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# **Household Composition in Post-Socialist Eastern Europe<sup>1</sup>**

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## **Household Composition in Post-Socialist in Eastern Europe**

### **Abstract**

Two perspectives provide alternative insights into household composition in contemporary Eastern Europe. The first stresses that individuals have relatively fixed preferences about living arrangements and diverge from them only when they cannot attain their ideal. The second major approach, the adaptive strategies perspective, predicts that individuals have few preferences. Instead, they use household composition to cope with economic hardship, deploy labor, or care for children or the elderly. This article evaluates these approaches in five post-socialist Eastern European countries, Bulgaria, Hungary, Poland, Romania, and Russia, using descriptive statistics and logistic regression. The results suggest that household extension is common in these countries and provide the most evidence for the adaptive strategies perspective. In particular, the results show that variables operationalizing the adaptive strategies perspective, including measures of single motherhood, retirement status, agricultural cultivation, and poverty, increase the odds of household extension.

## **Household Composition in Post-Socialist Eastern Europe**

### **Introduction**

The region of Eastern Europe stands at the center of a debate about the prevalence of extended households, in which several nuclear families or extended kin co-reside. Laslett (1965) debunked the stereotypical idea that extended households were a constant feature of historic societies, to be replaced by modern, nuclear ones. At the same time, however, it is clear that extended households have been common in some regions, including historic and contemporary Eastern Europe, even if they have not been numerically predominant and there has been considerable regional variability in their frequency (Andorka and Faragó 1983:302-304; Kaiser 1992:70; Morton 1980:236; Rudolph 1980:114-115; Shlapentokh 1991:268). Hajnal (1983:66) and Laslett's (1983:513) typologies reflect this variability, by suggesting that north-west European households tend to be nuclear, while east-European and Mediterranean households tend to be extended. This debate about the extent of household extension is complemented by different explanations of it (see review in Ruggles 1987:31-59); whether it is primarily a luxury only the rich can afford (Kaiser 1992:70), or an economic strategy to deploy labor (Emigh 1997:617-618) or to share living expenses in impoverished families (Lokshin, Harris, and Popkin 2000). We contribute to this literature by examining households in five contemporary post-socialist Eastern European countries, Bulgaria, Hungary, Poland, Romania, and Russia.

These explanations of household composition can be grouped into two broad theoretical perspectives. The first approach, the life-style preferences perspective, suggests that families exhibit relatively fixed preferences for a particular type of household formation, either extended (Ruggles 1987:129) or nuclear (Smith 1993:347; Verdon 1998:10), in any given time and place. Preferences can be conceptualized as inherent in human nature, as derived from region-wide

cultural, economic, demographic, and social patterns (Wachter, Hammel, and Laslett 1978; Wheaton 1975:603-604; Verdon 1998:188) or as practices of an ethnic group, such as the Roma (Gypsies) (Liégeois 1994:83). Within any given context, the variability in observed distributions of households stems not from these fixed preferences, but from the ability of households to attain them. Because it is often not possible to observe preferences directly or to provide a quantitative measure of preferences to include in statistical models, one way to consider this perspective is to compare the wealthy, who may be better able to achieve their preferences, with other social groups. For example, Ruggles (1987) argues that household extension was a widespread goal in Victorian England because family relations were idealized. Only the wealthy, however, were able to attain this cultural ideal. In the nineteenth century, household extension increased because declining mortality and rising incomes allowed more individuals to attain this ideal, not because of economic advantages associated with this household type (Ruggles 1987:134).

Another version of the preferences perspective suggests that families prefer to live in nuclear households (Smith 1993:347; Verdon 1979; 1998:6,104,188). Household extension arises only because of cultural, economic, or demographic constraints that restrict the formation of nuclear households. Thus, it often appears in agricultural communities characterized by impartible inheritance where the father is powerful, because these conditions constrain offsprings' ability to form their own household (Verdon 1979:95-97, 1998:188).

The second major approach, the adaptive strategies perspective, holds that families use household composition as an economic strategy and have few fixed preferences towards particular types of living arrangements (see reviews in Fontaine and Schulmbohm 2000; Moen and Wethington 1992). For example, lower-class families may take in extended kin to pool limited financial resources, especially during periods of economic transition, upheaval, or uncertainty, thereby ensuring their economic survival (Hareven 1990:232-235; 2000:8; Stack

1974). Fontaine and Schulmbohm (2000:1-3) also note that families often rely on household strategies, such as extension, to meet other challenges such as disease, aging, widowhood, and raising large numbers of small children. Becker's (1991:347-349) explanation of the decline of the extended family is also similar to an adaptive strategies argument. According to Becker, household extension in traditional societies was an insurance policy against economic uncertainty. He attributes the decline of household extension to the replacement of family insurance with market insurance in modern societies, thus reducing the economic utility of household extension. Finally, household extension can be an economic strategy to supply labor, and thus, may be linked to forms of land tenure (Emigh 1997:617-618; Kertzner and Hogan 1989:10). Rural families engaging in labor-intensive agriculture may favor household extension, because it provides cheap, readily available and easily deployed labor. Thus, the adaptive strategies perspective suggests that household composition will be more variable in response to local conditions than does the preferences perspective, especially in response to poverty, kin care responsibilities, and the labor requirements of agriculture. It is important to note that nuclear or extended households can be consistent with either the preferences or the adaptive strategies perspective, so it is important to consider the correlates of household extension, in addition to its extent, to help assess the applicability of the perspectives.

### **Household Extension in Eastern Europe**

Pre-industrial households in Eastern Europe were more likely to be extended than in Western Europe (Andorka and Faragó 1983:302-304; Kahk et al. 1982:78; Morvay 1965; Wall 1983:42, 48, 1998:50). Extended family forms included the Serbian and Bulgarian economically self-contained *zadruga* and Russian serf peasant households (Czap 1982, 1983; Halpern 1972;

Halpern and Kerewsky-Halpern 1986:26; Hammel 1972; Mitterauer and Kagan 1982:110-111).<sup>2</sup> Extended family forms were also common in rural Hungary (Gunda 1982:40; Morvay 1965).

Household extension was common during socialism because of housing restrictions and shortages, especially during the Stalinist period (Morton 1980:235; Shlapentokh 1991:268). Morton (1980:236) argues that 60% of all Soviet households lived communally, in shared dwelling space in the 1960s. In Bulgaria, however, extension rates decreased somewhat during collectivization in the 1950s and 1960s; individuals could elect to live in cooperatives rather than crowded extended family dwellings (Creed 1998: 58,132-133). Nonetheless, 48% of all Bulgarian households were extended as late as 1985, because of lingering housing shortages (Tsenkova 1996:1207).

The relative liberalization of some state socialist regimes during more recent decades led to regional transformations in household composition, though the explanations for these changes vary. Some patterns – in particular, a gradual fragmentation of extended households as housing conditions improved – may illustrate Verdon's (1998) and Smith's (1993) argument that individuals prefer nuclear living arrangements, once they become possible. Andrusz (1990:253) estimates that in 1967, 61% of urban families lived in non-communal apartments; by 1986, the figure had increased to 85% because of increases in the supply of housing. Similarly, Volkov

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<sup>2</sup>To get some sense of the extent of pre-industrial household extension, we note that Bradley and Mendels (1978) show that the observed percentage of extended households is between about 15 and 45%, even when it was normative that offspring lived with their parents after marriage. Thus, even in regions where extension was common, the absolute number of nuclear households is greater than extended ones. Andorka and Faragó (1983:302) found that most households in eighteenth century Hungary were nuclear. Kuklo (1997:255) also found that most Polish urban families were nuclear during this period.

