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Ecological Predictors of Perceiving Scarcity in Childhood[Ψ]

By Jorge Cuartas[*] & Catalina Rey-Guerra[**]

Abstract

Evidence from multiple disciplines suggests there is a strong association between poverty and child development, mediated by worry and stress. Nevertheless, it is yet unclear why some children worry more about their family economic situation while others do not. In this paper, we analyze ecological predictors of worrying for family money in childhood. For this purpose, we use the second wave of the International Survey of Children's Well-being (ISCWeB), in which children from 16 developed and developing countries stated whether they worry about their family money. The dataset also contains rich information about individual characteristics, such as age and gender, and contextual factors, such as home and family life, neighborhood quality, school life, and peers relationship. Using descriptive analysis and ordered probit models, we find that family relationship quality, school climate, and peer involvement are the main predictors of perceiving scarcity in childhood, even after controlling for other individual characteristics and heterogeneity across countries. Yet, other individual and contextual factors (e.g., school satisfaction and neighborhood quality) are also significant predictors. Based on the results, we discuss research and policy implications aimed at formulating precise strategies to reduce the adverse consequences of poverty and worrying for having too little in childhood.

Key words: Perceiving scarcity, Ecological Context, Child Poverty, Well-Being, International

Resumen

La evidencia de múltiples disciplinas sugiere que existe una fuerte asociación entre pobreza y desarrollo en la niñez, mediada por estrés y preocupaciones. No obstante, aún no es claro por qué unos niños se preocupan más por los recursos de sus familias mientras otros no. En este artículo, analizamos predictores ecológicos de preocuparse por los recursos económicos de la familia en la niñez. Para esto, utilizamos la segunda fase de la International Survey of Children's Well-being (ISCWeB), en la cual niños de 16 países desarrollados y en desarrollo reportan si se preocupan por los recursos económicos de sus familias. La base de datos también cuenta con extensa información sobre características individuales, como edad y sexo, y factores contextuales, como la vida familiar y en el hogar de los niños, la calidad del barrio donde viven, su vida en el colegio y su relación con pares. Utilizando un análisis descriptivo y modelos Probit ordenados, encontramos que la relación con la familia, el clima escolar y el involucramiento de pares son los principales predictores de percibir escasez de recursos en la niñez, incluso al controlar por otras características individuales y por heterogeneidad a través de los países. Sin embargo, otros factores individuales y del contexto (e.g., satisfacción con el colegio y la calidad del barrio) también son predictores significativos. Con base en los resultados, discutimos implicaciones de investigación y de política enfocadas en formular estrategias puntuales para reducir las consecuencias adversas de la pobreza y de preocuparse por tener muy poco en la niñez.

Palabras clave: Percibir escasez, contexto ecológico, pobreza infantil, bienestar, internacional

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1. Introduction

In the last years, a body of research has focused on studying poverty from a multidimensional perspective. This literature considers that, besides material, political, and social factors, psychological factors also matter. For instance, evidence from psychology, economics and neuroscience suggest that negative affect states and stress have the potential to trigger self-sustaining poverty cycles (Haushofer, Crockett, & Lawson, 2015; Haushofer & Fehr, 2014). Moreover, having pessimistic expectations and aspirations has also been associated with negative socioeconomic trajectories and lower chances of upward social mobility (Cuartas & Moya, 2016; Duflo, 2012; Ray, 2016). Even the mere perception of monetary scarcity, i.e. subjective feeling of having less than one needs, may reduce cognitive capacity and produce attention shifts towards the source of scarcity. Altogether, these psychological processes may lead to self-defeating decisions that may perpetuate poverty (Cuartas, Harker, & Moya, 2016; Mani, Mullainathan, Shafir, & Zhao, 2013; Schilbach, Schofield, & Mullainathan, 2016).

In childhood, poverty can have even more pervasive effects. Infants of low-income families, that experience social disadvantages and are exposed to adversities early in life, show an array of physiological and psychological consequences (e.g. elevated blood pressure, higher cortisol awakening response, early maturation of the HPA axis[1]), that can prevail until adulthood through affecting developmental trajectories (Hackman et al., 2015; Saridjan et al., 2010; Cohen et al., 2010; Evans and Kim, 2012, Ursache, Noble, & Blair, 2015). Both the quality of childhood environment and children's perceptions about their own lives can boost or undermine the development of cognitive, social and emotional skills, which in turn are strong predictors of positive outcomes related to education, health and socioeconomic status, among others (Borghans, Duckworth, Heckman, & Ter Weel, 2008; Heckman, Stixrud, & Urzua, 2006).

