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The Correlates of Crime and Deviance: Additional Evidence

Olena Antonaccio¹, Charles R. Tittle², Ekaterina Botchkovar³, andMaria Kranidiotis⁴

Abstract
Comparable survey data collected simultaneously in major cities in Greece, Russia, and Ukraine indicate that the usual correlates of self-reported criminal/deviant behavior derived from research in well-studied, mostly Western societies, do not necessarily hold cross-nationally. The data confirm only two of six potential correlates of self-reported criminal/deviant behavior—age and deviant peer association. Two widely assumed correlates of criminal propensity—gender and marital status—prove to be somewhat unreliable and sensitive to these cultural contexts. Religiosity is generally negatively linked to crime/deviance in bivariate but not multivariate analyses. In bivariate analysis socioeconomic status (SES) proves to be highly sensitive to the investigated cultural contexts whereas in multivariate

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analysis SES is not significantly related in any consistent fashion to criminality in any of the three countries. These results show the value of cross-cultural research and suggest that effective explanation of criminal and deviant behavior may require more attention to cultural variations.

Keywords
crime, correlates, cross-national

Research has identified several patterns of criminal or deviant propensity among individuals. The most frequently noted regularities are elevated chances of misconduct by males, youth, those of lower socioeconomic status, the less religious, those with deviant peers, and the unmarried. Crime/deviance textbooks typically describe such patterns (e.g., Brown, Esbensen, and Geis 2004:Chapter 4; Siegel 2003:Chapter 3; Tittle and Paternoster 2000:Chapter 10) and most scholars recognize that adequate theories must account for them (see e.g., Agnew 2006:127; Akers 1998:341; Braithwaite 1989:44; Gottfredson and Hirschi 1990:124; Tittle 1995:227).

Some of these correlates are stronger than others, and agreement among scholars about some is not complete. For example, almost all agree about variations in misconduct by gender, age, and deviant/criminal peer association (see popular textbooks like Brown et al. 2004:Chapter 4; Siegel 2003:Chapter 3), and most agree about at least moderate variations in misbehavior by religiosity (e.g., Baier and Wright 2001; Benda 1995; Evans et al. 1995; Johnson et al. 2000) and marital status (Laub and Sampson 2003; Sampson, Laub, and Wimer 2006). The relationship between socioeconomic status and crime, however, is somewhat controversial. Although the prevailing view (e.g., Braithwaite 1981; Ellis 2004a, 2004b; Ellis and McDonald 2001; Hagan 1992), incorporated into numerous theories (Tittle 1983), is of a negative association between SES and crime/deviance (at least for ordinary crime), some question whether SES is linked in any consistent way to criminal propensity (e.g., Tittle, Viliesmez, and Smith 1978; Wright et al. 1999).

However, all of these potential correlates of crime/deviance may be questioned because they are based mainly on research in locales where official police data are available and/or surveys about crime and deviance are common. Moreover, they often rest on studies of adolescents or students. Until descriptions of crime and deviance draw on a broader array of societies and apply to the full age range, the adequacy of theories predicting the described patterns will be questionable.
We investigate whether the six patterns of misbehavior noted previously are present among adults in three less studied societies, using comparative surveys of self-reported criminal/deviant behavior among random samples of adults of all ages conducted simultaneously in major cities in Greece, Russia, and Ukraine. If the usual correlates are verified, confidence in theoretical explanations about them will be enhanced, but if those patterns are not sustained, some reorientation in theory development may be needed.

**Extant Evidence**

**Gender and Crime/Deviance.** Greater propensity for male misbehavior is one of the most robust and well agreed upon supposed patterns (e.g., Elliott 1994; Nagel and Hagan 1983; Smith and Visher 1980; Spinellis et al. 1994; and summaries of the literature in Braithwaite 1989:44-5; Gottfredson and Hirschi 1990:144-46; Sutherland, Cresse, and Luckenbill 1992:159-64; Wilson and Herrnstein 1985:105-17). Males are disproportionately arrested for almost all offenses, though the “gender gap” seems to vary by seriousness of the offense (Heimer 2000; Smith and Visher 1980; Steffensmeier and Allan 1996; Steffensmeier and Streifel 1991). Self-reports, including those of adults, as well as victimization surveys confirm gender differences, though the gap is smaller in survey data and even non-existent for some minor offenses (e.g., Dunaway et al. 2000; reviews in Braithwaite 1989:44; Smith and Visher 1980).

As assumption of a universal “gender gap” in misbehavior (Heimer 2000; Steffensmeier and Allan 1996), however, may be premature because most of the relevant evidence comes from studies conducted in the United States and other Western countries such as the United Kingdom (see e.g., Budd, Sharp, and Mayhew 2005; Roe and Ashe 2008). In addition, one extensive cross-national project, the International Self-Reported Delinquency Study, focusing on adolescents in 13 Western nations (Junger-Tas, Marshall, and Ribeaud 2003; Junger-Tas, Terlouw, and Klein 1994), confirms the usual findings about crime and gender but also points to the possibility of some cross-national variations in sizes of “gender gaps.”