(1994:163), for example, estimates that 80% of all Soviet families were nuclear immediately prior to the collapse of socialism, though urban extension rates were as high as 45% in most large Soviet cities in 1989 (Kosareva et al. 1996:263). Extended households also remained common in Transcaucasia and the Central Asian republics (Volkov 1994:163). Link (1987:6) likewise notes a “nuclearisation” of households in Eastern Europe since World War II, which he attributes to increased income, more plentiful housing, and changing customs. This trend was strongest in Poland, Czechoslovakia, and Hungary. Census data, for example, show that 83% of Hungarian households were nuclear in the early 1980s (Link 1987:13). In Poland, the extension rate was also relatively low: about 20% in 1984 (Dawson 1990:68).

Liégeois (1994:83) notes that Roma typically lived in extended families. Creed (1998:135) asserts that Bulgarian households after the 1980s limited their size to avoid being labeled as Turks or Roma, who were often stigmatized for living in very large households. These findings about ethnicity and household composition support a different variant of the preferences perspective by suggesting that some groups, and in particular, the Roma, exhibit relatively fixed preferences for household extension.

The use of household extension as an adaptive strategy, however, may have increased in some post-Stalinist contexts. In Bulgaria, for example, migration restrictions and diminishing employment opportunities facilitated the revival of three-generation stem family households in the 1970s and 1980s (Creed 1998:132). Household extension was associated with farming following decollectivization in Hungary (Harcza 1993:106). In Poland, extension rates increased in rural areas, suggesting that household composition was an economic strategy to deploy agricultural labor (Link 1987:9).

Female headship increased throughout this region beginning in the mid-1960s (Link 1987:14; Lokshin et al. 2000:2185), possibly because of increasing divorce rates that created female-

headed families (Link 1987:14; Lokshin et al. 2000: 2185; Morton 1980:237), as well as decreasing fertility that increased the proportion of the elderly population (Link 1987:14; Lokshin et al. 2000:2185). In Poland, the number of households headed by women over seventy years of age increased by 59% between 1970 and 1978 (Link 1987:14). Cox et al. (1997:193) report that two-thirds of all elderly persons in Poland lived with their children. Female heads of household may have used extension as an adaptive strategy (Lokshin et al. 2000).

Similarly, if the adaptive strategies perspective is correct, poverty may be associated with household extension in post-socialist Eastern Europe. Poverty increased during the market transition as a result of widespread unemployment caused by the collapse of socialist industry, inflation stemming from the dismantling of socialist financial systems and restrictions, and the decrease in the level and extent of social benefits and assistance because of the demise of the socialist welfare state (for Bulgaria, see Strong et al. 1996:25-26; for Hungary, see Szalai 1999:46-57; for Poland, see Keane and Prasad 2002:324 and Slay 2000:64-67; for Romania see Sîrbu 1995:474-475, 488; and Stan 1995:428-429; for Russia, see Mroz and Popkin 1995:8-22; see also Emigh and Szelényi 2001; Milanovic 1998). The use of household extension as an adaptive strategy among the poor may be especially common in some countries – in our data, namely, Bulgaria, Romania, and Russia – where the transition has been particularly slow or where, during the time our data were collected, there was a considerable amount of economic disruption, because of the economic uncertainty associated with markets.

Russian evidence supports this adaptive strategies perspective. In Russia, the proportion of families living below the poverty line has risen steadily during the market transition, because of the collapse of the command economy, economic stagnation, and a limited private sector (Bobkov 1994:69; Prokofieva and Terskikh 1998:487; Vannoy et al. 1999:10-11). Vannoy et al. (1999:11) suggest that the economic significance of the Russian family is increasing in response

to the challenges presented by the economic transition. Female-headship is correlated with poverty, which in turn, is correlated with household extension in present-day Russia (Bobkov 1994:71; Prokofieva and Terskikh 1998:486, 491-492). Lokshin et al. (2000:2183-2184) note that nearly 40% of single-mother families in Russia lived below the poverty line because of the erosion of the former socialist safety net and that they are more likely to be persistently poor than other families. Using data from the Russian Longitudinal Monitoring Survey, they find that low-income single mothers, in particular, may use household extension as a survival strategy (Lokshin et al. 2000:2193-294). A rise in income increases the probability that a single-parent family will live in a separate household (Lokshin et al. 2000:2193). Roma, who often worked as unskilled laborers in the socialist economy, are especially vulnerable to unemployment in the Hungarian transitional economy (Fóti 1994:45). Fóti (1994:45) associates the Roma's tendency to live in large extended families, often without employed adults, with their persistent poverty.

The ongoing process of privatization of housing also affects household composition in post-socialist Eastern Europe (Strong et al. 1996:245), but its effects are sometimes contradictory. On the one hand, the relaxation or abolishment of socialist housing and residence regulations may allow some families to move into separate residences (Winterbottom and Struyk 1996:175-176). In Russia, for example, it has led to the break-up of large extended families: between 41% and 56% of all movers in Moscow from 1992 to 1994 “uncoupled” (Daniell and Struyk 1997:246). These findings support Verdon’s (1998) and Smith’s (1993) version of the preferences perspective because once circumstances permit, most families exhibit a preference for nuclear living arrangements. On the other hand, remaining housing shortages and the extremely high costs of housing, exacerbated by privatization, may lead to continued or even increased co-residence (Daniell and Struyk 1994: 514; Tsenkova et al. 1996: 114-115). Shortages of private family dwellings generate exorbitant rents and prices (Belkina 1994:66-67; Daniell and Struyk

1997:252; Tsenkova 1996:1210), which make it difficult for many families, especially poorer ones, to obtain adequate housing (Daniell and Struyk 1997:252). In Poland, up to 50% of urban young couples currently reside with parents or other extended kin because of ongoing housing shortages exacerbated by the entrance of the late 1970s and the early 1980s baby boom generation to the already tight, overpriced housing market (Muziol-Weclawowicz 1996:226-230). These findings support an adaptive strategies perspective, suggesting that poor families in post-socialist Eastern Europe may take in extended kin to pool economic resources.

### **Empirical Implications**

We assessed some of the implications of these two perspectives. The preferences perspective suggests that individuals have relatively fixed preferences for household arrangements, either nuclear or extended, depending on which variant of the perspective is invoked. Where this perspective holds, household composition will show relatively little variation in response to particular conditions, since all – or at least most – families are attempting to adopt some particular living arrangement. Within the context of this relatively small variation, however, wealthy households should exhibit the preferred household composition most strongly, since they are most likely to be able to implement their preferences. Groups of individuals – for example, ethnic minorities – may have different preferences for living arrangements from the rest of the population. These preferences should also be more pronounced among the wealthier members, who can best attain their group preference. Thus, in the data analysis that follows, support for the preferences perspective would consist of: 1) relatively constant incidences of household composition – either nuclear or extended – across the populace, 2) the preferred form of household composition should be most pronounced among the wealthy, and by analogy, among the highly educated (a measure of high socio-economic status or convertible “cultural

capital” in the form of education (Bourdieu 1996)), and 3) the Roma may exhibit high rates of extended household composition.

The adaptive strategies perspective, on the other hand, suggests that individuals adapt their living conditions to their immediate circumstances. Therefore, household composition should be highly variable, because local conditions should have strong effects. Poverty, as well as the need for elder or child care or for agricultural labor will lead to household extension. In the data analysis that follows, therefore, evidence for the adaptive strategies perspective would consist of: 1) considerable variation in household composition, 2) poverty should be associated with higher rates of household extension, 3) household extension, either vertical (older and younger generations of kin) or lateral (siblings, cousins or other horizontally-related kin) may be used more often by single mothers, who have child care needs, 4) vertical household extension, should be an elder care strategy that is associated with the presence of retired adults in the household, 5) lateral household extension should be a labor strategy used by agricultural families, and 6) these adaptive strategies may be more common in Bulgaria, Romania, and Russia than in Hungary and Poland, because the market transition is slower in the former countries and, at the time of our data collection, created considerable economic disruption and uncertainty. In the following analyses, we operationalized independent variables to examine these effects.

