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Psychological patterns of poverty in Russia: Relationships among socioeconomic conditions, motivation, self-regulation and well-being

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This article aims to extend our understanding of the link between socioeconomic conditions and psychological variables. It focuses on the effects of five distinct socioeconomic indicators on a range of psychological variables in samples of 162 individuals living below the poverty line and 188 of their more well-off counterparts in Russia. Participants completed a questionnaire containing measures of socioeconomic indicators (i.e., income, education, perceived deprivation, subjective socioeconomic status, and childhood socioeconomic status) and psychological variables representing self-regulation, motivation, and well-being. Our main findings include: (a) significant effects of socioeconomic status on all psychological variables, which are in line with other studies seeking to answer similar questions, (b) varying importance of different socioeconomic indicators for different psychological variables, and (c) centrality of all socioeconomic indicators except childhood socioeconomic status, and of values of openness to change and self-transcendence, satisfaction with life and self-esteem in the network of relationships between socioeconomic indicators and psychological variables

Keywords: Socioeconomic conditions; Values; Self-regulation; Motivation; Well-being; Poverty; Network analysis; Russia.

Scholars from different disciplines have consistently linked socioeconomic conditions with a range of psychological and behavioural phenomena. A large body of sociological literature describes relationships between socioeconomic factors on the one hand, and educational expectations and occupational aspirations (Sewell & Hauser, 1972), feelings of control, personal mastery and fatalism (Billings, 1974), or values of self-direction and conformity (Kohn & Schooler, 1969) on the other. More recently, psychological studies have described effects of income poverty (e.g., Hackman et al., 2010; Noble et al., 2005; Rosen et al., 2019) and scarcity mindset (Mani et al., 2013) on cognitive functioning, of subjective socioeconomic status (SES) on prosocial behaviour (e.g., Piff et al., 2012), and of childhood SES on the propensity to take risks and impulsiveness under the conditions of adversity (Griskevicius et al., 2011). Although this body of research provides valuable insights into how one's

socioeconomic conditions and psychological variables might be related, it has rarely (i) differentiated between the effects of different socioeconomic indicators, or (ii) extended findings to geographical, social and cultural contexts that are less often the focus of psychological research. We believe both issues are important for our understanding of psychological patterns of poverty.

Operationalising socioeconomic conditions through objective parameters has a long tradition in social research, with the vast majority of studies in sociology, education and developmental psychology using income, educational levels and occupation as indicators of SES. However, findings from social-psychological research underscore the importance of individuals' subjective perceptions of their deprivation and position vis-à-vis other members of society as additional important indicators (for example, see Piff et al., 2012). For instance, Adler et al. (2000) found that individuals' subjective

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SES predicted their self-rated health, sleep latency and habituation to repeated stress even when objective SES was controlled for. A lack of differentiation between different socioeconomic indicators might limit our understanding of the mechanisms explaining the link between socioeconomic conditions and psychological variables.

The social and cultural context in which the study is set is important because individual experiences associated with socioeconomic conditions are interwoven with the social structure of the society people live in. For example, economic systems, the extent of a welfare state, country-level poverty, economic inequality, rate of social mobility, or general attitudes to and perceptions of working class and the poor might affect how economic disadvantage and belongingness to certain social strata are experienced at the individual level. Thus, any generalisations about the effects of socioeconomic conditions on psychological variables across contexts that differ on the aforementioned characteristics are a matter of empirical scrutiny.

In the present study, we attempted to extend our understanding of the link between socioeconomic and psychological variables by differentiating between a range of both objective and subjective indicators, and setting our research in a relatively understudied context, namely Russia. We explore the structure of relationships between objective (income, education) and subjective socioeconomic indicators (subjective SES, perceived deprivation, childhood SES) and a range of psychological variables representing motivation (individual values and dispositional greed), self-regulation (self-control, self-efficacy, and risky behaviours), and well-being (self-esteem, trust, satisfaction with life and health status) on a socially and economically diverse sample of Moscow citizens. In the remainder of this introduction, we explain the choice of the context and briefly review the research on the effects of socioeconomic conditions on psychological variables. This provides the rationale for the selection of the psychological variables for this study.

THE IMPORTANCE OF CONTEXT

Most research on the link between socioeconomic conditions and psychological variables comes from North America and Western Europe. For generalisation of these effects, we believe that Russia represents an interesting, and unique case due to its relatively recent transition from socialism to capitalism and the host of social changes associated with this transition. It is likely that these changes were also accompanied by a shift in the perceptions of poverty and low SES, in particular beliefs about the causes of poverty. Traditionally, poverty and economic disadvantage were largely viewed by the Russians as a result of external reasons, as is reflected in a number of old Russian sayings and proverbs (e.g., The

poorer, the more generous; Poverty is not a sin, it is just bad luck; Gorshkov & Tikhonova, 2006). However, research has shown that the 2000s brought a new, more "neoliberal," perspective on poverty, with the poor more often being blamed for their own misfortune (Mareeva & Tikhonova, 2016; Sätre, 2014; Varyzgina & Kay, 2014) and poverty itself being pathologized and stigmatised. It is likely that this shift in attitudes has shaped the individual experiences of people with lower socioeconomic conditions too. It is thus interesting to establish whether the relationships between socioeconomic conditions and psychological variables found on the United States and United Kingdom samples would also be identified in the Russian context. Investigating the relationship between socioeconomic conditions and psychological variables in the Russian context would also provide insights into what this association might be like in similar contexts, for instance, countries from Eastern Europe or Asia that went through a similar transition.