The underlying mechanisms that explain the effect of poverty on development are stress and negative affect states (Evans & Kim, 2012, Hackman et al., 2015), caused by multiple stressors such as the lack of nurturing relationships with parents, family turmoil, lack of social support and exposition to violence (Evans, 2004). Even subjective distress about one's socioeconomic condition can impair children's cognitive and emotional progress (Ursache, et al., 2015). Nonetheless, there are multiple cases where poverty "doesn't get under the skin", and against the worst adversities children succeed (Evans, Chen, Miller, & Seeman, 2012; Gertler et al., 2014; Tough, 2016). Hence, it is not only the material conditions and exposure to adverse biological environments that compromises the development of children living in poverty, but also the stress and worries that come along with it.

[1] The Hipothalamic-pituitary-adrenal axis is the main stress response system.

Few studies, however, have assessed which contextual factors are associated with these worries in childhood. In this context, this paper aims to explore ecological factors associated with a major source of stress in childhood, namely worries about having too little money, understood as perceiving scarcity. We consider ecological factors, and not merely household environment, given those children's subjective experiences of different contexts, such as their home, neighborhood and school, and their interactions with family members, teachers and peers, play a major role in shaping their developmental trajectories and well-being (Bronfenbrenner, 1989; Newland, et al., 2015). Particularly, in this study we aim to address the following research question: Which ecological factors predict perceiving scarcity (i.e., worrying about family money) in an international sample of 8 year old children?

To our knowledge, our study is the first to analyze ecological factors associated with worrying about family money in childhood, despite recent papers focusing on children's subjective deprivation (Huyer-May, Schmiedeberg & Schumann, 2017) and the relationship between poverty and subjective well-being (Yin-Nei Cho, 2017). We contribute to a growing literature that focuses on children's subjective well-being and perceptions about their contexts (e.g., *Child Indicators Research* special issue on child subjective well-being, Volume 8, Issue 1). Likewise, we contribute to the literature on poverty and child development, offering evidence that may help to disentangle the factors contributing the most to worry and stress related to socioeconomic circumstances in childhood.

In order to identify ecological factors associated with perceiving scarcity in childhood, we use information from a sample of eight-year-olds from the second wave (2013-2014) of the International Survey of Children's Well-Being - ISCWeB[2] (Rees & Main, 2015). The study includes rich information on children's perceptions about their contexts and subjective well-being. Moreover, the survey asks children how often they worry about family money (i.e., perceiving scarcity). Employing these data, we use descriptive analysis and an inferential analysis by estimating ordered probabilistic models. We control for demographic characteristics and observed as well as unobserved time-invariant heterogeneity across countries (including country fixed-effects) throughout the analysis in order to improve the accuracy of the estimators. Also, taking advantage of the sampling design, we estimate school clustered standard errors to account for within cluster correlation between observations, a problem that could lead to incorrect inference (Cameron & Miller, 2015).

Our findings suggest that the strongest predictors for perceiving scarcity in childhood are family relationship quality, school climate and peers relationship. Furthermore, neighborhood and school contexts are also significantly associated with perceiving scarcity in childhood. These results are consistent with

[2] http://www.isciweb.org/

several findings from previous studies, further stressing the importance of contexts and relationships as potential sources of protection or threat in childhood. In addition, the results have significant policy implications in terms of designing strategies to build nurturing environments where children could reach their full potential, even in the most disadvantageous contexts.

2. Method

2.1. Sample

We use data for children aged 6 to 9 years from the second wave of ISCWeB. ISCWeB is an international study about children's perceptions of their lives and well-being (Rees, Bradshaw, & Andresen, 2015). The survey consists of a self-completion questionnaire that is conducted using different sampling strategies through each country. It includes nationwide representative samples for some countries and region-wide representative samples for others (Rees & Main, 2015).

This survey covers a sample of 17,496 children from 308 schools from 16 countries: Algeria (n=1,244), Colombia (n=902), Estonia (n=1,076), Ethiopia (n=953), Germany (n=1,056), Israel (n=886), Malta (n=802), Nepal (n=975), Norway (n=930), Poland (n=1,021), Romania (n=1,242), South Africa (n=996), South Korea (n=2,432), Spain (n=1,032), Turkey (n=959), and England (n=990). The database thus covers a wide range of countries in terms of geography, culture and economic situation. Moreover, the sample is balanced by gender and the mean age is 8 years old (range 6-9 years old, M=8.07; SD=0.52).

