UNITED NATIONS DEVELOPMENT PROGRAMME

DEVELOPMENT FUTURES SERIES

SEPTEMBER 2021

UNDP Global Policy Network Brief

Social capital in Paraguay: an asset for combatting vulnerability during the COVID-19 pandemic?

by Claudia V. Montanía, Cristhian Parra, Gustavo Setrini, Mónica Ríos[1]

Solidarity has been a hallmark of the COVID-19 pandemic response in Paraguay. Many vulnerable communities have found ways to survive in the crisis context by mobilizing support from community and volunteer networks and civil society organizations, and also by accessing institutional forms of support, such as cash transfer programmes. How pervasive is collective action in vulnerable territories during the pandemic? Who engages in collective action, and to what end? And does it reduce vulnerability? This policy brief reports preliminary results of a survey on social capital in selected territories of Paraguay and its relationship with economic vulnerability during the first year of the COVID-19 pandemic. The data presented provide insights into how trust and social capital have enabled collective action in vulnerable territories of Paraguay during the pandemic. This evidence can inform policy debates on how to increase resiliency and reduce vulnerability and allow us to identify, design and evaluate interventions to increase access to formal and informal types of aid in vulnerable territories.

The concept of social capital refers to the nature of group life and sociability for cooperation, trust and social cohesion. Political scientists and sociologists define it as the characteristics of social organization, such as interpersonal networks and norms or reciprocity and trust, which facilitate coordination and cooperation for mutual benefit.[2] Research has identified the particularly important role of social capital in disaster response and recovery.[3,4,5,6]

With an informal employment rate of 65.1 percent,[7] most Paraguayans fall outside the formal safety net of social insurance and work beyond the reach of public sector regulatory and welfare institutions. To mitigate the health impact of the pandemic's first wave, the Paraguayan government implemented social distancing measures in March 2020, producing an immediate economic shock: by June 2020, 64 percent of households reported a decrease in their total income, 44 percent declared

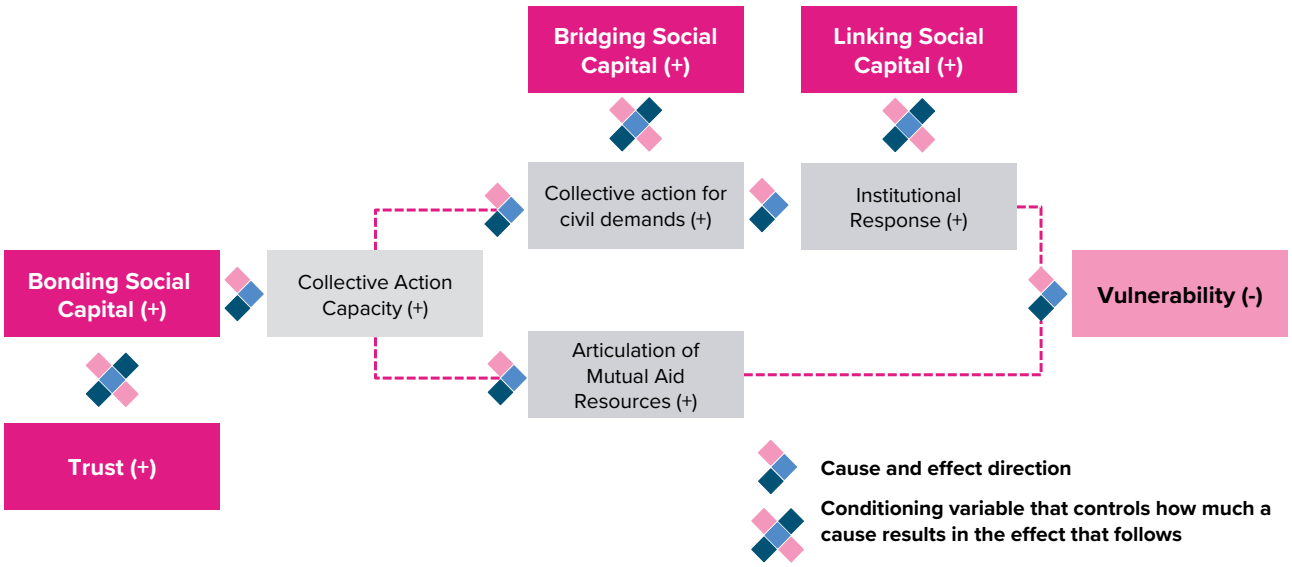
that they had reduced their consumption of goods during the pandemic, and 27 percent stated that they ran out of food due to a lack of money and resources.[8] The subsequent policy response included emergency subsidies that reached more than a million vulnerable people, mainly informal workers, excluding those who were already registered in other pre-existing social protection programs.[9]