PSYCHOLOGICAL VARIABLES AND EXPECTATIONS

Past research on the effects of socioeconomic conditions and poverty focused on a variety of psychological variables, ranging from individual values (Kohn & Schooler, 1969) to negative affect (Haushofer & Fehr, 2014), generally suggesting that living in poverty and/or belonging to low social class have an all-encompassing effect on psychological functioning. When selecting the psychological variables for our study, we aimed to connect with previous research on the relationship between socioeconomic conditions and psychological functioning. Thus, we aimed to represent psychological variables with three domains: motivation, self-regulation and well-being. Motivation was represented by individual values (openness to change, self-transcendence, conservation and self-enhancement) and dispositional greed. Self-regulation was represented by self-control, self-efficacy and risky behaviours. Finally, well-being was represented by self-esteem, trust, satisfaction with life and self-rated health. Below, we outline our expectations regarding the relationships between socioeconomic conditions and these variables.

Motivation

Based on the research that centred around the relationship between social class and values (Kohn & Schooler, 1969), which demonstrated that higher social status might contribute to individuals adopting values of self-direction, and lower social status to values of conformity, we expected that people with higher SES would score higher on the values of openness and self-transcendence, and lower on conservation. Sociological status attainment models (Haller & Portes, 1973; Sewell & Hauser, 1972) suggest that parents with higher levels of SES are likely to transmit their higher educational expectations and occupational aspirations to their children. As values of self-enhancement include motives of achievement and power, it may thus be expected that there would be a positive association between SES and self-enhancement values. Finally, based on Inglehart's (2009) theory of country-level value change (Inglehart, 2009) suggesting that individuals in poorer countries have more materialistic needs and values, we predicted that individuals with higher levels of SES would score lower on greed.

Self-regulation

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A large body of research on the link between SES and academic attainment suggests that those with lower SES are likely to have fewer successful mastery experiences—one of the key antecedents of self-efficacy beliefs (Bandura, 1977). For example, it has been shown that lower SES individuals systematically underperform at school (Hair et al., 2015) and generally have lower levels of attainment (Duncan et al., 2010). These negative experiences might make them develop lower self-efficacy compared to their more well-off counterparts. Furthermore, people with lower SES might internalise the negative attitudes and attributions for poverty (e.g., the view of the poor as incapable and responsible for their unfortunate situation), which, according to some accounts (Jones, 2011) are still prevalent in some societies. Based on this, we expected that higher SES would be associated with higher levels of self-efficacy.

In an attempt to explain the relationship between economic disadvantage and impaired decision-making, research in behavioural economics has repeatedly linked the experiences of poverty with diminished cognitive resources and subsequent lower self-control (Adamkovič & Martončik, 2017; Bernheim et al., 2015; Spears, 2011). This change in self-control levels also sheds light on the relationship between poverty and risk behaviour that was documented in the previous research (e.g., Bolland et al., 2007) Thus, we expected that SES is positively associated with self-control and more risk-taking behaviours.

Well-being

Poverty and low SES are associated with social exclusion, isolation and alienation (e.g., Gallie et al., 2003). These factors are likely to contribute to the development of low self-esteem. In addition, studies have linked the experiences of poverty and economic disadvantage with feelings of shame (e.g., Chase & Walker, 2013). Such negative stereotypes and attitudes toward the poor among the members of society might add to the shame of poverty (Walker & Chase, 2014) and thus contribute to the

general lower self-esteem of those who belong to lower social strata.

Although some literature on life satisfaction suggests that individuals tend to habituate to their social status and income levels (Di Tella & MacCulloch, 2008), past research has generally concluded that higher economic disadvantage is associated with lower levels of satisfaction with life (Kahneman & Deaton, 2010). Based on these findings, together with the findings from research linking economic disadvantage with the feelings of helplessness, powerlessness and insecurity (Haushofer & Fehr, 2014; Kane, 1987; Lever et al., 2005), we expected that individuals with higher SES would score higher on the satisfaction with life scale. Furthermore, following the extensive literature on the effects of poverty and SES on health outcomes (e.g., Adler et al., 1993), we expected to find a positive relationship between SES and self-rated health.

Finally, following the argument that people with higher SES are likely to be more trustful because they have more resources to tolerate the risks of trust as outlined by Hamamura (2012), we expected to find a positive relationship between SES and trust. Research by Brandt et al. (2015), in which they found that increases in income predict increases in social trust levels, also supports this prediction.

To account for the complexity of socioeconomic conditions and to be able to differentiate between the effects of various socioeconomic indicators in the analyses, we included both objective (income and education) and subjective indicators (perceived deprivation, subjective SES), as well as the participants' self-reported SES in child-hood. While we anticipated that the effects of different socioeconomic variables might not be uniform, we did not have specific predictions regarding the individual effects of each indicator on psychological variables. Therefore, this part of the study is exploratory. By including different indicators, we attempted to answer the question of which socioeconomic variables are responsible for the effects of socioeconomic background on different psychological variables.

METHOD

Sampling and participants

One of the main aims of our study was to test the effects of different socioeconomic indicators—income, education, childhood socioeconomic status, subjective SES and perceived deprivation—on a variety of psychological variables. To achieve that, we needed to ensure that our sample is sufficiently diverse in their socioeconomic backgrounds. Thus, we sampled participants from different groups of the population.