ISCWeB's questionnaires were administered during class time in schools and child care centers (Rees & Main, 2015), consisting of 8 main sections, covering (i) individual characteristics; (ii) home and people with whom they lived; (iii) money and possessions; (iv) friends and other people; (v) local area; (vi) school; (vii) time use; and (viii) life in general (Rees, et al., 2015).

2.2. Measures

Following ISCWeB scales, Newland et al. (2015), and Lawler et al. (2017), we constructed a group of measures of different dimensions of children's ecology. These measures were transformed into a scale ranging from 0 to 100. We begin by discussing our dependent variable: children's perceived scarcity.

2.2.1. Dependent variable

Perception of Scarcity. ISCWeB survey offers data that allows us to identify subjective perceptions of scarcity. In particular, the survey asked "How often do you worry about how much money your family has?" Children could answer: (i) never, (ii) sometimes, (iii) often, or (iv) always. Hence, this item does not measure whether children perceive they are poor or have less money than other people, nor subjective

deprivation as in Huyer-May et al (2017), but rather whether they worry because they perceive money is scarce in their household.

2.2.2. Children's ecology

Individual Characteristics. The survey includes basic demographic indicators, which are used across the analysis as control variables. Particularly, children reported their age, gender, country in which they were born and there is, also, an identifier for the school in which each child studies. Moreover, we measure children's Personal Satisfaction including three items: first, their satisfaction with their freedom, with the way they look and with the way they are listened by adults in general. Cronbach's alpha (α) for this scale is 0.46. We also include two scales measuring children's subjective well-being. The first is Students Life Satisfaction Scale – SLSS-4 (Huebner, 1991), a 5 point scale that includes "my life is going well", "my life is just right", "I have a good life", "I have what I want in life", and "the things in my life are excellent" (α =0.67). The second is an adapted version of Personal Well-Being Index-School Children – PWI-SC (Cummins & Lau, 2005), which includes children's satisfaction with all the things they have, their health, their relationships with people in general, and with how safe they feel (α =0.61). Finally, the survey asked children about their overall happiness with their life in a ten point scale.

Home and Family Life. We measure children's perceptions about their home and family using four scales. First, a Home Environment scale including two items, which are "I feel safe at home" and "I have a quiet place to study at home" (α =0.46). Second, a Deprivation Index that measures children's perceptions of access to material resources. Participants reported whether they effectively had: clothes in good condition to go to school in, access to a computer at home, access to internet, a family car for transportation, and a television at home. The Deprivation Index counts the number of items the children lack, excluding television given that it was not asked in some countries. The index ranges from 0 (the child possesses all items) to 4 (the child lacks all items). Third, a Family Relationship Quality using three items, including whether parents listed to them, treat them fairly, and whether they have a good time together in family (α =0.68). Lastly, we include a Parental Involvement scale using three items, which reflect children's perceptions about the frequency of parent involvement in activities with them. This scale includes the frequency of parent-child talking, having fun and learning together (α =0.61).

Neighborhood Quality. We measure children's perceptions about their neighborhood quality using one scale that includes five items. Particularly, the scale contains whether children feel safe when walking in the neighborhood, if they consider there are sufficient places to play, and their level of satisfaction with outdoor areas, people in their neighborhood, and their overall satisfaction with the neighborhood (α =0.70).

School Life. We employ three scales in order to measure children's perceptions about their school. First, a Teacher Relationship with three items, which are whether children perceived their teachers listen to them, treat them fairly, and their satisfaction with their teachers (α =0.70). Second, perceived School Climate, including three items that are "I feel safe at school" and the frequency of being hit or left out by other children[3] (α =0.44). Third, we use a School Satisfaction scale with three items, including children's satisfaction with their classmates, grades and overall experiences (α =0.62).

Peers Relationships. We measure children's perceptions of their relationships with peers using two scales. First, a perceived Peer Relationship Quality, including three items that are children's satisfaction with their friends, with their number of friends, and whether their friends are usually nice to them (α =0.69). Second, a Peer Involvement scale with three items, including the frequency of child-peers interactions such as talking, having fun and studying together (α =0.64).

2.3. Data analysis

We begin by summarizing descriptive statistics in order to characterize the dependent variable and other measures. Then, as a first approach to analyze ecological factors associated with perceiving scarcity in childhood, we perform mean differences test for the ecological factors between children who perceive scarcity and children who state they do not worry about their family money. The mean difference test, hence, will show whether there are statistical differences in the ecological factors aforementioned between both groups.