We also included some control variables in our analyses. Home ownership can affect household composition, and may be especially important during the market transition because of privatization. For example, owning even a small house may make it easier for those with a small income to use household extension as an adaptive strategy. A large house owned by the wealthy makes it easier to implement their preferred living arrangement. Our data did not provide the sort of detailed information necessary to examine directly the empirical implications of the preferences or adaptive strategies models with respect to homeownership, because they did not

provide information about the value of respondents' equity or their ability to deploy the resource to their advantage. This information is particularly important in Eastern and Central Europe, where privatization meant that households were given private ownership rights to their dwellings, but the cost of utilities and maintenance often outstripped the household's ability to pay. Thus, we included home ownership as a control variable, to determine, whether, net of home ownership, the effect of wealth or poverty seems to correspond to the preferences or adaptive strategies model. Rural or urban residence similarly affects household composition, but not necessarily in accordance with either theory, so we included it here as a control. Finally, households with older members are more likely to be extended, so we included age of the oldest adult in the household as a control variable.

These perspectives are not necessarily mutually exclusive. For example, a finding that the poor and the rich lived in extended households could support the adaptive strategies and the preferences perspective. However, these perspectives do suggest different emphases that may be discernible empirically. For example, a finding that the wealthy lived in nuclear, while the poor in extended, households, could be consistent with either the preferences or adaptive strategies perspective. However, the preferences perspective suggests that the effect of wealth on household composition is stronger than the effect of poverty; while the adaptive strategies perspective suggests the reverse. In other respects, it is more difficult to distinguish between the empirical implications of the two perspectives using survey data, without considering the social context. For example, a finding that household extension is common among agricultural households could support either the preferences or adaptive strategies perspectives. However, if the social context is not an agricultural setting where impartible inheritance is practiced and fathers exhibit a high degree of control, such a finding does not provide strong evidence for Verdon's (1979:95-97, 1998:188) argument that families generally prefer nuclear households

and exhibit extension only under these limited conditions. Instead, this finding would support the adaptive strategies argument that household extension is a strategy to deploy labor.

## **Methods**

### *The Survey*

We examined these empirical implications by analyzing household composition comparatively during a period of political and economic transformation, the market transition, in five post-socialist Central and Eastern European countries: Bulgaria, Hungary, Poland, Romania, and Russia (in contrast to most of the studies cited above that considered a single country). We used evidence from our 1999-2000 survey, in which we conducted household and individual-level interviews in three parts: a general sample, a Roma oversample, and a poor oversample (Szelényi and Emigh 1998).

In Bulgaria, Hungary, Poland, and Romania, the general sample was approximately 1000 household and individual interviews. Given the size of Russia and the problem of coverage, we increased the sample to 2500 individual and household-level interviews. In Bulgaria, Hungary, and Romania, the poor and Roma were oversampled. In Poland and Russia, there was no Roma oversample because their proportion of the general population is miniscule. The poor were oversampled in Poland, but not in Russia. The high rate of Russian poverty, coupled with the larger sample size assured a sufficient number of poor in the general sample.

In Bulgaria, Hungary, and Poland, a stratified probability sample sampling was collected on the basis of a population register (either from a central registration office or from a comprehensive electoral roll). In Romania and Russia, there were no registration procedures that provided comprehensive enough coverage for sampling, so it was based on a random walk of pre-selected addresses chosen randomly. Because it was impossible to use the same procedure in all the countries, the major difference between them (non-citizens are excluded from registries,

but included in the random walk) was corrected by excluding the few non-citizens and their households by using a question about citizenship in the individual-level questionnaire. A Kish table was used to select the individual-level interviewees when the sampling was based on households. There were 1,078 completed household interviews in Bulgaria, 999 in Hungary, 1013 in Poland; 1050 in Romania; and 2,496 in Russia.

The oversamples of the poor and Roma in Bulgaria, Hungary, and Romania and the poor in Poland were collected beginning in May 1999 by inserting a screening question into 10,553 omnibus interviews in Bulgaria, 19,000 omnibus interviews in Hungary, 12,467 omnibus interviews in Poland, and 11,161 omnibus interviews in Romania. The oversamples were selected on the basis of the interviewer's identification for several reasons. First, the number of Roma who self-identify is extremely small, about 1 to 3% of the population in each country, in comparison to about 10% of the population who are identified by the interviewers as Roma, making oversampling by self-identification prohibitively expensive. Second, and more importantly, we wanted to include assimilated or better-off Roma in the samples, who are unlikely to self-identify as Roma, because of the stigma attached to this ethnic identification. Based on the interviewers' assessments, Roma households were identified and a subset chosen at random. Interviewers completed 523 Roma household interviews in Bulgaria, 480 in Hungary, and 368 in Romania. Although the Roma are stereotypically considered a difficult group to study, we encountered no insurmountable problems collecting the data. The data from the Roma oversample are the same quality as the other groups; for example, the percentage of missing cases among the Roma oversample was usually slightly less, not more, than among the general sample.

The poverty oversample was also selected on the basis of interviewer identification, so that it would be consistent with the Roma oversample. It was compiled on the basis of screening

questions in the omnibus interviews, using a checklist of six poverty elements. Households were chosen randomly for interviews (Roma households were excluded), creating an oversample of 517 poor households in Bulgaria, 447 in Hungary, 501 in Poland, and 505 in Romania. The screening worked well. For example, the poor oversample was substantially poorer than the general sample (e.g. average monthly income for the general sample was about six times that of the poor oversample). Screening for poverty was, in any event, less problematic than screening for Roma. The poor range between about 10 to 25% of the population in these countries, so the surveys obtained a fairly large number of poor even in the general sample.

Our analyses below are weighted, using household weights, and adjust for stratification and clustering using the survey commands in Stata (StataCorp 2003). Analyses with combinations of oversamples and countries were reweighted. We reweighted the oversamples by adjusting the original sampling weights so that oversamples represented the incidence of the subgroup in the general population. We determined the incidence rates of Roma and poor from the screening questions in the omnibus interviews by calculating, based on interviewer assessment, the percentage of Roma and poor, weighted by a combined screener weight and number of people in the household. For the analyses with all of the countries combined, we adjusted these weights so that we gave equal weight to each country.

### *Variables*

The household is the unit of analysis in the following analyses and all the variables are defined at the household level, with the exception of ethnicity (discussed below). Our dependent variables are operationalizations of household composition based on the relationships of co-residing kin, coded from the household roster in the household questionnaire. We created sets of dichotomous variables that represented solitary, nuclear, vertically-extended, and laterally-extended households, following the definitions of Laslett and Wall (1972:31; cf. Herlihy and

Klapisch-Zuber 1985:292). Solitary households consist of a single person. Nuclear households consist of at least two individuals with some combination of the following characteristics: one or two adults (married or living together as married) who were living with or without their children. Vertically-extended households consist of at least two adult generations. For example, they can contain grandparents, their adult children, and their grandchildren. Laterally-extended households contain adult siblings or cousins.

There is an additional problem of determining when households change from nuclear to extended. For example, a household consisting of two parents and grade-school aged children is easily classified as a nuclear family, but the household is better classified as a vertically extended if the parents live with a 30-year-old offspring. However, choosing the age at which this change occurs is not straightforward. In preliminary analyses, not presented here, we experimented with cutoffs of different ages, as well as combinations of age and measures of marital, school, and employment status. We noted that strongly significant effects of the independent variables on the dependent variables were not affected by the different operationalizations, though borderline effects were. Thus, we decided to pick a cutoff based on the age at which the age-specific means of employment status (employed or not) attained the overall mean. For this variable, the age-specific distribution increased substantially between ages 21 and 22, reaching the overall mean at the latter age, so we used this cutoff. We also examined cutoffs based on marital status and school enrollment, but they did not provide useful guidelines. While school enrollment status dropped off sharply in individuals' early twenties, the age-specific distribution dropped slowly and nonlinearly after that, making it difficult to discern where it attained the value of the overall low mean. The age-specific distribution of marital status reached the overall mean only by individuals' late twenties, an age that seemed too late to provide a useful guideline for household

composition. The importance of borderline significant results in the following analyses should not be overdrawn, because they may depend on the operationalization of the dependent variable.