First, we sampled a group of people living in absolute deprivation (N = 162; 39.5% females; $M_{age} = 41.28$

[range: 18-65], SD = 11.42), whose incomes were lower than the subsistence minimum, which was equal to 7500 rubles per month (around \$120), at the time of data collection (2015). Most participants from this sample (64.2%) reported monthly incomes between 2500 rubles (\$40) and 7500 rubles (\$121). We used a snowball technique to recruit the subsample living in poverty. The data from this subsample were collected during the daily charity lunches for those facing a difficult economic situation. Those who agreed and participated in our study helped us recruit other participants from among their acquaintances. We did not reveal to the participants that we were specifically interested in the effects of SES and invited them to participate in a study about attitudes and well-being. Upon giving consent, participants filled out the questionnaire in the presence of one of the researchers (first and second author). The participants were compensated by an award of 200 rubles (about \$3.25).

Second, we sampled from a group of citizens whose incomes were higher than the subsistence minimum $(N = 188; 58.5\% \text{ females}; M_{\text{age}} = 34.10 \text{ [range: } 18-65\text{]},$ SD = 13.56). Most participants from this subsample (64.3%) earned between 25,000 rubles (\$403.2) and 60,000 rubles (\$967.7). The participants were recruited by means of convenience sampling. This subsample was recruited through researchers' personal networks and was not incentivised. However, part of this subsample was students of the Higher School of Economics. They participated in the study as an exchange for a course credit. Including a subsample of students, we attempted to represent the sample with those who are well educated and attuned to intellectual issues but are likely experiencing higher levels of deprivation (e.g., have to think about how much they spend, not being able to afford things they might want, etc.). This subsample, however, was not that large—students represented 18.2% of the non-poor sample.

The summary of the sociodemographic information for the poor and non-poor subsamples is presented in Table A1. As seen from the samples socio-demographic description, there were large differences in age and gender. The sample of people living in deprivation was older (39 years old versus 34 in the non-deprived sample) and included more male participants (60.5% of male participants versus 41.5% in non-deprived sample). These differences were controlled for in the analysis.

Given that we used our private networks and a snowball sampling, there was a risk that our sampling strategy might have resulted in an unwanted bias in the sample in which highly educated people, who are often more attuned to intellectual issues, were overrepresented. Indeed, the share of people with a university degree among the non-poor participants was significantly higher. However, we believe that the gap in educational attainment between the two groups reflects a standard difference in attainment among those with higher and lower socioeconomic backgrounds. Speaking about how well our sample represented educational levels of Russians in general, the share of university-educated people in our sample was not higher than the Russian average—62.3% in our sample as opposed to 63% among 25–34 years olds in the Russian Federation according to a recent OECD report (OECD, 2019). In addition, very few of our participants earned a doctoral degree (3.2%) or worked as researchers (2.1%). This means that our sample was not particularly unusual in terms of their education compared to the Russian population.

As far as other aspects of social status in the non-poor group are concerned, the share of those employed in working-class jobs was not lower than the share of highly skilled professionals—35.6% and 33.5%, respectively. Speaking about the income, the largest group (34%) among the non-poor reported that their incomes fall in the category between 40,000 and 60,000 roubles, which was the average salary in Moscow in 2014–2015 when the data were collected (The Russian Federal State Statistics Service, 2015). This also suggests that the non-poor sample was not skewed towards the higher-earning population.

Although we assumed that income would be associated with other socioeconomic indicators, we expected the participants from the poor and non-poor groups to vary in their levels of deprivation, subjective SES and childhood SES, and to some extent—in education. The relationships between different socioeconomic indicators are presented in Table A2. Indeed, they are significant, but not extremely strong, which suggests that the participants within each group varied in their levels of other socioeconomic indicators. The fact that among the participants living in poverty there was a good share of those who did go to college (24.1%) is an additional evidence for that. The relationship between indicators representing current socioeconomic conditions and childhood SES are significant but rather weak. This confirmed the results of the research by Bessudnov (2016), who has found that the rate of social mobility in Russia is comparable to that of Western European countries. Parents' SES is usually a significant predictor of SES of their children, however, there is still a significant proportion of those who change their status.

Speaking about other factors that might be considered sources of bias, the two subsamples were not different in migrant status (all of them were born and raised in Russia), ethnicity (the participants from both subsamples predominantly identified with the Russian ethnic group), and religious identity (most identified as Russian Orthodox). The levels of religiosity, which could confound the results, were also not different between the two subsamples. The subsamples differed in age and gender, however, we controlled for these factors in the analysis making sure that they do not bias the results.

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The article was prepared within the framework of the Basic Research Program at HSE University, RF. All procedures performed in the study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments. Informed consent was obtained from all participants included in the study. The authors declare that they have no conflict of interest.

Measures

Psychological variables

Individual values. We used 14 items representing values of Openness to Change (Cronbach's $\alpha=0.61$), Self-Transcendence (Cronbach's $\alpha=0.65$), Conservation (Cronbach's $\alpha=0.52$) and Self-Enhancement (Cronbach's $\alpha=0.55$) from the Portrait Value Questionnaire (PVQ-R; original version: Schwartz, 2012; Russian adaptation: Schwartz & Butenko, 2014). The participants indicated the extent to which they felt similar to each of 14 descriptions of people on a scale from 1 (Not at all like me) to 5 (Very much like me).