Next, we estimate ordered probit models by maximum likelihood in order to analyze ecological predictors of perceiving scarcity. An ordered probit model is a generalization of a probit model, which is used when the dependent variable is not binary but categorical or a ranking. For our analysis, the dependent variable ("How often do you worry about how much money your family has?") has four possible answer categories: (i) never, (ii) sometimes, (iii) often, and (iv) always. Note that these answers can be coded as numbers, but these numbers, and the distance between each category, do not mean anything. Nonetheless, an ordered probit model can be used to estimate the probabilities associated with each category or response. Moreover, the model can be used to estimate the probabilities associated with changes in independent variables. In order to employ an ordered probit model, it is required that the dependent variable is a monotonic ordering of the responses (Wooldridge, 2002).

For all estimations we include as control variables children's age, gender, whether children know children's rights, and their perceptions about whether adults in their area respect their rights. Besides, in order to

[3] The variables that indicate the frequency of being hit or left out by other children were reversed in order to preserve the direction of the scale.

reduce possible biases due to unobserved heterogeneity, we include country fixed-effects, i.e.: a binary variable for each country. Including fixed-effects controls for unobserved characteristics across countries, such as cultural, political, economic and social differences, which allows us to obtain more precise estimators. Given that data are grouped into clusters (schools), we estimate robust and clustered-robust standard errors to improve the accuracy of the estimations (Cameron & Miller, 2015). Finally, in order to interpret the magnitude of the associations, we estimate marginal effects for the ordered probit models, which show changes in the likelihood that children selected each possible answer given their contexts and characteristics.

3. Results

3.1. Descriptive Analysis

Table 1 summarizes descriptive statistics. Panel A describes the dependent variable, while Panel B summarizes statistics for ecological factors. The survey has information for 14,723 children regarding whether they worry for their family money, of which 33% answer never, 34% sometimes, 12% often and 21% always. The average number of lacked material for children is 0.80 (SD=1.12). The means for the ecological factors are between 60 and 90. Peer Involvement and Home Environment are the most disperse variables, while PWI-SC and School Satisfaction have the smallest standard deviations.

Table 1. Summary of descriptive statistics

Variable	Obs.	Mean	SD	Min	Max
A. Dependent Variable					
How often worries about family money					
1. Never	14,723	0.33	0.47	0	1
2. Sometimes	14,723	0.34	0.47	0	1
3. Often	14,723	0.12	0.32	0	1
4. Always	14,723	0.21	0.41	0	1
B. Children's Ecology					
Deprivation index	15,629	0.80	1.12	0	4
Home environment	16,615	79.78	23.20	0	100
Family relationship	16,016	81.91	21.77	0	100
Parent involvement	15,906	75.44	22.95	0	100
Neighborhood quality	15,887	79.80	19.33	0	100
Teacher relationship	16,147	84.70	19.84	0	100
School climate	15,331	77.22	22.81	0	100
School satisfaction	17,014	84.99	17.40	0	100
Peer relationship quality	16,263	84.27	19.71	0	100
Peer involvement	15,894	61.98	26.39	0	100
Personal satisfaction	15,850	85.31	18.10	0	100
SLSS-4	15,864	84.73	20.54	0	100
PWI-SC	16,564	87.89	14.50	0	100
Happiness with life	16,138	88.72	19.83	0	100

Results reported: observations, statistical mean, standard deviation, minimum, and maximum.

Table 2 presents mean difference tests for ecological factors between children who report they do not worry about family money and children who worry. For this analysis, we create a binary variable that equals zero if children state they never perceive scarcity and equals one if children perceive scarcity sometimes, often, or always. The results suggest that children who perceive scarcity on average lack 0.09 more items than children who do not perceive scarcity. Furthermore, there are statistical differences between children who state they do not worry about their family money and those who state they worry. Particularly, children who do not worry on average perceive their contexts more positively. Although these differences are statistically significant, some of them may be driven by omitted variables. To address this problem, we estimate ordered probit models including control variables to reduce estimation biases.