On the other hand, vulnerable communities mobilized their interpersonal networks to cover the pandemic's economic and social costs through collective action and mutual aid, particularly to address the peak of household food insecurity. Community soup kitchens appeared throughout the country as a common grassroots response. Our work at the UNDP Accelerator Lab in Paraguay mapped these initiatives[10] and inspired a research project focused on whether and how social capital networks affected access to aid and economic vulnerability during the pandemic.

Conceptualizing Social Capital, Trust and Vulnerability

The study aligns closely with UNDP's social cohesion framework,[11] focusing on two analytical categories: horizontal social cohesion (bonding, bridging and linking social capital) and vertical cohesion (trust between government and society). We measure the three types of social capital[12] as well as interpersonal and institutional trust of individual residents of vulnerable territories in Paraguay.[13,14,15] To conceptualize and measure vulnerability, we adopt a framework that emphasizes social exclusion[16] and multi-dimensional poverty.[17] Finally, we conceptualize collective action in terms of individuals' knowledge of and participation in the collective community responses organized in response to the pandemic.[18] This conceptual framework, combined with preliminary empirical observations, exploratory data analysis of secondary sources, and literature review, inspired a set of hypotheses that conceptualize trust as a factor that conditions individuals' capacity to mobilize their interpersonal ties with members of their own social groups (bonding ties) to achieve collective action in their communities. In turn, we propose that the social ties that bridge different social groups promote collective action in the form of community demands for public aid. We further propose that when community members have social ties to individuals in positions of institutional authority (linking ties), community demands produce a greater institutional response. Finally, a positive institutional response decreases vulnerability (see Figure 1). Alternatively, capacity for collective action can promote the articulation of resources for mutual aid, directly lowering vulnerability.

Figure 1: The causal chain of social capital, trust, collective action and vulnerability

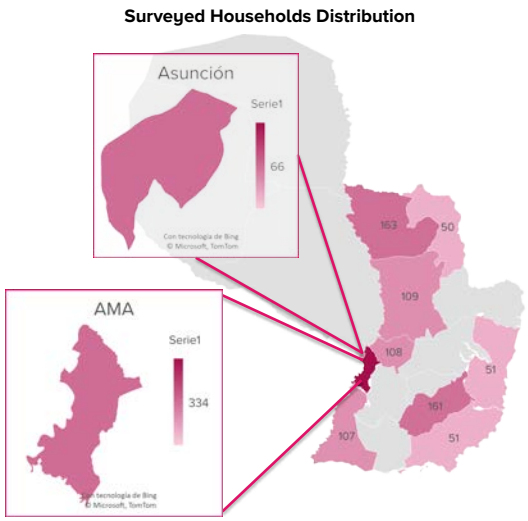


Methods and Data

Between December 2020 and January 2021, we conducted an original survey among a representative sample of Paraguay's population (see Table 1), focused on households located in areas with higher poverty levels in its more densely populated Eastern Region.

Table 1: Distribution of the sample according to strata, substrata, districts and area (number of households)

Layer	Sub-layer	Area		Total
		Urban	Rural	
Asunción Metropolitan Area	Asunción	66	0	**66**
	Central Department	293	41	**334**
Rest of the Eastern Region	Large conglomerates	134	18	**152**
	Medium-sized Districts	133	191	**324**
	Small Districts	133	191	**324**
	Total	**759**	**441**	**1200**



The surveyed population is made up of 47.9 percent men and 52.1 percent women aged 18 years and over. On average, they are 42 years old, and more than half of the respondents (60.3 percent) reported having six years of schooling or less.