**Age and Crime/Deviance.** Another accepted correlate of crime/deviance, which some contend is “invariant” (Gottfredson and Hirschi 1990; Hirschi and Gottfredson 1983), is age. The typical pattern involves increases in misconduct through the adolescent years up to the late teens or early 20s, with steady declines thereafter (e.g., Blumstein et al. 1986; Hirschi and Gottfredson 1983; Sampson and Laub 1993; Steffensmeier et al. 1989).
Strict invariance has been challenged (Greenberg 1985; Steffensmeier et al. 1989) by evidence showing the parameters of age-crime distributions for some offenses, such as lower risk property crimes (e.g., forgery, fraud, tax cheating) and public-order offenses (e.g., gambling), to vary substantially across time and space, with potential later peaks, flatter curves, and slower rates of decline than usual (Junger-Tas et al. 2003; Steffensmeier et al. 1989). However, most research, including self-report crime surveys of adults conducted in the United States and United Kingdom, shows the general shape of the age/ordinary crime curve to be similar across varied conditions (e.g., Budd et al. 2005; Dunaway et al. 2000; Farrington et al. 2006; Tittle 1980; Tittle and Grasmick 1997). And, although the full age/crime curve is usually curvilinear, linear techniques show a general negative relationship across places and times for adults because a decline in crime probability begins in early adulthood and continues throughout the life course (Gottfredson and Hirschi 1990; Hirschi and Gottfredson 1983; Tittle 1980). Still, age and ordinary crime have not been studied extensively in all types of societies, so invariance cannot be assumed. Even in well-studied societies survey data covering the full age range are scarce, and some research suggests that age/crime distributions may be quite different in non-Western societies (Greenberg 1985; Pridemore 2002, 2003). For instance, Pridemore (2003) argues that homicide offenders in Russia may be substantially older there than in most Western nations, noting higher mean ages among Russians arrested for all crimes.

Socioeconomic Status and Crime/Deviance. Perhaps the most controversial correlate of crime is socioeconomic status (SES). A negative relationship between individuals’ SES and their propensity toward ordinary, street crime has traditionally been assumed, though data prior to the advent of self-report survey studies was at best oblique because official police data in the United States do not contain information about offender’s SES (see Tittle et al. 1978). Results from self-report studies have been interpreted differently. Some think they show nonexistent or only slight differences in offenders’ socioeconomic statuses, especially those committing less serious crimes (see Dunaway et al. 2000; Spinellis et al. 1994; Tittle et al. 1978; Wright et al. 1999), but others argue that they confirm traditional interpretations (e.g., Braithwaite 1981; for a review, see Ellis and McDonald 2001). This difference of opinion about interpretations of research on SES and crime and their implications has sparked a long-running debate involving disagreement on a wide array of issues, including the quality of self-report data and appropriate measurement of SES and crime/deviance (e.g., Braithwaite...

Because official data are incomplete and survey data have been questioned, controversy about SES and crime/deviance cannot be easily resolved. More systematic exploration of the SES-crime relationship in a variety of cultural contexts, however, may help. Present evidence is mostly from English-speaking Western countries (but see Ellis and McDonald 2001), but some recent research in other contexts show different results. One study from Ankara, Turkey, reports a positive association between SES and juvenile delinquency (Özbay and Özcan 2006) and others find no SES/crime relationship in Germany and Russia in samples of juveniles and adults, respectively (Becker and Mehlkop 2006; Tittle and Botchkovar, 2005a).

Religiosity and Crime/Deviance. Stimulated by long-term theorizing about potential effects of religion on different kinds of social behavior, including crime and deviance (Durkheim [1897] 1966; Lombroso 1911; Weber [1905] 1950), numerous studies have pointed toward religiosity as a moderate antidote for criminal behavior (Baier and Wright 2001; Johnson et al. 2000; Tittle and Welch 1983). Some, however, fail to find this effect under certain conditions (e.g., Benda and Corwyn 1997; Hirschi and Stark 1969; Ross 1994; Tittle and Botchkovar 2005a; Welch et al. 2006) and sometimes evidence has suggested a conditional relationship based on the religious make-up in the individual’s community (e.g., Baier and Wright 2001; Benda 1995; Evans et al. 1995; Johnson et al. 2000; Stark, Kent, and Doyle 1982; Tittle and Welch 1983; Welch, Tittle, and Petee 1991). Nevertheless, many scholars consider a negative relationship between religiosity and crime/deviance as another regularity to be explained (see e.g., Tittle and Paternoster 2000). Yet, associations between religiosity and crime may be sensitive to cultural and other contextual conditions.

Deviant Peer Association and Crime/Deviance. Another persistent and well substantiated crime/deviance pattern is the association between having peers or close associates who are involved in misbehavior and one’s own propensity toward misconduct (see e.g., Akers 1998; Braithwaite 1989; Haynie 2001; Loeber and Dishion 1987; Thornberry et al. 1994; Warr 1993, 2002; for a review, see Akers and Sellers 2004). Practically every study exploring the relationship between peer crime/deviance and personal
misbehavior has reported a strong positive association (see e.g., Thornberry et al. 1994, 2003; Tittle 1980; Warr 1993). However, many of these studies employed juvenile samples and the extent to which a deviant peer/personal misconduct association characterizes all societies has not been fully documented (but see e.g., Hwang and Akers 2003; Tittle and Botchkovar 2005a).

Marital Status and Crime/Deviance. Contemporary social scientists have turned much attention to marriage as an event or condition potentially shielding individuals from antisocial behavior, and a number of studies support the argument (e.g., Farrington and West 1995; Giordano, Cernkovich, and Rudolph 2002; King, Massoglia, and MacMillan 2007; Laub and Sampson 2003; Sampson et al. 2006; Sampson and Laub 1993; Tittle 1980; Warr 1998; for a review, see Laub and Sampson 2001). However, some evidence is contradictory or shows only limited conditional effects for marriage (Giordano et al. 2002; King et al. 2007; Knight, Osborn, and West 1977). Importantly, the research has been limited mainly to male samples (but see Giordano et al. 2002; King et al. 2007; Tittle 1980) and has been conducted mostly in Western, English-speaking nations such as the United States and United Kingdom.

Cultural and Contextual Differences

Establishing the generality of the six discussed patterns of crime/deviance requires additional evidence from cultural contexts that differ among themselves as well as differ from those typically studied. To try to help fill this need, we focus on three countries. Greece, a Southern European country, is more or less representative of many other western European nations, although it does not fully resemble the Western countries in which crime surveys have most commonly been carried out. By contrast, two neighboring countries, Russia and Ukraine, both former Soviet Union republics still in states of transition, clearly exemplify non-Western contexts and are quite different from each other. As the figures in Appendix Table 1 show, these three countries differ along many political, economic, and social dimensions (see Antonaccio and Tittle 2008; Tittle and Botchkovar 2005b).