Thus, we defined nuclear kin as parents and their children under the age of 22. We also counted respondents and their siblings under age 22 as nuclear households. We designated resident grandparents, nieces, nephews, aunts and uncles, and respondent's children aged 22 or over as vertical kin. We designated families containing cousins, sister-/brother-in-laws and siblings over the age of 22 as laterally extended. For each variable, the value, "1," represented the particular type of household composition, and the value, "0," represented all other households. So, for example, the variable, "nuclear households," was coded "1" if the household was nuclear and "0" otherwise. Our coding of vertically and laterally-extended households was, therefore, not mutually exclusive. Vertical households might contain lateral kin; lateral households might include vertical kin. This operationalization was useful because of the considerable empirical overlap between vertical and lateral extension. We present only a combined country model for laterally-extended households because there were relatively few cases.<sup>3</sup>

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<sup>3</sup>A multinomial operationalization of household composition is not particularly useful here for three reasons. First, the overlap between vertical and lateral extension, in combination with the relatively small number of cases of lateral extension, makes it impossible to operationalize a multinomial dependent variable. Second, even if a multinomial dependent variable could have been operationalized, the independent variable, variable "single mother present" is always "0" for solitary households. Finally, because the number of cases of laterally-extended households is small, combined country analyses are most useful for this dependent variable, while separate country models are more useful for the other dependent variables.

We chose independent variables to help assess the applicability of the adaptive strategies and preferences approaches. Poor was coded “1” if the household’s mean per capita income was less than half of the median income (as given in the general sample for each country) and “0” otherwise.<sup>4</sup> Wealthy was coded “1” if the household’s mean per capita income fell within the top 10% of the income distribution and “0” otherwise.<sup>5</sup> We include another measure of socioeconomic status, high adult educational attainment, coded “1” if one or more adults present in the household have completed college and “0” otherwise. We included a variable indicating whether retired adults live in the household, coded “1” if one or more retired adults are present in the households, “0” otherwise. We also included a dichotomy indicating whether the household contained an unmarried mother of minor children. (This variable is always coded as “0” for solitary households, so it cannot be used in the analyses where “solitary households” is the dependent variable.) Our agricultural holdings variable was coded “1” if the household cultivated one or more hectares of land and “0” otherwise.<sup>6</sup>

We also tried to assess whether the Roma exhibited a preference for household extension (Creed 1998:135; Liégeois 1994:83). Detailed ethnicity questions were asked only in the individual questionnaire, not in the household roster, so it is the only variable in the analyses

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<sup>4</sup>We derived household income from a summary measure of nine sources of household income questions (wages/earnings, state transfers, sale of own produce, interest, investment returns, alimony/child support, donations from charitable organizations and other income).

<sup>5</sup>Although variables measuring the top 3 or 5% of the income distribution would have provided wealthier individuals, the size of the general sample assures that very few individuals will be considered wealthy by these more restrictive measures.

<sup>6</sup>We also constructed a variable coded “1” for families who cultivated “2” or more hectares and “0” otherwise, but this variable did not provide different substantive results.

below based on the individual level of analysis. We included a dichotomous Roma household variable, coded “1” if the respondent self-identified as Roma or if his or her spouse identified as Roma and “0” otherwise. This variable is not strictly analogous to the other household variables; it does not indicate whether any person in the household is Roma. This ethnicity variable is not presented in models for Poland and Russia, since Roma oversamples were not collected there.

Our control variables include a home ownership variable, coded “1” if the family owned its dwelling place and “0” otherwise, a regional variable coded for “1” rural households, and “0” otherwise, and the age of the oldest household member. Table 1 shows the weighted means and standard deviations of all the independent variables. The dependent variables operationalizing household composition are presented in Table 2.

### **Analysis Strategy**

Table 2 presents the weighted frequency distribution of household composition by country and subsample. Extended households are common in all of these countries even if nuclear households are numerically predominant. The percent of households that can be classified as vertically extended ranges between 25.66 in Russia and 37.03 in Bulgaria in the general sample. In general, these percentages are somewhat higher in the poor and Roma subsamples, ranging between 26.76 in Hungary and 42.74 in Romania in the poor subsamples and 36.14 in Hungary and 41.60 in Bulgaria in the latter.

As noted above, the presence of many extended households can be support for either the preferences or the adaptive strategies perspective, so Table 2 does not necessarily adjudicate between them. Thus, we examine the relationship between household composition and the independent variables. We use logistic regression, because the different household compositions are operationalized as dichotomous variables. The independent variables of primary interest are also all dichotomous variables. We present odds ratio, which give the odds of a household

having that particular composition for the value of “1” of the independent variable versus the value of “0.”

We use the odd ratios of the variables, wealthy and high educational attainment, to assess the preferences perspective, and the variables, poor, single mother, retired, and land cultivation to assess the adaptive strategies perspective. We are looking for a strong positive relationship between a given variable and a given household composition. So, for example, a strong positive effect of wealth on nuclear family composition would provide support for the preferences perspective that the wealthy are able to attain their preference. A strong positive effect of poverty on vertical extension would provide support for the adaptive strategies perspective that the poor live in extended households as a survival strategy. Moderate or negative effects of the independent variables on the dependent variables do not provide strong evidence for these perspectives, because the omitted categories of the dependent variables represent mixes of household types. This positive correlation between the independent and dependent variable is represented by an odds ratio greater than one in the following analyses.

In preliminary analyses not presented here, we considered the effects of the independent variables on four household compositions, solitary, nuclear, vertically extended, and laterally extended. The results for the model using nuclear household composition as the dependent variable did not show strong positive effects of the independent variables. Most of the odds ratios were insignificant or were below one, indicating that the presence of the independent variables did not increase the odds of nuclear household composition. Thus, this evidence suggests that nuclear household composition was not preferred by the wealthy, well educated, or Roma. Neither did this evidence suggest that the poor, single mothers, retirees, or agricultural households used nuclear household composition as an adaptive strategy. However, we did find significant odds ratios greater than one for models with solitary, vertically-extended, and

laterally-extended household composition, so we describe these results in more detail below. For ease of interpretation, we divided the tables into sets of independent variables, according to whether we conceptualized the variables as measures of preferences or adaptive strategies.

### **Results: Preferences and Adaptive Strategies**

Table 3 presents the results of the logistic regressions of solitary household composition. The results suggest a preference for solitary household composition among the wealthy, net of the other variables. The odds ratios are significant at the .05 level in all of the countries and range between 2.107 in Bulgaria and 5.997 in Poland. The odds ratios for the variable retirement status are also positive and significant at the .05 level in Bulgaria, Hungary, and Romania, ranging between 2.318 in Hungary and 4.937 in Bulgaria. This is a surprising finding; we conceptualized retirement status as an indicator of an adaptive strategy that used household extension for elder care, so we did not expect for it to have a positive association with solitary household composition. It is possible, however, that the result for retirement status supports Verdon's (1979; 1998:6,104,188) and Smith's (1993:347) argument of a preference for independent living, albeit in an unanticipated way: retired adults prefer to live alone (if widowed or not married), not with their children.

Table 4 presents the results of the logistic regressions of vertical household extension. The findings provide some support for both perspectives, but provide more support for the adaptive strategies perspective. The odds ratios of wealthy are either less than one or insignificant; thus, vertical household extension seems not to be a prerogative of the rich in these countries. The odds ratios of educational status are greater than one and significant in all of the countries, ranging between 1.711 in Hungary and 2.313 in Bulgaria. We argued that high educational status can serve as a measure of the preferences perspective. The well-educated may have convertible cultural capital (Bourdieu 1996) that allows them to attain a preference for

household extension. However, we also note that these data do not separate the effects of education as convertible cultural capital from the effects of highly educated young adults continuing to reside with their parents while they finish their education, partly because we do not have enough a large enough sample of young, highly educated adults to examine the latter possibility explicitly.

