus viewpoint based on ‘reference group theory’ needs some reconsideration (Evans & Kelley, 2004; Kelley & Evans, 1995).

Our most important finding demonstrates that household income tends to have a much stronger effect on class identification in societies with a high level of income inequality compared to societies that are more economically equal. Our explanation for this finding is simple: If inequality between classes is high, people are more likely to see class differences, and thus more likely to distinguish themselves along class lines. In this regard, both Marx’s classic materialist argument, and Weber’s distinction between ‘class situation’ and ‘status group’, continue to be relevant. Specifically, we argue that workers are most likely to recognize that they have life chances similar to those of others in their social class when inequalities between classes are highly visible.

Although we explore the effects of income inequality largely because of its parallel with household income, our main individual-level predictor, this interpretation raises the further possibility that poverty – either relative or absolute – also has an effect. We leave this question to future research.

The societal implications of our findings are highlighted by recent trends in income inequality. Although most countries have experienced vast economic growth in recent decades, this growth has tended to be accompanied by a growing separation of the very rich from everyone else (Smeeding, 2005). This change has occurred in most affluent societies, though to different degrees and at various points in the income distribution (Atkinson & Piketty, 2007; Kenworthy, 2010). In contrast to the statements of commentators who have argued that class identities are “dead” (Kingston, 2001; Pakulski & Waters, 1996), our findings suggest that people sensibly place themselves in class categories based on their income. Our results also suggest the possibility that if income inequality continues to rise, class identities will become increasingly polarized.

There are also policy implications to these findings. Inequality is associated with a wide array of social ills, including low levels of social cohesion and social trust, and high levels of political apathy, particularly among the lower classes (Hill, Leighley, & Hinton-Andersson, 1995; Uslander, 2002; Uslander & Brown, 2005). A possible mechanism for these relationships is the polarization of class identities. The implications of this polarization are most clear when one considers countries with extensive welfare states. Such countries are characterized by high levels of de-commodified labor, relatively low class divisions, and a strong sense of collective unity (Esping-Andersen, 1990). Citizens of these more equal societies (*e.g.*, Denmark, Norway, and Sweden) are not only less polarized in terms of class identity but also often report higher levels of happiness, social trust, and overall well-being at all levels income relative to others in less equal countries (Wilkinson, 2005). This underscores the importance of redistributive policies for ensuring a well-functioning society.

In summary, as people’s incomes increase they tend to express higher levels of class identification. While this is true across each of the 44 countries that we examined, there are significant cross-national differences that can be partially explained by economic context. A particularly important finding is the almost nonexistent impact of economic development. Instead, we demonstrate that it is the level of inequality that matters most. Relative to their counterparts in equal societies, the poor tend to be much more likely to see themselves as having a

low position in the class hierarchy when national-level income inequality is high.

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