Various sources also document differences in rates of crime and victimization in those countries. Higher levels of homicide and other violence in Russia and Ukraine have been substantiated by the United Nations, and such rates are consistent with other research using official data as well as with limited self-report and victimization surveys (Council of Europe 2003; Gilinskiy 2006; Kostenko 1999-2000; Pridemore 2001, 2003; Tittle
Table 1. Descriptive Statistics for Variables Used in the Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Greece</th>
<th>Russia</th>
<th>Ukraine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Range</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Gender</td>
<td>0 to 1</td>
<td>.50</td>
<td>.50</td>
</tr>
<tr>
<td>Age</td>
<td>18 to 85</td>
<td>43.30</td>
<td>15.97</td>
</tr>
<tr>
<td>Socioeconomic status scale</td>
<td>0 to 6</td>
<td>3.35</td>
<td>1.24</td>
</tr>
<tr>
<td>Religiosity scale</td>
<td>−1.97 to 2.49</td>
<td>.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Peer deviance measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index (ln)</td>
<td>.00 to 3.09</td>
<td>1.09</td>
<td>.88</td>
</tr>
<tr>
<td>Violence scale</td>
<td>−.62 to 3.20</td>
<td>.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Property offender scale</td>
<td>−.60 to 2.48</td>
<td>.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Fraud</td>
<td>1.00 to 3.00</td>
<td>1.97</td>
<td>.84</td>
</tr>
<tr>
<td>Marital status</td>
<td>0 to 1</td>
<td>.58</td>
<td>.50</td>
</tr>
<tr>
<td>Past criminal/deviant behavior</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variety Index (ln)</td>
<td>.00 to 2.08</td>
<td>.52</td>
<td>.57</td>
</tr>
<tr>
<td>Violence scale</td>
<td>−.39 to 5.61</td>
<td>.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Property offender scale</td>
<td>−.32 to 6.18</td>
<td>.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Fraud</td>
<td>1.00 to 3.00</td>
<td>1.60</td>
<td>.76</td>
</tr>
</tbody>
</table>
and Botchkovar 2005a, 2005b; United Nations Office on Drugs and Crime 2006). In addition, Transparency International (2007) ranks Russia and Ukraine among the more corrupt countries of the world but regards Greece as close to average in degree of corruption. In short, the marked contrasts among the countries in our study make tests of sensitivity to contextual variations of the correlates of crime/deviance possible.

**Methods**

**Sample.** Data are from random sample household surveys of residents of Athens, Greece, Nizhni Novgorod, Russia, and Lviv, Ukraine, using a common instrument in the specific language of each country. The data were collected in the fall of 2006 by professional survey organizations in each of the three countries, employing face-to-face interviews with 400 randomly selected individuals 18 years or older in Greece, 500 in Russia, and 500 in Ukraine. To reinforce guarantees of anonymity, actual self-reports about misbehavior were supplied by respondents on a short questionnaire answered away from the interviewer and sealed in an envelope.

To our knowledge, these are the first random sample surveys in each of the three countries where adult respondents of all ages reported extensively on their past and projected criminal behavior. Moreover, because the data were collected simultaneously in the three countries, they seem especially useful for assessing the cross-cultural generality of variations in misbehavior that are thought to characterize people in more commonly surveyed countries. However, because surveys are less common in these countries, it is important to evaluate the representativeness of the samples. The figures in Appendix Table 2 show that comparisons with figures for the most recent censuses with respect to gender, age, and marital status are mostly favorable. In addition, our survey data on self-reported crime seem to confirm the trends in crime rates noted in other sources as Greek respondents report lower rates of commission for all types of misbehavior (Appendix Table 1).

**Crime/Deviance Measures.** Because both self-reports of past criminal/deviant behavior and self-projections/estimates of the future chances of criminal/deviant behavior have enjoyed some degree of validation and have been widely employed in establishing empirical regularities concerning crime/deviance in well-surveyed nations (Akers et al. 1983; Cantor and Lynch 2000; Green 1989; Hay 2001; Hindelang, Hirschi, and Weis 1981; Murray and Erickson 1987; Petersilia 1978; Pogarsky 2004; Thornberry and Krohn 2000), we conduct our analyses using both kinds of measures.
Table 2. Bivariate Correlations among Predictors and Crime/Deviance Measures

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variety Index (ln)</th>
<th>Violent Offending Scale</th>
<th>Property Offending Scale</th>
<th>Fraud</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Greece</td>
<td>Russia</td>
<td>Ukraine</td>
<td>Greece</td>
</tr>
<tr>
<td>Gender</td>
<td>-.03</td>
<td>-.19*</td>
<td>-.22*</td>
<td>-.03</td>
</tr>
<tr>
<td>Age</td>
<td>-.33*</td>
<td>-.38*</td>
<td>-.39*</td>
<td>-.15*</td>
</tr>
<tr>
<td>Socioeconomic status scale</td>
<td>-.05</td>
<td>.16*</td>
<td>.26*</td>
<td>-.02</td>
</tr>
<tr>
<td>Religiosity scale</td>
<td>-.23*</td>
<td>-.09*</td>
<td>-.24*</td>
<td>-.12*</td>
</tr>
<tr>
<td>Peer deviance</td>
<td>.36*</td>
<td>.59*</td>
<td>.73*</td>
<td>.40*</td>
</tr>
</tbody>
</table>

a. N varies with the variables and countries because of different sample sizes for each country and a listwise deletion of cases with missing data.