Risky behaviours. To assess risky behaviours, we used a five-item Health/Safety subscale from the Domain-Specific Risk Attitudes Scale (Weber et al., 2002). The participants indicated the frequency of engaging with five behaviours (e.g., taking medicine without a prescription) on a scale from 1 (never) to 5 (very often). Cronbach's $\alpha = 0.77$.

Self-esteem. To assess self-esteem, we used the Rosenberg Self-Esteem Scale (RSES; original version: Rosenberg, 1965; Russian adaptation). Sample item: "I feel I do not have much to be proud of" (rated from 1 = "Strongly disagree to 4 = "Strongly agree"). Cronbach's $\alpha = 0.88$.

Self-efficacy. We used the Generalised Self-Efficacy Scale (GSE; original version: Schwarzer & Jerusalem, 1995; Russian adaptation: Schwarzer, Jerusalem, & Romek, 1996). Sample item: "If someone opposes me, I can find means and ways to get what I want" (rated from 1 = "Strongly disagree" to 4 = "Strongly agree"). Cronbach's $\alpha = 0.85$.

Self-control. We used the short 10-item version of the Self-Scoring Self-Control Scale (SSCS; Tangney, Baumeister, & Boone, 2004) to assess self-control. Sample item: "I have a hard time breaking bad habits" (rated from 1 = "Strongly disagree" to 4 = "Strongly agree"). Cronbach's $\alpha = 0.85$.

Dispositional greed. We used the Dispositional Greed Scale (Seuntjens et al., 2015). Sample item: "One can

never have too much money" (rated from 1 = "Strongly disagree" to 5 = "Strongly agree"). Cronbach's $\alpha = 0.87$.

Satisfaction with life. To measure life satisfaction, we used the Satisfaction with Life Scale (SWLS; original version: Diener et al., 1985). Sample item: "The conditions of my life are excellent" (rated from 1 = "Strongly disagree" to 7 = "Strongly agree"). Cronbach's $\alpha = 0.87$.

Trust. We used the General Trust Scale (Yamagishi & Yamagishi, 1994) to measure trust. Sample item: "Most people are basically honest" (rated from 1 = "Strongly disagree" to 5 = "Strongly agree"). Cronbach's $\alpha = 0.76$.

Health status. We used a question from the questionnaire of the European Social Survey (Round 7, 2014/15): "How is your health in general?" The response was given on a scale from 1 (very bad) to 5 (very good).

Socioeconomic indicators

Deprivation. The participants indicated how often within the last 12 months they had to limit or forego each of the nine activities (ranging from purchasing food to going on a vacation) because they could not afford it. The response was given on a scale from 1 = "Never" to 5 = "Very often." Cronbach's $\alpha = 0.91$.

Childhood SES. We used a three-item measure by Griskevicius et al. (2011). Sample item: "My family usually had enough money when I was growing up" (rated from 1 = "Strongly disagree" to 5 = "Strongly agree"). Cronbach's $\alpha = 0.83$.

Subjective SES. We used the MacArthur Subjective Social Status Scale (Goodman et al., 2001). The respondents ranked their perceived socioeconomic position compared to other members of the society on a ladder, with 1 representing the lowest position, and 10 the highest position.

Education. Participants indicated their highest level of completed education choosing one of the following options (1 = "No formal education," 2 = "Incomplete primary education," 3 = "Complete primary education," 4 = "Incomplete secondary education," 5 = "Complete secondary education," 6 = "Secondary specialized education," 7 = "Incomplete higher education," 8 = "Doctoral degree").

Income. We used a single-choice question: "What was your income from all sources in the last month?" (1 = less than 2500 rubles; 2 = 2500-7500 rubles; 3 = 7501-15,000 rubles; 4 = 15,001-25,000 rubles;

5 = 25,001-40,000 rubles; 6 = 40,001-60,000 rubles; 7 = 60,001-80,000 rubles; 8 = 80,001-100,000 rubles; 9 = more than 100,000 rubles).

Sociodemographic characteristics. The participants indicated their age, gender, place of residence and ethnicity in an open-ended format.

Instrument adaptation

An additional challenge for psychological research with people living in poverty is that measures need to be taken to avoid unwanted distortions due to bias, such as method or item bias (see Van de Vijver & Leung, 1997). Such biases could easily emerge as a consequence of response format of the scales, the question content or wording being less familiar to the poor group compared to the non-poor group. Thus, when studying naturally occurring poverty, it is important to ensure that the psychological measures can be validly applied with the poor samples, which do not feature often in the development and validation of such measures.

To minimise the potential bias and increase the validity of our results, we adapted the instruments prior to our study by means of cognitive interviews with 10 people from the target population living in poverty. We found that, although most items were understood and interpreted as intended, respondents tended to be rather socially desirable and had trouble with the phrasing of a number of items finding them too abstract and vague. To address these issues, we elaborated on item instructions and changed the wording of items where necessary. Although this procedure does not fully rule out the possibility of method or item bias, it did bolster our confidence in that the instruments tapped into the same constructs for all participants.

Analytical strategy

At the preliminary stage, we ran descriptive analyses estimating means and standard deviations of the psychological variables on a total sample, and on the samples of participants coming from the poor and non-poor samples. These descriptive data can be found in Table A3. Seven participants were excluded from the analyses because of incomplete data on psychological measures.