Table 2. Mean differences for ecological factors between children perceiving and not perceiving scarcity

Variable	No Scarcity (N)	Scarcity (S)	Difference (N-S)	SE for difference
Deprivation index	0.73	0.82	-0.09***	0.02
Home environment	82.15	78.84	3.31***	0.42
Family relationship	84.46	80.90	3.55***	0.38
Parent involvement	76.35	75.08	1.27**	0.40
Neighborhood quality	81.96	78.96	3.00***	0.34
Teacher relationship	86.56	83.96	2.60***	0.35
School climate	81.62	75.43	6.19***	0.40
School satisfaction	86.79	84.28	2.50***	0.30
Peer relationship quality	86.51	83.38	3.13***	0.34
Peer involvement	63.25	61.47	1.78***	0.46
Personal satisfaction	87.13	84.59	2.54***	0.14
SLSS-4	87.02	83.81	3.20***	0.36
PWI-SC	89.73	87.89	2.55***	0.25
Happiness with life	90.34	88.09	2.25***	0.35

Results reported: Means for children who do not perceive scarcity, means for children who perceive scarcity differences between children who do not perceive scarcity and children who perceive scarcity, standard deviation for differences. * Significant at 10%, ** significant at 5%, *** significant at 1%.

3.2. Inferential Analysis

Table 3 summarizes results for different specifications of ordered probit models. Across models, we use a sub-sample for which we have no missing values in the covariates. Column 1 presents the results for the baseline model, where perceiving scarcity depends only on the deprivation index. This model includes as control variables children's age, gender, an indicative variable for knowledge of children's rights, and children's perception about whether adults respect them in their area. The results suggest that there is a significant positive association between the deprivation index (i.e., lacking material things) and perceiving scarcity.

Table 3. Ecological predictors of perceiving scarcity

Variables	**(1)**	**(2)**	**(3)**	**(4)**
Deprivation index	0.083***	0.072***	0.009	0.009
	(0.009)	(0.011)	(0.016)	(0.019)
Home environment		0.001	0.000	0.000
		(0.001)	(0.001)	(0.001)
Family relationship		-0.004***	-0.004***	-0.004***
		(0.001)	(0.001)	(0.001)
Parent involvement		0.003***	0.000	0.000
		(0.001)	(0.001)	(0.001)
Neighborhood quality		-0.000	-0.002**	-0.002*
		(0.001)	(0.001)	(0.001)
Teacher relationship		0.000	-0.000	-0.000
		(0.001)	(0.001)	(0.001)
School climate		-0.009***	-0.006***	-0.006***
		(0.001)	(0.001)	(0.001)
School satisfaction		-0.000	-0.002*	-0.002*
		(0.001)	(0.001)	(0.001)
Peer relationship quality		0.001	0.001	0.001
		(0.001)	(0.001)	(0.001)
Peer involvement		0.001***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)
Personal satisfaction		0.003**	0.002*	0.002**
		(0.001)	(0.001)	(0.001)
Happiness with life		0.000	-0.002**	-0.002*
		(0.001)	(0.001)	(0.001)
SLSS-4		-0.000	-0.000	-0.000
		(0.001)	(0.001)	(0.001)
PWI-SC		-0.003**	-0.005***	-0.005***
		(0.001)	(0.001)	(0.002)
Control Variables	Yes	Yes	Yes	Yes
Country fixed-effects	No	No	Yes	Yes
Clustered-robust SE by school	No	No	No	Yes
Observations	7,940	7,940	7,940	7,940

Results from ordered probit maximum likelihood estimation. Robust standard errors in parentheses in columns 1, 2, and 3, and Clustered errors by school in column 4. Control variables: age, gender, knowledge of children's rights, and perceptions on adults respect for children's rights. * Significant at 10%, ** significant at 5%, *** significant at 1%.

Column 2 displays results for a model that includes the ecological factors aforementioned. Note that including those variables reduces the coefficient of Deprivation Index, although it remains statistically significant. According to this model, there are six main ecological predictors of perceiving scarcity, even after controlling for the Deprivation Index. This index captures differences in material possessions, and therefore allows us to compare individuals with similar levels of material possessions, but differences in ecological factors that could explain gaps in perceiving scarcity. First, the relationship with family, school climate, and PWI-SC index have a negative association with perceiving scarcity, that is, an increase in those indices reduces the probability that children state they worry about their family money. Secondly, parent