* p < at least .05. (two-tailed)
Table 3. Ordinary Least Squares Regression Models Predicting Past Crime/Deviance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variety Index (ln)</th>
<th>Violence Scale</th>
<th>Property Offending Scale</th>
<th>Fraud</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Greece</td>
<td>Russia</td>
<td>Ukraine</td>
<td>Greece</td>
</tr>
<tr>
<td>Gender</td>
<td>.00</td>
<td>.05</td>
<td>.00</td>
<td>–.04</td>
</tr>
<tr>
<td>Age</td>
<td>–.01*</td>
<td>.00</td>
<td>–.20</td>
<td>–.01*</td>
</tr>
<tr>
<td>Socioeconomic status scale</td>
<td>–.04</td>
<td>.02</td>
<td>–.08</td>
<td>.02</td>
</tr>
<tr>
<td>Religiosity scale</td>
<td>–.09*</td>
<td>.03</td>
<td>–.16</td>
<td>–.03*</td>
</tr>
<tr>
<td>Peer Deviation Index (ln)</td>
<td>.21*</td>
<td>.33</td>
<td>.38*</td>
<td>.52</td>
</tr>
<tr>
<td>Peer violence scale</td>
<td>.40*</td>
<td>.40</td>
<td>.41*</td>
<td>.41</td>
</tr>
<tr>
<td>Peer property offender</td>
<td>.40*</td>
<td>.40</td>
<td>.41*</td>
<td>.41</td>
</tr>
<tr>
<td>Marital status</td>
<td>–.11*</td>
<td>.06</td>
<td>–.10</td>
<td>.08</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.23</td>
<td>.38</td>
<td>.56</td>
<td>.18</td>
</tr>
<tr>
<td>N</td>
<td>394</td>
<td>487</td>
<td>499</td>
<td>397</td>
</tr>
</tbody>
</table>

* p < at least .05. (two-tailed)
However, because the patterns of results are basically similar with both measures, we report only those results using past reports (results using future projections can be obtained from the authors).

Questions on crime/deviance were oriented around seven acts, including three items about violence, three about theft, and one concerning fraud (Appendix Table 3). Respondents reported the frequency with which they had committed each in the past five years. From the responses, we first created a general variety index of past crime/deviance by dichotomizing the items to differentiate between those who in the last five years never did a particular type of misbehavior (0) and the others (1), summing across the seven offenses, and log-transforming the scores to adjust distributions (skewness was reduced from the range .90 to 1.7 to the range of .06 to .70). Second, we constructed separate measures for specific offenses using collapsed response categories to adjust for skewness. Because the three violence items and the three property offending items formed single factors, we combined them, respectively, into separate factor-based scales of violence and property offending by multiplying the factor coefficients by $z$ scores and summing. Finally, we employed reports of “distorting the truth to get something you wanted” as a single-item measure of fraud.

**Potential Correlates of Crime/Deviance**

**Gender/sex.** Respondents identified themselves either as males (coded 0) or females (coded 1). Descriptive statistics for this and all other variables used in the analyses, as well as alphas for all scales, are displayed in Table 1 and correlations between all independent variables are shown in Appendix Table 3.

**Age.** Respondents gave their year of their birth, from which we calculated age in years.

**Socioeconomic status.** Although researchers disagree about the best method of operationalizing SES, the most popular measures have focused on education, occupational prestige, and income, either singly or in some combination. Yet the conventional indicators of SES commonly used in most Western studies have different meanings elsewhere. For example, because of specific economic and political conditions in contemporary Russia and Ukraine, it is more common than in Western societies for people with higher levels of education and with what in the West are regarded as more prestigious occupations to have lower levels of income than individuals with less education and with lower-ranking occupations.
Moreover, because of an extensive shadow economy and informal barter labor market, income itself does not necessarily imply the same thing that it does in the United States and other modern societies. Therefore, we use a direct consumption approach wherein we try to assess the person’s relative access to various goods and services through six survey items (Appendix Table 3).

We employed scalogram analysis (Guttman scaling) to assess the cumulativity of the six indicators and to construct the SES measure (McIver and Carmines 1981; Menzel 1953). To test for scalability, we hand manipulated the data on the six SES survey items for a random sample of 105 cases from all three countries. The six survey items formed a strong scale. Based on the response patterns in the scalogram, scores were then assigned to the full sample of respondents with a score of 6 indicating the highest economic power and 0 reflecting the lowest.

**Religiosity.** Various measures of religiosity, including single indicators such as church attendance, have been employed by researchers but most acknowledge (Johnson et al. 2000) that religiosity consists of a number of elements that should be combined. We did not elicit indicators for all aspects of religiosity, but the survey does contain four behavioral and attitudinal items that seem to be crucial to religious belief and practice (Appendix Table 3). Using the principal components analysis, we factor analyzed those four survey items. The items formed single factors, so for each country we constructed a composite scale of religiosity in the manner described previously for the crime/deviance indicators.

**Peer crime/deviance.** We derive general as well as offense-specific measures of peer deviance from respondents’ reports of the frequency with which “most of their friends” commit each of the seven acts described previously. First, we formed general measures of peer deviance by summing responses to these seven survey items and transformed them using a natural logarithm to adjust for their skewed distributions. Second, because the three peer-violence items and the three peer-property offending items formed strong single factors in all three countries, we derived factor-based scales of peer violent and property offending in the manner described previously. Finally, we use the item concerning frequency of fraud as a single-item measure of peer fraudulent behavior.
Marital status. We use a survey item asking respondents about their current marital status to construct the dichotomous measure differentiating between those married (1) and else (0).