To estimate the effects of socioeconomic conditions on psychological variables, we fitted a series of linear multiple regression models with psychological variables as dependent variables. All socioeconomic factors (income, deprivation, subjective SES, childhood SES and education) were entered as predictors together at one step (multicollinearity was not an issue). We could thus see the individual effect of each of the socioeconomic variables

when all others were controlled for. Since our poor and non-poor sampled significantly differed in age, we used age as a control variable in all models.

Furthermore, to extend our findings and increase their robustness, we analysed the relationships between socioeconomic indicators and psychological variables using network psychometrics (Borsboom & Cramer, 2013; Costantini et al., 2015), which has proven to be successful in the study of psychopathology and attitudes. It addition to presenting the relationships among socioeconomic and psychological variables, network analysis also provides the assessment of centrality of each of these variables to the network and thus allows to conclude which indicators are more central in the network of relationships between socioeconomic background and psychological variables.

RESULTS

Multiple regression analyses

Multiple regression analyses showed that socioeconomic factors had significant effects on all psychological variables included in our study (Table 1), largely confirming our expectations. It is important to note, however, that although the models predicting psychological variables with socioeconomic indicators were all significant, different socioeconomic indicators seemed to be more or less central across different models. For instance, while education was a stronger predictor of values of openness, self-transcendence, and self-efficacy, it was not a significant predictor of other psychological variables. At the same time, while subjective SES was a stronger predictor of values of conservation, and of self-control, self-esteem and satisfaction with life, it did not predict other psychological variables. In addition, some indicators that we expected to predict psychological variables in the same direction, in fact, worked differently. For example, deprivation and childhood SES predicted greed and self-enhancement values in different directions. These findings illustrate specificity of the effects of socioeconomic conditions and underline the importance of differentiating between different socioeconomic indicators when speaking about their effects on psychological variables.

Network analysis

We used the qgraph package in R (Epskamp et al., 2012); to estimate a network of the relations among socioeconomic and psychological variables, using a LASSO regularisation. This procedure estimates a partial correlation matrix, regressing each variable on all other variables in the model. The LASSO regularisation is applied to deal with statistical problems arising

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 TABLE 1

 Linear regression analyses predicting psychological variables with socioeconomic indicators

	t	p	β	F	df	p	$Adj.R^2$
Openness to change							
Overall model				14.07	6,343	< .001	.18
Income	2.11	.04	.16				
Education (university degree)	3.09	.01	.44				
Deprivation	0.25	.80	.02				
SSES	1.84	.07	.13				
Childhood SES	0.91	.36	.05				
Self-transcendence							
Overall model				6.94	6,342	< .001	.09
Income	1.42	.16	.12				
Education (university degree)	3.35	<.001	.51				
Deprivation	0.67	.50	.05				
SSES	0.94	.35	.07				
Childhood SES	-0.13	.89	01				
Conservation							
Overall model				10.01	6,343	< .001	.13
Income	1.24	.22	.10				
Education (university degree)	1.44	.15	.21				
Deprivation	1.85	.07	.14				
SSES	-2.20	.03	17				
Childhood SES	0.54	.59	.03				
Self-enhancement							
Overall model				4.82	6,343	< .001	.06
Income	1.64	.10	.13				
Education (university degree)	1.12	.26	.17				
Deprivation	3.07	.002	.24				
SSES	0.84	.40	.07				
Childhood SES	2.96	.003	.16				
Greed							
Overall model				7.00	6,343	< .001	.09
Income	2.01	.05	.16				
Education (university degree)	0.14	.89	.02				
Deprivation	4.56	<.001	.34				
SSES	-0.95	.35	07				
Childhood SES	2.48	.01	.13				
Risky behaviours							
Overall model				18.16	6,343	< .001	.23
Income	-1.54	.13	11				
Education (university degree)	-1.88	.06	26				
Deprivation	3.84	<.001	.27				
SSES	-1.07	.28	08				
Childhood SES	0.92	.36	.04				
Self-control							
Overall model				13.78	6,343	< .001	.18
Income	-1.75	.08	13				
Education (university degree)	1.52	.13	.22				
Deprivation	-4.22	<.001	30				
SSES	3.02	.003	.22				
Childhood SES	-0.66	.51	03				
Self-esteem							
Overall model				25.67	6,343	< .001	.30
Income	3.12	.002	.22				
Education (university degree)	-0.39	.70	05				
Deprivation	-2.26	.03	15				
SSES	4.35	<.001	.29				
Childhood SES	0.49	.62	.02				

(continued)

TABLE 1
Continued

	t	p	β	F	df	p	$Adj.R^2$
Self-efficacy							
Overall model				4.37	6,343	< .001	.05
Income	2,21	.03	.18				
Education (university degree)	1.98	.02	.31				
Deprivation	1.18	.24	.09				
SSES	1.12	.26	.09				
Childhood SES	3.13	.002	.17				
TRUST							
Overall model				4.94	6,343	< .001	.06
Income	-0.01	.99	01				
Education (university degree)	0.84	.40	.09				
Deprivation	-0.92	.36	07				
SSES	1.92	.06	.15				
Childhood SES	2.31	.02	.12				
Satisfaction with life							
Overall model				44.1	6,343	< .001	.43
Income	-0.36	.72	02				
Education (university degree)	0.08	.94	.01				
Deprivation	-3.20	.002	19				
SSES	7.07	< .001	.43				
Childhood SES	4.05	< .001	.17				
Health							
Overall model				17.0	6343	< .001	.22
Income	1.30	.20	.10				
Education (university degree)	0.83	.41	.12				
Deprivation	-3.41	< .001	24				
SSES	1.68	.09	.12				
Childhood SES	0.59	.56	.03				

Note: Since the poor and non-poor samples differed in age, we used age as a control variable entered at the first step in all models. Multicollinearity analysis did not reveal the presence of multicollinearity. SES = socioeconomic status; SSES = subjective SES. SES = socioeconomic status; SSES = subjective SES.