The odds ratios for the ethnicity variable Roma household are insignificant in Bulgaria and Hungary. However, the odds ratio is 2.415 and significant in Romania, net of the other variables. The result for Romania partially supports the preferences perspective that Roma prefer to live in extended households. However, the differing effect by country suggests that there is no single preference for household extension among the Roma, because household extension varies according to local conditions. This interpretation meshes well with the argument that the Roma comprise an extremely heterogeneous and fluid ethnicity, considered to be a unitary group only by outsiders. Roma are comprised of multiple groups (e.g. Lovari, Kalderash, Boyash), with different languages, religions, and cultural heritages. The differences between these groups are often larger than between Roma and non-Roma (Mitev et al. 2001:44-45).

Table 4 provides strong support for the adaptive strategies perspective. The odds ratios of the variable poor are greater than one and significant in Bulgaria, Romania, and Russia, ranging from 1.999 in Romania to 3.331 in Bulgaria. The odds ratios are greater than one in Hungary and Poland, but insignificant in Poland and only borderline significant in Hungary ( $p$ -value = .065). These findings support the adaptive strategies perspective that household extension is used by the poor. They suggest that poverty has a stronger effect on household extension where the market transition has been slow or particularly disruptive in 1999/2000, and, thus, where poverty is coupled with economic uncertainty. Kin support may provide additional insurance there.

As Lokshin et al. (2000) show for Russia, our results show that single motherhood is associated with household extension in all of the countries. The odds ratios are significant and range between 4.004 in Russia and 2.474 in Romania. The odds ratio for retirement status is significant and greater than one in Russia, but not in the other countries, perhaps again reflecting the instability of the economic situation there and the increased use of household composition as an adaptive strategy for kin care.

Table 5 further explores the household composition of Roma, by adding terms for the interaction between the variables ethnicity (Roma household) and single motherhood and ethnicity and retired in the models for the countries where Roma oversamples were collected.<sup>7</sup> The interaction between the variables ethnicity and single mother present is 2.706 and borderline significant in Hungary. The interaction between ethnicity and retired adult present is greater than one and significant in Bulgaria and Hungary. Since the number of cases valued “1” for these interaction variables is small, these findings should not be overemphasized, but they do suggest that the effect of single motherhood and retirement status on household extension is greater among the Roma than the other households in the sample. They suggest that the Roma are particularly likely to live in extended households when the arrangement can provide kin care.

We also explored, in models not presented here, the possibility that the wealthier Roma were best able to implement a preference for household extension. Because most Roma are poorer than the general population, the variable used in these equations, the top decile of the income distribution, has the value of “0” for virtually all Roma. However, not all the Roma in our sample are poor; some have moderate income that might allow them to implement a preference for household extension better than poor Roma. Thus, for the Roma subsample, we experimented with other measures of wealth better suited to represent the wealthier Roma.

However, none of these alternative measures of wealth had a significant effect on vertical household extension among the Roma subsample. Apparently, household extension is not a prerogative of the wealthy either in the general population or among the Roma.

Finally, Table 6 presents the results for lateral household extension. Because of the small number of laterally-extended households, we present a combined country model. The odds ratio, 1.526, for the ethnicity variable, Roma household, is borderline significant the .05 level (p-value=.077), as is the odds ratio for the variable poverty, 1.378 (p-value=.052). The odds ratio of single motherhood is significant and greater than one (2.002), suggesting that co-residence with lateral kin (e.g. siblings) is used for child care, as is co-residence with vertical kin (e.g. parents) illustrated in Table 4. As in Table 4, we present the interaction term of Roma household and single motherhood. Its odds ratio, 3.021, is significant at the .05 level. This result is analogous to the one in Table 4 because it also indicates that Roma are particularly likely to use household extension, and in this case, lateral extension, as a child care strategy.

Finally, this model provides the best opportunity to examine the possibility that lateral household extension is an adaptive strategy used by agricultural households. Lateral, especially in contrast to vertical, extension can be used to supply an adult labor force. Thus, we removed the rural control variable from the equation and inserted a more specific variable that measures whether the household cultivated agricultural holdings. The odds ratio for this variable, 2.681, is significant, suggesting that lateral extension is an adaptive strategy of agricultural households.

## **Conclusions**

In sum, we found mixed evidence for the preferences and adaptive strategies perspectives. We argued that evidence for the preferences perspective would consist of: 1) relatively fixed incidences of household composition unaffected by social, demographic, and

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<sup>7</sup>The interaction between ethnicity and poor was insignificant in the models presented in Tables 5

economic variables, 2) to the extent that there was variability, wealth, or secondarily, high education should have the strongest effect, and 3) Roma might exhibit a preference for household extension. Our results provide only limited evidence for this perspective. Household composition was not constant; it was associated with high education, poverty, single motherhood, retirement, and agricultural cultivation. Wealth, which according to the preferences perspective, should have the strongest effect, had little discernible influence. The effects of high education on vertical household composition and the positive association between retirement and solitary household composition are consistent with the preferences perspective. Finally, the finding that the Romanian Roma show some increased tendency to live in extended households, net of the other variables, provides limited support for the preferences perspective. However, the lack of a consistent finding to this effect in Hungary and Bulgaria, as well our failure to find a relationship between wealth and household extension among the Roma subsample, suggest that the preferences perspective does not provide a strong explanation of Roma household composition.

We noted, however, several problems with the variables that operationalize the preferences perspectives. There were relatively few extremely wealthy households in our sample, since we did not oversample for them. Thus, our measure, the top income decile, may have provided not only a fairly small number of cases of wealthy households, but also, perhaps, an inadequate representation of the extremely wealthy. Second, we did not have a large sample of highly educated young adults, which might have allowed us to interpret the results of high educational status more easily.

In general, our results provided more evidence for the adaptive strategies perspective. We argued that evidence for this perspective would consist of: 1) considerable variation in household

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and 6, so it was omitted here.

composition, and in particular, strong effects of 2) poverty, 3) single motherhood, 4) retirement status, and 5) agricultural cultivation, all of which 6) may be magnified in countries where the market transition is tumultuous or slow. Our results, in general, confirmed this perspective, because they showed that these variables increased the odds of household extension, net of the other variables, while also exhibiting some country-level variation. Finally, as noted above, these perspectives are not necessarily mutually exclusive, nor does empirical evidence necessarily adjudicate between them. Our mixed findings, providing stronger support for the adaptive strategies than the preferences perspective, but still some support for the latter, illustrates this analytic difficulty.

Our results in Table 2 confirm that extended household composition is widespread in post-socialist Eastern Europe even if not numerically predominant, as other research has shown for this region, both past and present (c.f. Andorka and Faragó 1983:302-304; Kaiser 1992:70; Morton 1980:236; Rudolph 1980:114-115; Shlapentokh 1991:268). While our results cannot directly address whether the extent of household extension has increased or decreased during the market transition, they do suggest that, so far, the market transition has not erased the overall high incidence of complex and extended households in these countries. Thus, this region will continue to be important in theoretical debates about the household composition. It could be a strategic research site to examine the relationship between the growth of capitalist markets and household composition. While nuclear households are often associated with market economies (e.g. Becker 1991:347-349), other evidence suggests that this explanation is too simple (Laslett 1965; Ruggles 1987:3-8). We hope that additional comparative, as well as longitudinal data for post-socialist countries can be used to address these debates.

Taken together, these studies documenting an overall high incidence of household extension in these countries over a relatively long period of time could be taken as evidence for a

widespread cultural preference for household extension. The evidence presented above, however, suggests otherwise. While the preferences perspective suggests that the wealthy should be best able to attain a culturally ideal household composition, our measure of wealth had little effect on household composition. Similarly, we find little support that Roma have a preference for household extension. While some analyses show that Roma are more likely to live in extended households, the most consistent interpretation of these results is the adaptive strategies perspective. Roma in fact may be more likely to use household extension for kin care than the general population. Our other analyses also supported the adaptive strategies perspective that household composition was used by the poor or those in need of child or elder care. Of course, it is possible that what seems like a relatively high and constant incidence of household extension during different periods of East European history was supported by different adaptive strategies in different time periods (e.g. to cope with housing shortages during socialism; to cope with poverty during the market transition). We hope that further research can examine these possibilities.