Analyses

We use both bivariate and multivariate analyses to determine if the six presumed correlates of crime/deviance are also predictive in our samples. First, if the six variables predict crime/deviance as they have elsewhere, we should observe reasonably strong, statistically significant bivariate associations between each of the variables and the misconduct measures. Second, because the six correlates of crime may to some extent overlap (e.g., gender and religiosity as well as age and peer deviance, respectively, may capture the same domains of variation), making it difficult to establish the basic relationships between given variables and the measures of crime/deviance, we also use ordinary least squares (OLS) multiple regression to determine which of the six variables predicts crime/deviance independently of the others.

Because our analyses produce multiple outcomes concerning any given correlate of crime (for different samples and different modes of analysis), we employ some “rules of thumb” in making decisions about whether sets of results show consistency with prior research. We interpret a given set of results as completely reliable if in every test the outcome is as expected from prior research. However, if deviations from complete consistency do not exceed 20 percent, we interpret the outcome as “generally,” or basically, reliable. If departures from the expected pattern of the results are between 50 percent and 80 percent, we treat the regularity in question as somewhat uncertain. Finally, if 50 percent of the outcomes or more are contrary to expectations, we conclude that the pattern is unreliable.

Results

Gender/Sex. Row 1 of Table 2 shows the associations between gender/sex and each of four measures of crime/deviance for each of three countries. The results show that three fourths of the figures conform to expectations. Of the 12 correlations, 9 show the expected pattern. For three of the four measures of crime/deviance (the variety indexes and the violence and property offending scales), the typical gender pattern is observed among the Russian and the Ukrainian samples but not among the Greek respondents. Although no significant associations between gender and fraud are found
in any country, these outcomes are consistent with some previous research indicating that the “gender gap” may be very small or even nonexistent for trivial offenses. However, no gender/crime associations at all are found in Greece. Finally, the magnitude of the violence correlation in Russia and Ukraine is not significantly greater than for property offending.

Row 1 in Table 3 shows unstandardized and standardized regression coefficients for gender predicting the crime/deviance measures controlling for other crime/deviance correlates. Only one significant negative coefficient, in the Russian sample, emerges. Hence, the data suggest unreliability in predicting crime/deviance from gender.

Age. The data in row 2 of Table 2 clearly show a significant negative association between age and misbehavior in all instances. The magnitude of those associations ranges from a high of –.39 in the case of age predicting the variety index in Ukraine to a low of –.15 for age predicting violent offending in Greece. Thus, our data are consistent with the claim that the age/crime relationship is “invariant” (see Gottfredson and Hirschi 1990), at least in its general form.

It should be noted, however, that scatter plots and formal diagnostic statistics show that the relationship between age and crime/deviance in these data is not always completely monotonic or linear and demonstrates some variability in peaks of distributions. Given that our analysis is based on mean scores within five-year time blocks, some deviation from linearity is no doubt due to random error. Nevertheless, there is sufficient variation in several instances to provide some support for those who have challenged the validity of the “invariance” hypothesis by interpreting it to mean complete similarity across all conditions (Steffensmeier et al. 1989).

As shown in row 2 of Table 3, net of the other correlates of crime and deviance, age continues to show significant (and negative) associations with the measures of crime/deviance in 9 of the 12 equations, failing only in the case of violent and fraud offending in Greece and property offending in Russia. Thus, even though in a few instances age is not independently associated with the crime/deviance measures, overall the findings seem to confirm that age is a generally reliable, albeit not a completely invariant, predictor of crime.

Socioeconomic Status. Row 3 of Table 2 concerns SES and crime/deviance. The present cross-cultural data support those who view the SES/crime relationship as problematic. Of the 12 relevant correlations, only 1 is negative and statistically significant (property offending in Greece). Of the
associations, 3 are statistically insignificant (all among the Greek sample) while 8 of the 12 (all of the associations in Russia and Ukraine) are positive and significant. Thus, in the two countries where a pattern is discernable—Russia and Ukraine—the higher the economic comfort of the respondents, the greater the crime/deviance propensity. Moreover, the multivariate coefficients in row 3 of Table 3 concerning the prediction of crime/deviance measures from SES show only 3 of 12 coefficients to be statistically significant. Two of those three significant coefficients are positive. Thus, these results support the interpretation that the SES-crime/deviance relationship is unreliable.

Religiosity. Row 4 of Table 2 shows the bivariate associations between religiosity and each of four measures of crime/deviance. According to usual expectations, the figures show that 10 of the 12 correlations are negative and statistically significant, though only modest in strength (ranging from a high of −.25 in the case of religiosity predicting violent offending in Ukraine to a low of −.09 for religiosity predicting the variety index in Russia). This association seems to be weakest in the Russian sample. Not only are the significant coefficients lower in magnitude there, but both of the nonsignificant coefficients are for the Russian sample. Overall, the bivariate correlations suggest that religiosity may generally be a good predictor of crime/deviance, even though the consistency and magnitude of the association between the two may be relatively low in some cultural contexts. However, only 5 of 12 multivariate coefficients (row 4 of Table 3) are significant, with 3 of the 5 in the Greek sample (all measures of crime/deviance except property offending) and the other 2 evident in the Ukrainian sample (for the crime/deviance variety index and violence). Moreover, even the significant multivariate coefficients are substantially lower than in bivariate form. Thus, the association of religiosity with crime/deviance seems to be somewhat uncertain.

Peer Crime/Deviance. Correlations in rows 5 through 8 of Table 2 confirm the expected positive relationships between deviant peer association and crime documented by extant research. In every instance there is a significant, positive, strong relationship between having criminal/deviant peers and misconduct by the respondent. The correlations range from a high of .73 for the variety index in Ukraine to a low of .31 for the fraud indicator in Greece. Thus, our bivariate coefficients verify deviant/criminal peer association as one of the strongest correlates of crime/deviance.