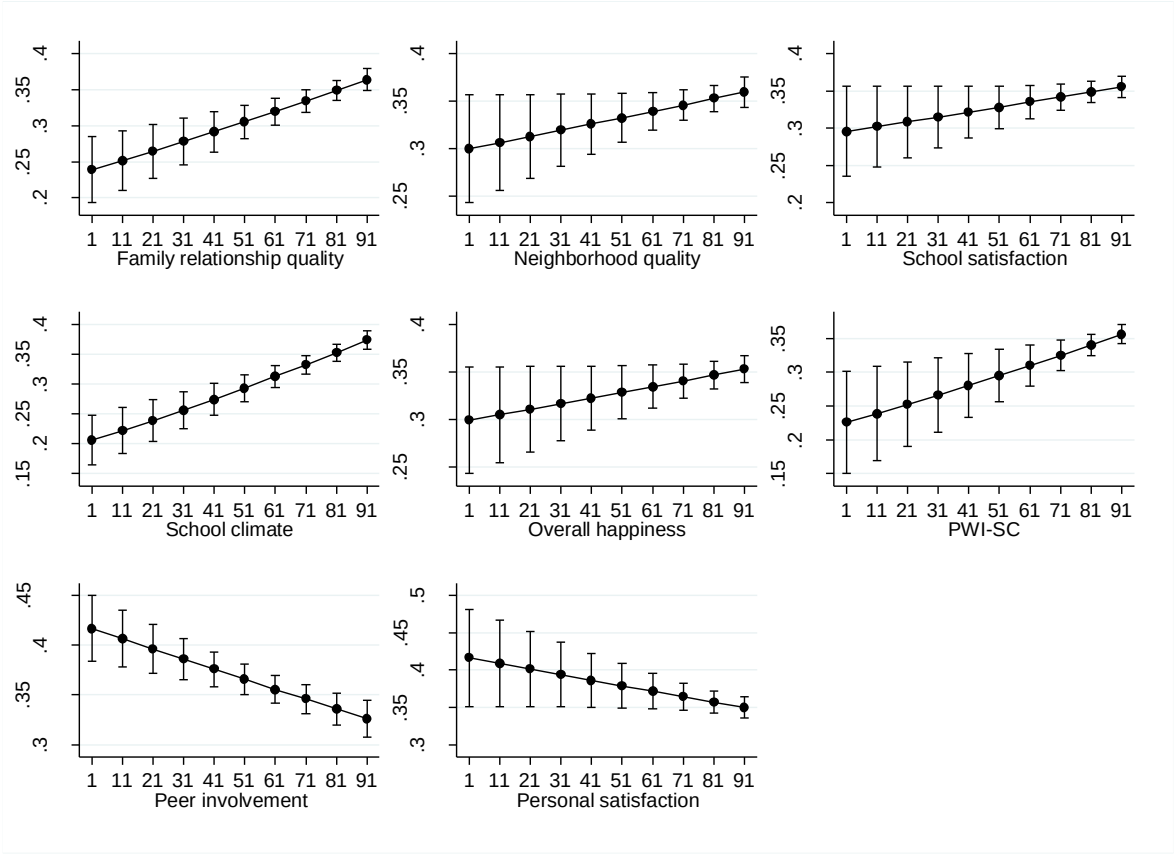
involvement, peer involvement, and personal satisfaction have positive associations with perceiving scarcity.

In order to improve estimates, in Column 3 we include country fixed effects, which control for unobserved heterogeneity across countries (i.e., cultural, economic, political and social differences, among others). The inclusion of country fixed-effects reduces potential biases due to omitted variables. Note that in this model the coefficient for Deprivation Index and parent involvement losses its statistical significance, suggesting the results from the other models were driven by omitted variables. Moreover, in this model the quality of neighborhood and school satisfaction index are associated negatively with the perceiving scarcity.

Estimates shown in Column 4 additionally include clustered-robust standard errors to improve the accuracy of our inferences. This is our preferred model, as it controls for demographic characteristics, material possessions, and unobserved heterogeneity across countries, and takes into account clustering across data. As the results suggest, coefficients and significance for variables that were statistically significant in the previous model are robust to the inclusion of clustered-robust standard errors.

Figure 1 presents marginal effects for the estimations in order to interpret the magnitude of the results. These graphs for marginal effects summarize the changes in the probability children never perceive scarcity, given different levels of ecological factors, controlling for other variables. The y-axis displays the probability children state they never worry about their family money, that is, that they do not perceive scarcity, while x-axis displays the statistically significant ecological predictors.

Fig. 1. Ecological predictors for not perceiving scarcity



Note: marginal effects for ordered probit maximum likelihood estimation.