We also found little support for Verdon's (1979; 1998:6,104,188) and Smith's (1993:347) idea that most individuals prefer to live in nuclear households. Few of our variables were associated with nuclear household composition. (We did not present these analyses because there were few significant results). Table 2 also provides little support for the nuclear preferences perspective, as it shows a fairly large extent of household extension, even in the absence of the limited conditions that Verdon (1979:95-97, 1998:188) describes as usually facilitating household extension (patriarchal agriculture societies with impartible inheritance). However, we noted that previous studies found a decrease in household extension when restrictions were lifted or housing became more plentiful (Andrusz 1990:253; Daniell and Struyk 1997:246; Link 1987:6; Winterbottom and Struyk 1996:175-176); these findings would support Verdon's and

Smith's nuclear preferences perspective. While our results do not support this perspective, we note that better measures of wealth and home ownership could provide different results.

Furthermore, the results for solitary household composition (Table 3) support a variant of the nuclear preferences perspective, by suggesting that the retired may prefer to live alone.

Our findings confirm previous studies arguing that household extension during the market transition is an adaptive strategy for the poor, allowing them to pool economic resources, and for households with kin care needs, especially with single mothers and retirees (c.f. Bobkov 1994:69; Lokshin et al. 2000; Prokofieva and Terskikh 1998:487; Vannoy et al. 1999:11). We emphasize our comparative finding that the effects of the variables operationalizing adaptive strategies are strongest in the countries where the market transition has been slowest or where conditions were still tumultuous when these data were collected (Bulgaria, Romania, and Russia). They lend credence to the idea that the market transition may increase the use of household extension as an adaptive strategy. We note that such findings are rare because few data sets are strictly comparative. Thus, we noted the need for further research with respect to household composition in these countries. There are few studies that are comparative, such as ours, and even fewer than are longitudinal. In addition, more detailed, regional level analyses are needed to disaggregate regional effects of the market transition on household composition.

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**Table 1. Weighted Descriptive Statistics for Independent Variables, 1999/2000 (Ns and where appropriate, standard deviations, in parentheses).**

	Bulgaria	Hungary	Poland	Romania	Russia
<i>Preferences</i>					
Wealthy	.109 (1962)	.107 (1673)	.100 (1376)	.106 (1872)	.090 (2332)
Highly Educated Adult Present	.164 (2087)	.132 (1788)	.107 (1503)	.129 (1911)	.280 (2495)
Roma Household	.091 (2007)	.046 (1765)	.002 (1470)	.023 (1923)	.003 (2284)
<i>Adaptive Strategies</i>					
Poor	.147 (1962)	.135 (1673)	.184 (1376)	.221 (1872)	.154 (2332)
Single Mother Present	.045 (2094)	.045 (1792)	.067 (1514)	.039 (1923)	.160 (2495)
Retired Adult Present	.570 (2094)	.531 (1798)	.381 (1499)	.565 (1920)	.392 (2494)
Cultivates One or More Hectares	.028 (2093)	.041 (1767)	.151 (1426)	.177 (1919)	.022 (2474)
<i>Controls</i>					
Rural Household	.346 (2094)	.358 (1792)	.338 (1514)	.447 (1923)	.258 (2496)
Owns Home	.853 (2088)	.846 (1789)	.617 (1510)	.919 (1923)	.594 (2493)
Age of Oldest Adult	59.408 (std: 29.430) (2090)	57.375 (std: 16.830) (1789)	53.508 (std: 15.662) (1513)	57.280 (std: 38.009) (1920)	53.025 (std: 16.563) (2496)

**Table 2. Weighted Frequencies of Household Composition by Subsample, 1999/2000 (Ns in Parentheses).<sup>8</sup>**

	Bulgaria	Hungary	Poland	Romania	Russia
<b>General Subsample</b>					
Solitary	19.14% (1078)	26.01% (999)	19.08% (1013)	17.14% (1050)	19.74% (2496)
Nuclear	41.95% (1078)	43.69% (999)	43.92% (1012)	46.80% (1050)	53.55% (2492)
Vertical	37.03% (1078)	28.64% (998)	34.02% (1011)	33.29% (1050)	25.66% (2490)
Lateral	2.82% (1076)	2.71% (997)	3.99% (1005)	3.71% (1047)	1.39% (2486)
<b>Roma Subsample</b>					
Solitary	12.03% (522)	10.37% (438)	--	4.63% (368)	--
Nuclear	47.27% (522)	50.66% (438)	--	48.91% (367)	--
Vertical	41.60% (521)	36.14% (437)	--	39.74% (368)	--
Lateral	6.30% (515)	4.27% (433)	--	8.04% (367)	--
<b>Poor Subsample</b>					
Solitary	31.32% (515)	26.04% (423)	13.21% (501)	13.52% (505)	--
Nuclear	32.67% (515)	44.18% (423)	49.13% (501)	39.57% (505)	--
Vertical	34.49% (515)	26.76% (423)	34.17% (501)	42.74% (505)	--
Lateral	5.78% (511)	4.08% (423)	5.27% (498)	2.79% (504)	--

<sup>8</sup>Column totals do not sum to 1, since our operationalizations of vertical and lateral household extension are not mutually exclusive.

**Table 3. Odds Ratios from Weighted Logistic Regression of Solitary Household Composition, 1999/2000 (p-values in parentheses).<sup>9</sup>**

	Bulgaria	Hungary	Poland	Romania	Russia
<i>Preferences</i>					
Wealthy	2.107 (.016)	3.115 (.001)	5.997 (.000)	2.826 (.000)	2.410 (.000)
Highly Educated Adult Present	.293 (.000)	.277 (.004)	.214 (.001)	.416 (.016)	.407 (.000)
Roma Household	1.109 (.784)	.469 (.025)		.163 (.003)	
<i>Adaptive Strategies</i>					
Poor	.182 (.000)	.498 (.042)	.620 (.147)	.348 (.000)	.212 (.000)
Retired	4.937 (.048)	2.318 (.003)	.801 (.500)	3.765 (.000)	.815 (.282)
<i>Controls</i>					
Rural Household	.892 (.586)	.777 (.235)	.718 (.200)	1.094 (.631)	1.264 (.122)
Owns Home	.341 (.000)	.550 (.034)	.696 (.100)	.421 (.008)	1.992 (.000)
Age of Oldest Adult	1.005 (.867)	1.017 (.075)	1.047 (.000)	1.002 (.278)	1.050 (.000)
N	1870	1638	1350	1856	2327

<sup>9</sup>“All other households” is the reference category.

**Table 4. Odds Ratios from Weighted Logistic Regression of Vertical Household Composition, 1999/2000 (p-values in parentheses).<sup>10</sup>**

	Bulgaria	Hungary	Poland	Romania	Russia
<i>Preferences</i>					
Wealthy	1.140 (.499)	.707 (.201)	.381 (.003)	.535 (.052)	.960 (.856)
Highly Educated Adult Present	2.313 (.000)	1.711 (.007)	1.939 (.009)	2.304 (.001)	2.263 (.000)
Roma Household	.862 (.393)	1.344 (.223)		2.415 (.000)	
<i>Adaptive Strategies</i>					
Poor	3.331 (.000)	1.426 (.065)	1.240 (.285)	1.999 (.000)	3.306 (.000)
Single Mother Present	3.227 (.000)	2.929 (.000)	3.638 (.000)	2.474 (.000)	4.004 (.000)
Retired Adult Present	.620 (.017)	.343 (.000)	.962 (.862)	1.349 (.385)	1.603 (.004)
<i>Controls</i>					
Rural Household	1.111 (.505)	1.087 (.550)	1.596 (.008)	.948 (.710)	.551 (.000)
Owns Home	1.715 (.003)	2.166 (.000)	1.311 (.115)	1.484 (.073)	.459 (.000)
Age of Oldest Adult	1.039 (.000)	1.049 (.000)	1.059 (.000)	1.036 (.012)	1.07 (.000)
N	1869	1636	1348	1856	2322

<sup>10</sup>“All other households” is the reference category.