Figures assessing effects of peer crime/deviance on respondents’ misconduct, controlling for other variables, are shown in rows 5, 6, 7, and 8 of Table 3. Although coefficients are reduced from their bivariate levels in
almost all instances, the association between criminal peer association and crime/deviance remains statistically significant and moderate to strong in magnitude. Moreover, the standardized coefficients for criminal/deviant peer association are the largest in each model. Overall, data seem to confirm that criminal/deviant peer association is a completely reliable predictor of misbehavior.

**Marital Status.** Rows 9 and 10 of Table 2 show associations between marital status and the four measures of crime/deviance. Only in Greece does marital status seem to exercise protective effects usually attributed to it, showing significance in Greece for three of the four measures of crime/deviance (not present for violence). In the multiple regression (row 9, Table 3), the pattern of relations between marriage and crime in Greece is the same as in the bivariate analyses whereas no statistically significant relationships are found in Ukraine or Russia with the exception of one significant association in Ukraine (which is also in the direction opposite to predicted). Thus, the general the import of marital status seems to depend on cultural context, suggesting that marital status may be an unreliable predictor of criminal/deviant behavior.

**Summary and Discussion**

Our bivariate and multivariate analyses of the potential correlates of crime/deviance produce consistent results for four of the six variables. Both types of analysis confirm reliability in anticipating higher crime/deviance probability for individuals who associate with criminal/deviant peers and a high general (though not invariant) degree of reliability in predicting the chances of crime/deviance from age. Thus, the relationships of these two variables with misbehavior might be regarded as largely impervious to the cultural contexts we investigate here.

At the same time, both types of analyses are consistent in suggesting that sex/gender and marital status are unreliable predictors of probabilities of crime/deviance, with both of them being sensitive to cultural context.Ironically, while Greece is more culturally similar to the usually surveyed Western nations, our Russian and Ukrainian results are more in line with previously found patterns. We find no gender differences in any of our three countries in propensities for fraudulent behavior, which we interpret to be a trivial offense. But, there is also an absence of any significant relationships between gender and more serious misconduct in our Greek sample. Perhaps this is because Greece has a low overall crime environment. Less variation in crime/deviance makes it difficult to detect significant patterns of relationships.
By contrast, the bivariate coefficients confirm gender differences for more serious offenses in Russia and Ukraine even though the gender gap there for violent offenses does not seem to be any greater than for property offenses. One possible explanation for the similarity of the gender gap for both property and violent offenses in the former Soviet republics could be the high overall level of criminality. Russians and Ukrainians of both genders are more accustomed to regular violence than are Westerners (Pridemore and Shkolnikov 2004; Tittle and Botchkovar 2005b), and females from these countries may be more likely than their Western counterparts to regard violence as an acceptable means of dealing with many problems, especially domestic situations. However, the multivariate analyses show that even in Russia and Ukraine the gender-crime relationship is not independent of the other correlates of crime. These results suggest a lack of robustness for gender and crime associations, but the effects of gender on crime/deviance may be indirect. Some possible mediators of those effects include religiosity and deviant peer associations as females may be more religious and have fewer associations with criminal/deviant peers.

In light of recent research affirming the import of marriage as a crime preventive in the United States (Sampson et al. 2006), our finding that marital status is one of the least reliable cross-cultural predictors of crime is especially surprising. According to our bivariate analyses, marital status significantly predicts involvement in crime/deviance only in Greece. And even more unreliability emerges from the multivariate analyses. Thus, marital benefits may be limited to more stable and socially organized environments like those in most Western nations and Greece. In transitional, unstable countries like Russia and Ukraine, the meaning of marriage may change along with other institutions. This finding also underscores the importance of identifying causal mechanisms through which marriage may affect involvement in crime/deviance and assessing their generality.

The bivariate analyses of religiosity and SES do not produce the same results as the multivariate analyses. In bivariable analysis religiosity is a consistent, cross-cultural predictor of crime/deviance, but in multivariate analysis it is not. Thus, one could easily conclude that religiosity and crime/deviance are not reliably related. However, religiosity may still influence crime, though in a complicated, indirect way. Perhaps highly religious people are led away from association with criminal peers, which helps produce greater conformity, thereby producing the negative bivariate association between religiosity and crime/deviance. Nevertheless, these findings do suggest that religiosity does not independently predict crime/deviance in a highly reliable manner.
Analyses concerning SES clearly challenge the commonly held idea that SES and crime/deviance are generally or necessarily negatively related. The bivariate analyses suggest that in two of the countries, SES and crime are generally positively related while the multivariate analyses suggest that SES and crime are simply not related at all. However, whether these results contradict extant literature about SES and crime depends on how the collected research is interpreted. If one thinks there is a persistent negative relationship (as scholars such as Braithwaite and Ellis do), then the current data demonstrate lack of consistency with the literature. On the other hand, if the collected literature is seen as showing a problematic relationship between SES and crime/deviance (as Tittle and Wright and their associates think), these data appear consistent with the literature.

It is especially interesting, however, that in Greece, the most Westernized country of our three, we find no association between SES and misconduct, while in Russia and Ukraine, the least Westernized, there are consistent bivariate positive relationships between SES and the dependent variables. While a positive relationship is theoretically foreseeable (see Tittle 1983, 2004), it is rarely documented. In this instance its documentation highlights potent potential cultural effects on the correlates of crime. Merton’s (1968) theory suggests that the highly anomie conditions presumably prevailing in the two former Soviet republics may be inspiring the employment of criminal means to a greater extent than in more stable Western societies. However, contrary to some interpretations of Merton’s ideas, it seems to be those of higher status rather than those of lower status who are actually more prone to criminal/deviant behavior in these circumstances. Perhaps this apparent anomaly is because of weaker moral restraint, greater exposure to criminal opportunities, or other conditions affecting higher status people that are unique to Russia and Ukraine. In any case, our results dovetail with other evidence suggesting that corruption and organized crime in Russia and Ukraine are rampant and mainly connected with abuses of power by individuals of higher statuses (Gilinskiy 2006; Kalman 2002; Transparency International 2007; Williams and Picarelli 2002).