Values in bold represent statistically significant (p <.05) results.

from regressing large numbers of variables, effectively suppressing small coefficients. The ensuing network represents how strongly measures are related to one another when controlling for relations with all other measures. A depiction of the network can be seen in Figure 1. Measures are represented as circles ("nodes") and the unique relations among measures as lines ("edges"). Thicker lines represent stronger relationships; blue lines represent positive relationships, red negative relationships.

Overall, the network analysis reproduced the structure of the relationships between socioeconomic indicators and psychological variables. Moreover, it revealed that four of the five socioeconomic indicators display quite strong relationships among each other, childhood SES being the exception with no direct relationship with the other measures. Socioeconomic indicators have the strongest, direct relationships with psychological variables representing well-being, both physical, in terms of health, and psychological, in terms of life-satisfaction and self-esteem.

The network analysis also provides three indicators of centrality, of the extent to which nodes, in our analysis measures, are central to the network or rather peripheral. These indicators are strength (the sum of the absolute edges connected to each measure), closeness (representing how quickly one can get from the measure to the other measures in the network; more specifically, the inverse sum of the distance between the node and all other nodes), and betweenness (the number of shortest paths between two other nodes that pass through a node). Z-scores of each of these indicators for all measures are displayed in Figure 2.

Of the five socioeconomic indicators, childhood SES scores quite low on all three centrality indicators, suggesting that this measure is least well connected to all other measures. The other four socioeconomic indicators show high scores on all centrality measures, suggesting that they are quite central to the network. Thus, socioeconomic variables are strongly related to one another and to psychological variables. Of the psychological variables, values of openness and self-transcendence appear to be most central to the network, together with life satisfaction and self-esteem.

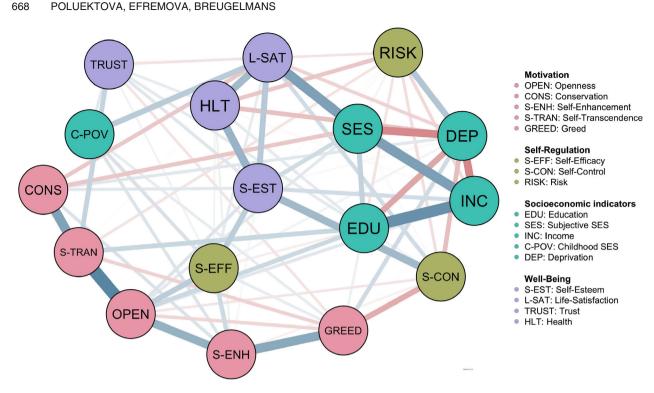


Figure 1. A network of socioeconomic indicators and psychological variables.

DISCUSSION

We started our research on the basis of the observation that our understanding of the relationship between socioeconomic conditions and psychological variables may be limited because researchers rarely differentiate between different socioeconomic indicators and rarely extended their research to social and cultural contexts beyond Western countries in general and the United States and the United Kingdom in specific. In the study, we presented and differentiated between a range of both objective and subjective socioeconomic indicators in a new social context, namely Russia. We explored the structure of relationships between objective and subjective socioeconomic indicators and a range of psychological variables representing motivation, self-regulation and well-being in a socially and economically diverse sample of Moscow citizens. In line with the existing research, we expected to find significant effects of socioeconomic conditions on the psychological variables, and we were particularly interested to know whether a variety of socioeconomic indicators work similarly or differently predicting a range of psychological variables.

The results revealed significant effects of socioeconomic indicators on all psychological variables. These results were largely consistent with the existing literature on the link between socioeconomic conditions and psychological variables, which reports negative effects of low SES and economic disadvantage. Interestingly, different socioeconomic indicators were more or less important for

different psychological variables. This suggests that the relationship between socioeconomic conditions and psychological variables is not uniform across different indicators. Below, we discuss this aspect of our findings in more detail.

Income was not the most important of all socioeconomic indicators. Its effects were rather small and only significant on the values of openness to change, self-esteem and self-efficacy. This is not surprising. While numerous studies have recorded significant effects of income poverty on wellbeing and other psychological characteristics (Elgar et al., 2021; Hanandita & Tampubolon, 2014; Jachimowicz et al., 2022), including natural experiments that documented that income cash transfers have positive effect on psychological outcomes (e.g., Zimmerman et al., 2021), it is likely that the effect of income is rarely direct. For instance, studies have shown that the effect of income is mediated by negative life events and level of social support (e.g., Chang et al., 2020).