**Table 5. Odds Ratios from Weighted Logistic Regression of Vertical Household Composition, 1999/2000 (p-values in parentheses).<sup>11</sup>**

	Bulgaria	Hungary	Romania
<i>Preferences</i>			
Wealthy	1.126 (.538)	.699 (.188)	.535 (.052)
Highly Educated Adult Present	2.306 (.000)	1.705 (.007)	2.303 (.001)
Roma Household	.674 (.046)	.602 (.110)	1.924 (.008)
<i>Adaptive Strategies</i>			
Poor	3.387 (.000)	1.483 (.044)	2.007 (.000)
Single Mother Present	3.320 (.000)	2.667 (.000)	2.432 (.000)
Retired Adult Present	.584 (.010)	.309 (.000)	1.319 (.425)
Roma X Single Mother	.884 (.772)	2.706 (.058)	2.413 (.137)
Roma X Retired	2.084 (.004)	7.134 (.001)	1.452 (.574)
<i>Controls</i>			
Rural Household	1.124 (.454)	1.087 (.552)	.949 (.716)
Owns Home	1.689 (.004)	2.170 (.000)	1.490 (.071)
Age of Oldest Adult	1.039 (.000)	1.050 (.000)	1.036 (.012)
N	1869	1636	1856

<sup>11</sup>“All other households” is the reference category.

**Table 6. Odds Ratios from Weighted Logistic Regression of Lateral Household Composition, Combined Country Analysis (Bulgaria, Hungary, Poland, Romania and Russia), 1999/2000 (p-values in parentheses).<sup>12</sup>**

Independent Variable	
<i>Preferences</i>	
Wealthy	.528 (.054)
Highly Educated Adult Present	1.511 (.064)
Roma Household	1.526 (.077)
<i>Adaptive Strategies</i>	
Poor	1.378 (.052)
Single Mother Present	2.002 (.008)
Roma X Single Mother	3.021 (.007)
Cultivates One or More Hectares	2.681 (.000)
<i>Controls</i>	
Owens Home	1.354 (.102)
Age of Oldest Adult	1.001 (.373)
N	8684

<sup>12</sup> “All other households” is the reference category.

Table 9. Odds Ratios from Survey Logistic Regression of Interviewer Classification of Ethnicity on Selected Independent Variables: Bulgaria, Romania, and Russia 1999-2000. (P Values in Parentheses)

Independent Variable	Interviewer Classification of Ethnicity							
	Bulgaria			Romania		Russia		Hungary
	Roma	Turk	Majority	Hungarian	Majority	Ukrainian	Majority	Majority
Self-Identification as Given Ethnicity	177.00 (.000)	2620.03 (.000)	99.59 (.000)	77.64 (.000)	171.14 (.000)	20.528 (.000)	40.353 (.000)	87.446 (.000)
Poor (Below 50% of Median Per Capita Income)	2.829 (.001)	.379 (.003)	.525 (.170)	.444 (.085)	.378 (.000)	1.887 (.286)	.688 (.348)	.336 (.000)
Number of People in Household	1.316 (.003)	.832 (.051)	.911 (.227)	.994 (.967)	.782 (.000)	1.042 (.695)	1.043 (.688)	.754 (.000)
Elementary School Education or Less	4.048 (.000)	1.013 (.974)	.234 (.000)	1.250 (.639)	.361 (.000)	.529 (.180)	.668 (.164)	.310 (.001)
Lives in Majority Roma/Gypsy Settlement	14.119 (.000)							
Spoke Ethnic Language as a Child	67.043 (.001)	2.424 (.450)		186.288 (.000)		5.439 (.000)		
Spoke Only Majority Language as a Child			46.368 (.000)		6.426 (.000)		8.873 (.000)	6.317 (.000)
N	1883	1883	1881	1873	1873	2217	2221	1675

Appendix Table 6. Odds Ratios from Survey Logistic Regression of Interviewer Classification as Roma by Country on Selected Independent Variables: Those who do not Self-Identify as Roma, Bulgaria, Romania, 1999-2000. (P Values in Parentheses)

Independent Variable	Interviewer Classification of Ethnicity		
	Bulgaria	Romania	Hungary
Poor (Below 50% of Median Per Capita Income)	2.86 (.001)	2.74 (.000)	2.26 (.006)
Number of People in Household	1.32 (.002)	1.29 (.000)	1.50 (.000)
Elementary School Education or Less	3.90 (.000)	2.42 (.000)	5.90 (.000)
Lives in Majority Roma/Gypsy Settlement	14.43 (.000)	35.50 (.000)	7.72 (.000)
Spoke Roma/Gypsy as a Child	51.94 (.015)	9.76 (.000)	110.34 (.000)
N	1432	1750	1476

Table 1. Weighted Means of Variables Used in the Analysis: Bulgaria, Hungary, Romania and Russia, 1999-2000. (N in Parentheses)

Variables	Bulgaria	Hungary	Romania	Russia
Interviewer Classification as Roma	.111 (2094)	.074 (1794)	.054 (1923)	
Interviewer Classification as Turk	.098 (2094)			
Interviewer Classification as Hungarian			.073 (1923)	
Interviewer Classification as Ukrainian				.036 (2359)
Interviewer Classification as Majority	.787 (2094)	.943 (1794)	.883 (1923)	.917 (2359)
Self Identification as Roma	.088 (2007)	.042 (1793)	.022 (1923)	.005 (2351)
Self Identification as Turk	.110 (2008)			
Self Identification as Hungarian			.071 (1923)	
Self Identification as Ukrainian				.046 (2351)
Self Identification as Majority	.809 (2005)	.971 (1792)	.904 (1923)	.908 (2356)
Poor (below 50% of median per capita income)	.173 (1962)	.164 (1675)	.226 (1872)	.172 (2210)
Number of People in Household	3.429 (2094) std=1.76	3.108 (1794) std=1.56	3.377 (1923) std=1.74	2.813 (2359) std=1.36
Elementary School Education or Less	.383 (2094)	.512 (1794)	.366 (1923)	.273 (2359)
Lives in Majority Roma/Gypsy Settlement	.112 (2094)	.060 (1788)	.024 (1923)	.002 (2359)
Spoke Roma while Growing up	.079 (2008)	.025 (1793)	.024 (1923)	.005 (2350)
Spoke Turk while Growing up	.117 (2008)			
Spoke Hungarian while Growing up			.107 (1923)	
Spoke Ukrainian while Growing up				.060 (2347)
Spoke Majority Language only	.788 (2008)	.923 (1793)	.809 (1923)	.845 (2356)

Table 2. Interviewer Classification of Ethnicity by Self identification of Ethnicity, Bulgaria, 1999-2000, weighted percentages.

Interviewer Classification as Roma	Self Identification as Roma	
	No	Yes
No	97.36	1.01
Yes	2.64	98.99
	100%	100%
<i>N</i>	1528	481

Interviewer Classification as Turk	Self Identification as Turk	
	No	Yes
No	99.76	13.66*
Yes	.24	86.34
	100%	100%
<i>N</i>	1721	289

\*See Appendix Table 4 for a breakdown of the 67 cases in this cell.

Interviewer Classification as Majority	Self Identification as Majority	
	No	Yes
No	96.99	3.20
Yes	3.01	96.80
	100%	100%
<i>N</i>	702	1305

Table 3. Interviewer Classification of Ethnicity by Self identification of Ethnicity, Hungary  
1999-2000, weighted percentages.