In the multivariate analyses almost all of the significant positive bivariate correlations between SES and crime disappear. Perhaps in Russia and Ukraine it is those who have abandoned religious beliefs or have associated more readily with deviant peers who are most likely to have achieved higher SES. If so, the results of controlling for religiosity and deviant peer association may simply indicate that SES has an indirect positive association with criminal propensity. In any case, the relationship between SES and crime/
deviance in these data appears to be inconsistent across the different cultures and patterned unreliably.

Overall, then, there seem to be few basic relationships in predicting crime/deviance. On one hand, therefore, the theoretical task of accounting for known empirical patterns may seem simpler than previously thought. However, having only two reliable correlates of crime might mean that the job of theorists is actually more complicated than previously imagined. A scarcity of general predictors implies that explanation will have to be highly contingent, with some contingencies being linked to cultural elements. Theoretically explicating contingent effects and specifying how and why the causal processes and linkages of various theories operate under different cultural conditions may turn out to be a daunting task.

**Cautionary Notes**

Although our research broadens the spectrum of extant literature on correlates of crime/deviance, findings and interpretations must be considered in light of potentially problematic methodological issues. First, survey data may be suspect because of respondents’ fears of incrimination, and surveys also necessarily focus on less serious criminal/deviant acts. While it may be useful to supplement them with official police statistics, there are no analogs in official data for some of the correlates of crime/deviance. In addition, official data are themselves subject to much error and unreliability (Mosher, Miethe, and Phillips 2002) and international crime statistics may suffer from even more serious problems (Howard, Newman, and Pridemore 2000; Newman 1999). Yet it is possible that our cross-cultural findings about the reliability of certain patterns of crime/deviance might have been different if official data had been employed.

Next, we also cannot completely rule out some selection bias. Although we took extra steps to protect anonymity and our response rates were in line with those typical of household surveys elsewhere, given the rate of random replacement of households, it is possible that more criminally inclined individuals were more likely to refuse to participate in the survey. Furthermore, our investigation is limited by cross-sectionality of the data. Longitudinal data may help uncover more nuanced relationships between crime/deviance and its correlates. For example, preventive marriage effects, which are not found when married and unmarried individuals are contrasted, may be revealed in within-individual comparisons over time or when quality of marital relations is taken into consideration (Sampson and Laub 1993; Sampson et al. 2006).
Finally, the findings may be seen as artifacts of our measurement because there is little agreement about how to measure some of the variables, especially SES. Our scale of SES taps raw purchasing power, reflecting only income and wealth. Some might contend that if our measure of SES had included other elements, such as prestige, power, or severe economic disadvantage, we might have found the assumed negative relationship between SES and misconduct. While our data contain no indicators of prestige or power, we did experiment with a measure to recognize more severe economic disadvantage (by using only the items about affording bare necessities such as groceries, clothes, and medication). But, no differences in results were found. In addition, the fact that we used a measure of religiosity combining its several aspects may account for the results as much prior research has used simple measures—typically just church attendance (Baier and Wright 2001; Johnson et al. 2000). To check, we redid the analyses using only church attendance, which confirmed the observed patterns. Still, had we used even more inclusive measures of religiosity the results might have been more confirming.

Overall, then, our findings may be regarded as challenging to some conventional understandings, though far from definitive. They add to the literature on the assumed correlates of crime and raise some questions about the generality of patterns in individual propensities that need to be addressed further.

Conclusion

Building on the previous literature suggesting several more or less established empirical patterns of criminal/deviant behavior, we find that the correlates of crime/deviance derived from research in well-studied, mostly Western societies and using mainly juvenile samples are not necessarily valid among adults in three unusual contexts considered here. Our analyses of comparable survey data from Greece, Russia, and Ukraine confirm only two of six previously well-accepted correlates of self-reported criminal/deviant behavior. A strong positive cross-national relationship between deviant peer association and criminal behavior is upheld in bivariate and multivariate analyses while a generally reliable, though not totally invariant, negative relationship between age and criminal propensity is shown by both types of analysis. However, two other assumed correlates of criminal propensity—gender and marital status—are found to be somewhat unreliable and sensitive to the cultural contexts investigated. Religiosity proves to be a generally, though not totally, reliable negative predictor of criminality in bivariate analysis but not in multivariate analysis. Finally, in bivariate
analysis SES proves to be highly sensitive to cultural context, showing no relationship at all in Greece but generally positive relationships in Russia and Ukraine. However, in multivariate analysis SES is not significantly related in any consistent fashion to criminality in any of the three countries. These results help confirm what has been suggested by other cross-national research—that criminal behavior may be more complicated than is often thought, requiring more data from different contexts and calling for theories to more fully specify contingencies that might be culturally linked.

**Declaration of Conflicting Interests**

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**Notes**

1. Targeted households where respondents could not be interviewed were replaced randomly using an initial oversampling. In all three sites, the final sample is approximately 30 percent from originally targeted households and 70 percent random replacements, with a slightly greater percentage of random replacements in Greece. This level of random replacement is only slightly larger than in small-scale household surveys in the United States (see e.g., Latimore, Tittle, and Grasmick 2006) and roughly comparable to other survey characteristics elsewhere (Couper and Leeuw 2003; Vägerö et al. 2008).

2. In all instances where composite measures are employed, we experimented with several alternative ways of composition, but found that all measures produce similar overall results.

3. The scale has a coefficient of reproducibility of .98 (.90 or higher is required) and minimal marginal reproducibility of .85 with an improvement of .13 (.10 or higher is acceptable), and the coefficient of scalability for the scale is .89 (.60 or higher is acceptable).