Education was a significant predictor of openness and self-transcendence values, demonstrating quite large effects. This confirms that it is an important factor in the development of individual values. This pattern was also expected: both values represent more "liberal" orientations that have often been linked with higher levels of education (Schoon et al., 2010; Surridge, 2016). It is also in line with the findings of the research by Kohn and Schooler (1969), who found that those who are employed in more managerial roles are more likely

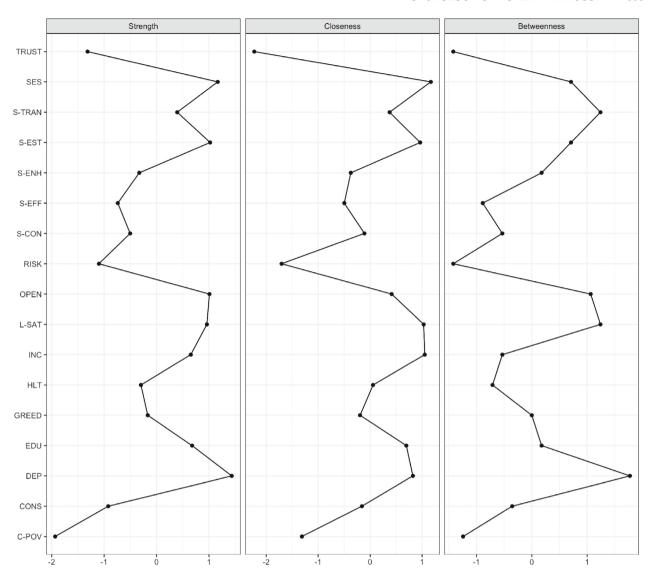


Figure 2. Centrality (strength, betweenness, closeness) of socioeconomic indicators and psychological variables in the network.

to be more open. Since higher education greatly increases one's chances to be in a managerial job, the positive relationship between education and values of openness also makes sense. The non-significance of the direct effect of education on conservation values is surprising, but could perhaps be explained by the fact that general levels of respect for tradition and authority have been on the rise in Russia in recent years, which may have weakened the link with education. However, this would need further research to be confirmed. Education was positively associated with self-efficacy levels. This is in line with theory and research on self-efficacy, according to which mastery experiences act as the strongest source of self-efficacy (Bandura, 1977). Educational contexts can provide such experiences leading higher levels of education to result in higher levels of self-efficacy.

Deprivation seems to be the most important of all socioeconomic indicators, as it was a significant predictor

of a range of psychological variables. Higher deprivation was associated with higher levels of self-enhancement values and greed, and higher frequency of engagement in risky behaviours. In addition, higher levels of deprivation were associated with lower levels of self-control, self-esteem, satisfaction with life and health status. In our study, deprivation reflected one's assessments of how often people had to limit or forego certain types of necessities or activities due to the lack of money. In a way, these perceptions are similar to the sense of scarcity as described by Mullainathan & Shafir (2012), who suggested that scarcity is responsible for the lower levels of self-regulation among the poor. Thus, our findings on the relationship between deprivation and self-control and risky behaviours are in line with that research.

Subjective SES was a significant predictor of all variables representing well-bring, as well as self-control and conservation values. Subjective SES assessments are

likely formed in the process of social comparison with other members of society (Piff et al., 2012). This comparison may lead individuals to have higher or lower self-esteem or be more or less satisfied with themselves and their lives, depending on how well others around them are doing. Given that Moscow, where the data were collected, is a context with a relatively high inequality and heterogeneity, this comparison might have been particularly salient. Thus, our findings on the positive

relationship between subjective SES, self-esteem, and sat-

isfaction with life make sense. As for the effects of sub-

jective SES on self-control and conservation values, we

do not have a straightforward explanation.

Childhood SES positively predicted levels of self-enhancement values, greed, self-efficacy, trust and satisfaction with life. The psychological foundations of self-efficacy and trust develop relatively early on in life, so growing up in a more well-off family likely provides more positive environments to develop a positive senses of efficacy and trust. The positive effect on greed and self-enhancement values is in line with status attainment models (Haller & Portes, 1973), which suggest that one's aspirations and expectations (e.g., regarding future attainment) are shaped early on and rooted in family socioeconomic background. The positive effect of childhood SES on satisfaction with life can possibly be explained by the fact that more positive environments in early-life generally ensure that children develop necessary socio-emotional skills that allow them to cope with challenges in the future. Research on the effects of childhood poverty effects on emotion regulation in adult life (Kim et al., 2013) supports this proposition. It is, however, important to notice that the effects of childhood SES were rather small, suggesting that it does not play a very important role in the mentioned psychological variables.

Network analysis largely confirmed the results of regression analyses and displayed a strong association among all socioeconomic indicators, except for childhood SES. In addition, the pattern of relationships between different socioeconomic indicators on the one hand and psychological variables on the other seemed to be more uniform across the dimensions of income, education, deprivation and subjective SES, but not childhood SES, which appeared to act in a very distinct way. The four related socioeconomic indicators were also more central to the network, which may in part be due to their strong interrelations. The most central psychological variables were values of openness, self-transcendence, life satisfaction and self-esteem, which is in line with theory and previous research.

Speaking about the context, most of our findings seem to be in line with the findings from research on the link between SES and psychological variables set in Western countries. This might indicate that the effects

of SES show a fair degree of generalizability. However, our data does not allow for too strong conclusions about generalizability, given that we only included data from a single non-Western context. We believe that it would be very worthwhile extending these findings to other, non-Western contexts and socioeconomic systems.

Despite the innovations of setting our study in a different context and including a variety of indicators representing SES, our study is not without limitations. First is that our data is cross-sectional, which makes it impossible to claim causality in the relationship between SES and psychological variables. It does not necessarily mean that the relationships between our variables are spurious; for instance, studies on the World Values data have shown both intergenerational and intragenerational effects of wealth on values (Inglehart & Baker, 2000). It does mean, however, that any interpretations in terms of causality should be made with caution.