As the Figure 1 illustrates, family relationship quality and school climate are the strongest predictors of perceiving scarcity: an increase from 0 to 100 in the former is associated with an increase of 12.5 percentage points in the likelihood that children never perceive scarcity, while the latter is associated with an increase of 16.7 percentage points. These coefficients suggest that children who score 100 on the Family Relationship Quality and School Climate indexes are 35.7% and 47.7%, respectively, more likely to state they do never worry about family money compared to children who score 0, all other things held constant. On the other hand, children who score 100 compared to those who score 0 on Neighborhood Quality, School Satisfaction, Overall Happiness, and PWI-SC have 5.9, 5.4, 13, and 13.1 percentage points, respectively, more odds to have stated they never perceive scarcity. These effects amount to increases of 16.8%, 15.4%, 37.1%, and 37.4%, respectively, compared to base probabilities. Nevertheless, the confidence intervals for those marginal effects are larger, making it more difficult to assure there are statistically significant differences between them.

Lastly, children that perceive more peer involvement (scoring 100) are 9.1 percentage points less likely to have stated they never worry about family money than children reporting a less peer involvement. Although this results seems counterintuitive, note that this scale do not measure relationship quality, but the frequency

of activities such as talking, having fun and meeting to study with peers. It is possible, then, than children who interact more often with peers are exposed to more social comparison, which may lead them to worrying about their family money. There is also a positive and statistically significant association between perceiving scarcity and the Personal Satisfaction index, though confidence intervals for the marginal effects do not show a clear gap between children with different levels of personal satisfaction.

3.3. Cross country comparison

Table 4 presents the percentage of children by country who never, sometimes, often and always worry about family money. These results show that Colombia, Nepal and Spain are the countries with the bigger proportion of children who asserted they worry about their family money; while Ethiopia, Germany and South Korea are the countries where more children stated they never worry about family money.

In terms of the intensity of these worries, European countries, with the exception of Malta and Spain, tend to have a fewer proportion of children who stated they always worry about family money; while Israel has the larger proportion, followed by Colombia, Spain, South Africa, Turkey, Malta, Nepal and Algeria. Future research may enrich the understanding on these differences by exploring country characteristics associated with this heterogeneity.

Table 4. Percentage of children who perceived scarcity by country

Country	How often do you worry about how much money your family has?			
	Never	Sometimes	Often	Always
Algeria	32.2%	26.8%	15.0%	25.9%
Colombia	21.5%	32.4%	14.8%	31.3%
Estonia	26.4%	36.3%	12.3%	24.9%
Ethiopia	41.9%	27.7%	15.7%	14.8%
Germany	40.9%	39.9%	10.3%	8.9%
Israel	34.2%	19.9%	9.40%	36.5%
Malta	33.6%	27.4%	10.2%	28.7%
Nepal	15.8%	45.4%	10.6%	28.2%
Norway	32.3%	42.7%	11.0%	14.0%
Poland	27.4%	37.5%	15.3%	19.9%
Romania	33.4%	23.2%	18.8%	24.6%
South Africa	34.5%	26.0%	9.7%	29.9%
South Korea	47.1%	41.8%	7.2%	4.0%
Spain	19.1%	35.2%	15.2%	30.5%
Turkey	30.6%	34.1%	6.4%	28.9%

Results reported: percentage of children by country who answer (i) never, (ii) sometimes, (iii) often, and (iv) always to the question: how often do you worry about how much money your family has?

4. Discussion

A considerable amount of evidence shows there is a strong association between household poverty and children development (Hackman et al., 2015), which is mediated by worry and stress (Evans & Kim, 2013). Despite the fact this relationship has been explored in several previous studies, it remains unclear why some children worry about their family economic situation, while others do not. In this paper, we aim to contribute

to fill this gap, by focusing on children's subjective experiences and perceptions about their socioeconomic situation, particularly on whether they worry about their family money.

To begin with, we find a negative and statistically significant association between family relationship quality and the likelihood of perceiving scarcity (i.e., worrying for family money), while parental involvement (i.e., the frequency of parent-child activities) is not associated when controlling for other contextual and individual variables. These results suggest that it is not children's perceived frequency of parents' involvement in activities with them that matters, but the quality of their relationship, measured as whether children perceive their parents listen to them, treat them fairly, and whether they have a good time together that is associated with the likelihood of perceiving monetary scarcity. These results are related with other findings in the literature, which show that the quality of familiar relationship is a moderator between poverty and well-being, highlighting the importance of this variable as a protective buffer against threatening contexts (Yin-Nei Cho, 2017). As stated by Tough (2013, p. 28), "Parents and other caregivers who are able to form close, nurturing relationships with their children can foster resilience in them that protects them from many of the worst effects of harsh early environments".