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Interviewer Classification as Roma	Self Identification as Roma	
	No	Yes
No	96.73	0.00
Yes	3.27	100.00
	<hr/>	<hr/>
	100%	100%
<i>N</i>	1598	199

Interviewer Classification as Majority	Self Identification as Majority	
	No	Yes
No	84.24	3.35
Yes	15.76	96.65
	<hr/>	<hr/>
	100%	100%
<i>N</i>	118	1678

Table 4. Interviewer Classification of Ethnicity by Self identification of Ethnicity, Romania, 1999-2000, weighted percentages.

Interviewer Classification as Roma	Self Identification as Roma	
	No	Yes
No	96.76	0.00
Yes	3.24	100.00
	100%	100%
<i>N</i>	1797	127

Interviewer Classification as Hungarian	Self Identification as Hungarian	
	No	Yes
No	99.19	6.59*
Yes	.81	93.41
	100%	100%
<i>N</i>	1798	126

\* See Appendix Table 3 for a breakdown of this cell.

Interviewer Classification as Majority	Self Identification as Majority	
	No	Yes
No	92.19	3.12
Yes	7.81	96.88
	100%	100%
<i>N</i>	234	1690

Table 5. Interviewer Classification of Ethnicity by Self identification of Ethnicity, Russia, 1999-2000, weighted percentages.

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Interviewer Classification as Ukranian	Self Identification as Ukranian	
	No	Yes
No	98.36	55.95
Yes	1.64	44.05
	<hr/>	<hr/>
	100%	100%
<i>N</i>	2255	112

Interviewer Classification as Majority	Self Identification as Majority	
	No	Yes
No	72.35	1.81
Yes	27.65	98.19
	<hr/>	<hr/>
	100%	100%
<i>N</i>	205	2167

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Table 6. Interviewer Classification as Roma by Self identification as Roma by Language Spoken as a Child, Bulgaria, Hungary, and Romania, 1999-2000, weighted percentages.

People Who Spoke Roma/Gypsy Language while Growing Up

Interviewer Classification as Roma	Self Identification as Roma	
	No	Yes
No	57.19	.21
Yes	42.81	99.79
	100%	100%
<i>N</i>	50	599

People Who Did Not Speak Roma/Gypsy Language while Growing Up

Interviewer Classification as Roma	Self Identification as Roma	
	No	Yes
No	97.14	1.64
Yes	2.86	98.36
	100%	100%
<i>N</i>	7231	212

Table 7. Odds Ratios from Survey Logistic Regression of Interviewer Classification as Roma on Selected Independent Variables, Bulgaria, Hungary and Romania, 1999-2000.

Independent Variable	Odds Ratio	P Value
Self Identification as Roma	808.65	.000
In Poverty (below 50% of Median Per Capita Income in country)	2.58	.000
Number of People in Household	1.36	.000
Elementary School Education or Less	3.55	.000
Lives in Majority Roma/Gypsy Settlement	12.53	.000
Spoke Roma/Gypsy Language as a Child	21.96	.000
N	5427	

Table 8. Odds Ratios from Survey Logistic Regression of Interviewer Classification as Majority on Selected Independent Variables, Bulgaria, Hungary, Romania and Russia, 1999-2000.

Independent Variable	Odds Ratio	P Value
Self Identification as Majority	73.21	.000
In Poverty (below 50% of Median Per Capita Income in country)	.47	.000
Number of People in Household	.80	.000
Elementary School Education or Less	.29	.000
Spoke Majority Language Only as a Child	10.24	.000
N	7650	

Appendix Table 1. Descriptive Statistics for Variables Used in the Analysis: Bulgaria, Hungary, Romania and Russia, 1999-2000. (N in Parentheses)

Variables	Bulgaria	Hungary	Romania	Russia
Interviewer Classification as Roma	.297 (2094)	.201 (1794)	.162 (1923)	
Interviewer Classification as Turk	.114 (2094)			
Interviewer Classification as Hungarian			.067 (1923)	
Interviewer Classification as Ukrainian				.034 (2496)
Interviewer Classification as Majority	.600 (2094)	.872 (1794)	.811 (1923)	.921 (2496)
Self Identification as Roma	.239 (2118)	.111 (1793)	.066 (1923)	
Self Identification as Turk	.144 (2008)			
Self Identification as Hungarian			.066 (1923)	
Self Identification as Ukrainian				.047 (2351)
Self Identification as Majority	.651 (2005)	.935 (1792)	.879 (1923)	.916 (2356)
Poor (below 50% of median per capita income)	.288 (1983)	.233	.309 (1872)	.143 (2332)
Number of People in Household	3.726 (2118) std=2.175	3.323 (1926) std=1.854	3.686 (1923) std=2.076	2.762 (2496) std=1.384
Elementary School Education or Less	.531 (2118)	.466 (1926)	.436 (1923)	.225 (2496)
Lives in Majority Roma/Gypsy Settlement	.261 (2118)	.114 (1788)	.063 (1923)	
Spoke Roma while Growing up	.209 (2008)	.060 (1793)	.060 (1922)	
Spoke Turk while Growing up	.172 (2008)			
Spoke Hungarian while Growing up			.099 (1923)	
Spoke Ukrainian while Growing up				.058 (2347)
Spoke Majority Language only	.612 (2008)	.886 (1793)	.796 (1923)	.849 (2356)

Appendix Table 2. Interviewer Classification of Ethnicity by Self identification of Ethnicity, Oversample of Roma, 1999-2000, weighted percentages.

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Interviewer Classification as Roma	Self Identification as Roma	
	No	Yes
No	38.32	0.00
Yes	61.68	100.00
	<hr/>	<hr/>
	100%	100%
<i>N</i>	632	673

Appendix Table 3. Interviewer Classifications and Additional Self-Classifications of Those Who Self Identify as Hungarian and Interviewer Does not Classify as Hungarian, Romania. N=11  
(Multiple Interviewer Classifications and Self Identifications are Possible)

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Interviewer ID as Roma, not Majority, Do not Self ID as Roma or Majority:	18.2%
Interviewer ID as Roma, not Majority, Self ID as Roma, not Majority:	18.2%
Interviewer ID as Majority, not Roma, Self ID as Majority, not Roma:	36.4%
Interviewer ID as Majority, not Roma, Only Self ID as Hungarian	27.3%
Interviewer does not ID as Roma or Majority, Only self ID as Hungarian, Int. ID as Other	0.0%
Interviewer does not ID as Roma or Majority, Only self ID as Hungarian, No interviewer ID:	0.0%
Interviewer ID as Roma, not Majority, Self ID as Majority, not Roma:	0.0%
	<hr/> 100%

Appendix Table 4. Interviewer Classifications and Additional Self-Classifications of Those Who Self Identify as Turk and Interviewer Does not Classify as Turk, Bulgaria. N=67  
(Multiple Interviewer Classifications and Self Identifications are Possible)

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Interviewer ID as Roma, not Majority, Do not Self ID as Roma or Majority:	65.7%
Interviewer ID as Roma, not Majority, Self ID as Roma, not Majority:	25.4%
Interviewer ID as Majority, not Roma, Self ID as Majority, not Roma:	4.5%
Interviewer ID as Majority, not Roma, Only Self ID as Turk	0.0%
Interviewer does not ID as Roma or Majority, Only self ID as Turk, Interviewer ID as Armenian:	1.5%
Interviewer does not ID as Roma or Majority, Only self ID as Turk, No interviewer ID:	1.5%
Interviewer ID as Roma, not Majority, Self ID as Majority, not Roma:	1.5%
	<hr/> 100%

Appendix Table 5. Odds Ratios from Logistic Regression of Interviewer Classification as Roma on Selected Independent Variables, Limited to Those who do not Self Identify as Roma, Bulgaria, Hungary and Romania, 1999-2000.

Independent Variable	Odds Ratio	P Value
In Poverty (below 50% of Median Per Capita Income in country)	2.58	.000
Number of People in Household	1.36	.000
Elementary School Education or Less	3.52	.000
Lives in Majority Roma/Gypsy Settlement	12.67	.000
Spoke Roma/Gypsy Language as a Child	21.37	.000
N	4658	