A second limitation is that, because of practical limitations, we could only measure a limited range of psychological variables. For example, we have not been able to include measures of risk attitudes that have been associated with childhood SES (Griskevicius et al., 2011), of cognitive capacity that have been associated with scarcity (Mani et al., 2013), or of prosocial behaviours that have been associated with subjective SES (Piff et al., 2012). The inclusion of such measures in future studies could shed more light on the strength and centrality of the different poverty measures.

A final limitation is that we used convenience sampling, which is often associated with higher risk of bias. In particular, we recruited the majority of the participants from our non-poor sample using our personal networks. However, we have compared the poor and non-poor samples on a variety of socioeconomic and demographic characteristics to assess the likelihood of our results being biased. We found that the non-poor subsample, although being more educated that the poor subsample, were not different in their social profile from the Russian population. The two samples, however, differed in age and gender. We attempted to overcome this limitation by controlling for age and gender in the regression analyses, however, we cannot claim that all possible confounds can be ruled out.

In conclusion, our study shows that socioeconomic indicators indeed relate to psychological variables in systematic and meaningful ways, largely confirming the findings from previous research conducted in different social and cultural contexts. At the same time, it also shows that not all socioeconomic indicators are equal and appear to function in different ways in predicting psychological variables. So, while individual differences in SES clearly relate to psychological variables, it is useful to differentiate between them to have a more refined understanding of this relationship.

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APPENDIX

TABLE A1Socio-demographic profiles of the poor and non-poor samples

	Poor (N = 162)	Non-poor (N = 188)			
Gender	Male = 60.5%	Male = 41.5%			
	Female = 39.5%	Female = 58.5%			
Age	M = 41.28; $SD = 11.42$	M = 34.10; SD = 13.56			
Ethnicity	Russian = 91.4%	Russian = 91.5%			
	Other = 8.6%	Other = 8.5%			
Education	Less than high school = 4.3%	Less than high school = 0%			
	High school or vocational training = 71.6%	High school or vocational training = 4.8%			
	Incomplete university education = 19.8	Incomplete university education = 19%			
	University degree = 4.3%	University degree = 72.9%			
	PhD = 0%	PhD = 3.2%			
Income	Less than 7500 (subsistence minimum) = 89.5%	Less than 7500 (subsistence minimum) = 0%			
	7500 - 25,000 = 9.5%	7500 - 25,000 = 17.6%			
	25,001-40,000 = 0%	25,001-40,000 = 30.3%			
	40,001-60,000 = 0%	40,001-60,000 = 34%			
	60,001 - 80,000 = 0%	60,001-80,000 = 10%			
	Above $80,000 = 0\%$	Above $80,000 = 7.9\%$			
Occupation	Not employed = 81.5%	Not employed = 0%			
	Student = 0%	Student = 18.2%			
	Retired = 2.9%	Retired = 7.4%			
	Unskilled working class = 15.0%	Unskilled working class = 0%			
	Skilled working class (manual) = 0%	Skilled working class (manual) = 3.2%			
	Skilled working class (non-manual) = 0%	Skilled working class (nonmanual) = 35.6%			
	Highly skilled professionals = 0%	Highly skilled professionals = 33.5%, including researchers = 2.1%			
Religious identity	Russian Orthodox = 91.2%	Russian Orthodox = 93.1%			
	Other = 8.8%	Other = 6.9%			
Level of religiosity	M = 3.01; $SD = 0.83$	M = 3.06; $SD = 0.80$			

TABLE A2Correlations among socioeconomic indicators (Pearsons's *r*)

		Income	Subjective SES	Deprivation	Childhood SES	Education
Income	r	_				
	p	_				
Subjective SES	r	0.682***	_			
	p	<.001	_			
Deprivation	\dot{r}	-0.649***	-0.652***	_		
•	p	<.001	<.001	_		
Childhood SES	r	0.132*	0.172**	-0.103	_	
	p	0.013	0.001	0.053	_	
Education	r	0.655***	0.567***	-0.590***	0.092	_
	p	<.001	<.001	<.001	0.087	_

Note: p < .05, p < .01, p < .001. p = 350. SES = socioeconomic status.

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TABLE A3Means and standard deviations for poor and non-poor samples on twelve psychological measures

	$Total\ (N=350)$		$Poor\left(N=162\right)$		$Non ext{-}poor\ (N=188)$	
	M	SD	M	SD	M	SD
Openness to change	3.97	0.65	3.67	0.72	4.22	0.45
Self-transcendence	3.93	0.63	3.71	0.70	4.12	0.49
Conservation	3.42	0.74	3.50	0.78	3.35	0.71
Self-enhancement	3.25	0.69	3.17	0.73	3.31	0.65
Dispositional greed	3.25	0.80	3.39	0.86	3.14	0.73
Risky behaviours	2.21	0.76	2.61	0.82	1.87	0.47
Self-control	2.46	0.48	2.31	0.48	2.59	0.45
Self-efficacy	2.91	0.41	2.87	0.46	2.94	0.37
Trust	3.16	0.80	2.96	0.79	3.34	0.77
Life satisfaction	3.70	1.20	3.08	1.07	4.23	1.04
Health status	3.40	0.83	3.02	0.82	3.73	0.68