Our results also suggest there is a negative association between children's perceived neighborhood quality and the likelihood of perceiving scarcity. This is consistent with recent evidence from Huyer-May et al. (2017), who find that children between 7 and 16 years old from low-income families feel less deprived if they live in socioeconomically better off neighborhoods, which contradicts a comparison/relative-deprivation hypothesis. Besides, parents and children who benefited from a program, and who moved from poverty-ridden neighborhoods to near-poor or non-poor neighborhoods, reported significantly less distress and anxiety/depression symptoms compared to individuals who stayed in poor neighborhoods (Leventhal & Brooks-Gunn, 2003). Lastly, Clark, Frijters, & Shields (2008) found a positive association between neighborhood quality and household satisfaction with economic conditions.

In addition, we find children's satisfaction with their school, and particularly their perceptions about their schools' climate, are important predictors of worrying for family money in our sample. These findings can be related with literature that identifies a strong relationship between school climate and well-being and emotional health in childhood and adolescence (Lester & Cross, 2015; Kohoulat, et al., 2015). On the whole, our findings suggest schools where children feel safer and are less exposed to bullying and exclusion, serve as protective shields for children's emotional well-being.

Finally, the results show there exists a positive association between peer involvement and perceiving scarcity. Although these results seem to some extent counterintuitive, note it is not peer relationship quality that matters itself, but the frequency of child-peers interactions (such as talking, having fun and studying

together). Some theoretical approaches state individual's well-being and perceptions about their socioeconomic circumstances negatively depend on the circumstances of a reference group (Clark, et al., 2008), and some evidence suggests even children engage in this kind of social comparisons (Lubbers, Kuyper, & van der Werf, 2009). Using this framework, it is possible that children who interact more frequently with peers are exposed to more points of reference, leading to higher aspirations or status-seeking behaviors that may alter their perceptions of current circumstances.

4.1. Limitations

The present study has several limitations that should be mentioned. First, given that our independent variable is a self-report measure, participants could have under- or over-reported the truth about how much do they worry about their family money, and this could be correlated to other covariates hence affecting the conclusions of the study. Second, although our efforts to control for individual and contextual variables, and even though we include country fixed effects to reduce some observed and unobserved heterogeneity, the cross-sectional research design limits our capacity to make causal conclusions about the findings. In particular, it is impossible to guarantee there are not omitted variables, especially individual unobserved factors. Another threat to validity is the potential double causality problem we face with some of our predictors, which explain someway scarcity but can be explained by the feeling of scarcity as well (e.g. happiness). On the other hand, different countries implemented different sampling methodologies: some samples are representative only for a particular region, while others are representative samples of the whole country. Also, some scales have low levels of reliability that must be noted. Finally, ISCWeB did not purposively sample children more exposed to impoverished or violent environments, hence we cannot draw conclusions for in-risk children based on our results.

4.2. Implications

Despite the limitations, this study has several research and policy implications. Given that our conclusions are limited by the cross-sectional design of the study and the lack of detail socioeconomic characteristics that could improve the accuracy of the estimates, future research could be done using panel data information, which may reduce potential biases controlling for unobserved characteristics across individuals. Even though this study has as a strength using children's perceptions about their environments and experiences, future research could incorporate both subjective and objective measures of children's contexts, relationships, and worry or stress indicators, which could enhance the understanding of how objective and subjective circumstances interact to produce certain results. In addition, further related studies could strengthen their findings considering a qualitative component that clarify and validate the data adding children's voices.

In terms of public policy, the literature of development economics and social psychology has a set of options that can be explored to alleviate children's and adolescents' worries and stress related to their socioeconomic status. For instance, the evidence suggests conditional and unconditional cash transfers have the potential to ameliorate psychological distress and mental health problems in children and adolescents (Baird, De Hoop & Özler, 2013), as well as impact their aspirations and beliefs (García, Harker & Cuartas, 2016). On the other hand, it is possible to improve children's home environment through interventions such as home visiting (e.g., Gertler et al., 2014), or the use of mobile technologies to give parents information (e.g., Bergman, 2015). Another option worth exploring at schools would be mindfulness-like interventions, which have proven effects on anxiety, resilience, and other psychological well-being indicators (e.g., Wendt et al., 2015). Even though the fight against child poverty has not yet been won, in the meantime there are several tools we can employ to improve children's subjective well-being and help them reach their full potential.

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