4. Because two of our measures are dichotomies (gender and marital status), we also conducted part of the analysis with difference of means tests between the two categories. In addition, we alternatively conducted all multivariate analyses using negative binomial regression in which we preserved the original, though skewed, distributions of all dependent variables. Because the substantive results for all methods are similar, we report only the findings from the correlation tests and ordinary least squares (OLS) regression.
### Appendix Table 1. Comparison of Countries' and Samples' Characteristics

<table>
<thead>
<tr>
<th>Countries' Characteristics</th>
<th>Greece</th>
<th>Russia</th>
<th>Ukraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating of democracy (Freedom House 2007)</td>
<td>1.5</td>
<td>5.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Gross domestic product per capita in dollars (World Bank 2004)</td>
<td>23,500</td>
<td>12,100</td>
<td>7,600</td>
</tr>
<tr>
<td>Percentage population in poverty (Central Intelligence Agency 2007)</td>
<td>n/a</td>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td>Life expectancy (Central Intelligence Agency 2007)</td>
<td>79</td>
<td>66</td>
<td>68</td>
</tr>
<tr>
<td>Homicide rate (United Nations Office on Drugs and Crime 2006)</td>
<td>1.5</td>
<td>19</td>
<td>8.5</td>
</tr>
<tr>
<td>Corruption ranking (Transparency International 2007)</td>
<td>56</td>
<td>143</td>
<td>118</td>
</tr>
</tbody>
</table>

### Samples' characteristics

- Physically harming another person on purpose in the last five years (percent): Greece 61, Russia 4, Ukraine 2
- Using violence or the threat of violence to accomplish some personal goal in the last five years (percent): Greece 81, Russia 6, Ukraine 3
- Distorting the truth to get something they want (percent): Greece 43, Russia 52, Ukraine 65
- Admitting a minor property offense in the last five years (percent): Greece 91, Russia 5, Ukraine 3

### Appendix Table 2. Comparisons of Sample Characteristics with Figures for the Most Recent Census

<table>
<thead>
<tr>
<th>Variables</th>
<th>Greece Sample</th>
<th>Greece Census</th>
<th>Russia Sample</th>
<th>Russia Census</th>
<th>Ukraine Sample</th>
<th>Ukraine Census</th>
</tr>
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<tbody>
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<td>Gender</td>
<td></td>
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<tr>
<td>Percentage female</td>
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<td>47</td>
<td>54</td>
<td>55</td>
<td>62</td>
<td>53</td>
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<tr>
<td>Percentage 18 to 29</td>
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<td>20</td>
<td>24</td>
<td>24</td>
<td>24</td>
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<tr>
<td>Percentage 30 to 39</td>
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<td>20</td>
<td>20</td>
<td>17</td>
<td>20</td>
<td>21</td>
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<tr>
<td>Percentage 40 to 49</td>
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<td>18</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Percentage 50 to 59</td>
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<td>15</td>
<td>16</td>
<td>18</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Percentage 60+</td>
<td>18</td>
<td>27</td>
<td>25</td>
<td>22</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Percentage married</td>
<td>58</td>
<td>57</td>
<td>56</td>
<td>60</td>
<td>62</td>
<td>67</td>
</tr>
<tr>
<td>Percentage divorced/separated</td>
<td>3</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>3</td>
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<tr>
<td>Percentage widowed</td>
<td>8</td>
<td>9</td>
<td>18</td>
<td>14</td>
<td>8</td>
<td>11</td>
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<tr>
<td>Percentage single</td>
<td>32</td>
<td>28</td>
<td>15</td>
<td>16</td>
<td>22</td>
<td>19</td>
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</table>

*a. The census figures for Greece and Russia are for larger areas (the Greater Area of Athens and the Oblast of Nizhni Novgorod urban area), corresponding roughly to metropolitan demarcations.*
### Appendix Table 3. Survey Items Used for Constructing Composite Measures

| Past crime/deviance (five responses categories from never to very often) | (1) How often did you hit another person on purpose in an emotional outburst?  
(2) How often did you physically harm another person on purpose?  
(3) How often did you use violence or threat of violence to accomplish some personal goal?  
(4) How often did you take money or property from others worth less than $5 (in local currency)?  
(5) How often did you take money or property from others worth more than $5 but worth less than $50 (in local currency)?  
(6) How often did you take money or property from others worth more than $50 (in local currency)?  
(7) How often did you distort the truth to get something one wants? |
| Socioeconomic status | (1) Can you afford the groceries that you want?  
(2) Can you afford medications that you need?  
(3) Can you afford clothes that you need?  
(4) Can you renovate your apartment/house?  
(5) Can you travel abroad for leisure?  
(6) Can you afford to buy an apartment or house? |
| Religiosity | (1) How often do you attend religious services (five responses categories from never to very often)?  
(2) How often do you make financial sacrifices for religious purposes (response categories as above)?  
(3) How religious are you (five response categories from not religious at all to very religious)?  
(4) How religious were you five years ago (response categories as above)? |
<table>
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<th>4</th>
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<td>3. Socioeconomic status</td>
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<tr>
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<td>Russia</td>
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<td>4. Religiosity</td>
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<td>5. Peer Deviance Index (ln)</td>
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<td>.00</td>
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<td>Russia</td>
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<td>- .38#</td>
<td>.16*</td>
<td>- .05</td>
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<td>Ukraine</td>
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<td>- .33#</td>
<td>.27*</td>
<td>- .25#</td>
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<td>- .03</td>
<td>- .02</td>
<td>.09</td>
<td>.78*</td>
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<td>- .08</td>
<td>.74*</td>
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<td>- .33*</td>
<td>.17*</td>
<td>- .28*</td>
<td>.74*</td>
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<td>.17*</td>
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<td>.78*</td>
<td>.51*</td>
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<td>.80*</td>
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<td>.77*</td>
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<td>9. Marital status</td>
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<td>.39#</td>
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*p < .05, (two-tailed test)

References


Bios

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