Figure 2: Modules of the survey

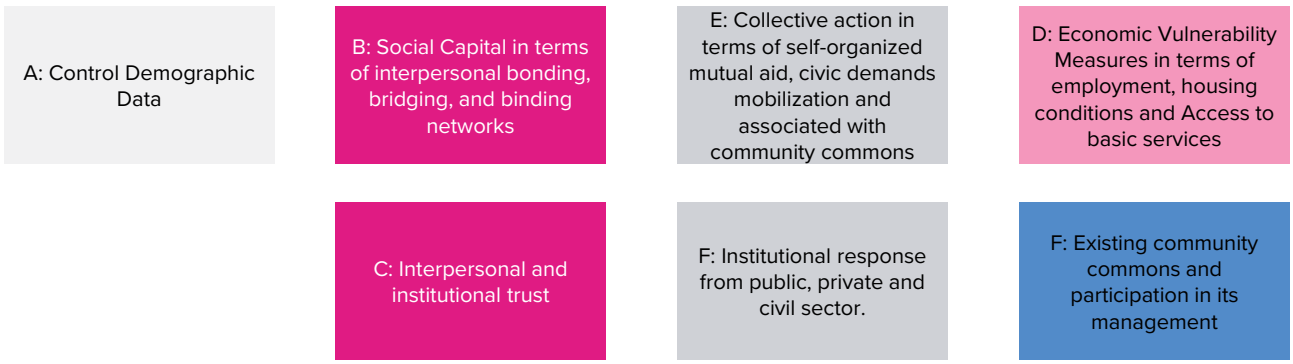


Figure 2 shows the data collected in each module of the survey, designed to measure the variables of our hypothesis. Using these data, we operationalized our variables as indexes created by summing the responses to specific survey questions (Figure 2). We further aggregate these scores to calculate territorial indexes and to compare their values for different subsets of the population. Table 2 shows the range for each of the calculated indexes.[19]

Table 2: Score ranges (all measurements related to the pandemic)

Indexes	Min.	Max.	Indexes	Min.	Max.
Bonding social capital: measures interactions, trustworthy relationships and size of interpersonal networks of individuals with respect to **similar** people in terms of religion, gender, ethnicity, socioeconomic status, etc.	0	26	**Collective action for civic demands:** describes participation of individuals in actions taken by their communities to make civil demands to the government (e.g., demonstrations and protests)	0	3
Bridging social capital: measures interactions, trustworthy relationships and size of interpersonal networks of individuals with respect to **different** people in terms of religion, gender, ethnicity, socioeconomic status, etc.	0	32	**Access to community commons:** measures access that individuals have to community commons, such as producer committees, water sanitation boards, etc.	0	19
Linking social capital: measures interactions of individuals with people in power positions (e.g., party leaders) and the influence of the latter in the community.	0	51	**Public institutional response:** refers to the help received by the individuals from public institutions (e.g., subsidies).	0	10
Interpersonal trust: measures the level of trust of individuals in other people.	-6	6	**Institutional trust:** measures the level of trust of individuals in institutions during the pandemic.	-18	18
Civil institutional response: refers to the help received by the individuals from civil sectors.	0	1	**Private institutional response:** refers to the help received by the individuals from private sectors during the outbreak of COVID-19.	0	1
Collective action for mutual aid: measures participation of individuals in self-organized actions by the community to address needs or problems (e.g., community soup kitchen).	0	3	**Vulnerability:** describes the level of vulnerability of individuals in terms of their housing conditions (access to quality drinking water, waste disposal) and their employment situation during the pandemic.	0	16.21
Collective action linked to community commons: the level of participation of the individuals in the use of management of community commons in the pandemic (for example, participation in the coordination of producer committees).				0	18

Results

Figure 3 reports the results of the main indexes calculated for this analysis. First, we observe a low degree of vulnerability on average in the period corresponding to the pandemic (a total of 4.61 out of a maximum possible score of 16.21). However, rural areas present higher levels of vulnerability compared to urban areas (t=-14.94; *p-value*=0.000).

First, the negative values of the trust indexes (Figure 3c) indicate the presence of distrust in the territories toward other members of the community and also toward formal institutions (government, civil organizations, political parties, private companies, the church and the police). This distrust is significantly higher in urban zones compared to rural zones (t=-5.76 and t=-7.26 for interpersonal and institutional trust, respectively; *p*=0.000 in both cases), meaning that individuals in rural areas tend to trust more in their peers and institutions.

Second, the average social capital score is well below the theoretical maximum score of each index. This result is difficult to interpret without comparative benchmarks. However, it suggests that the overall capacity for collective action during the pandemic has been low.

This result differs slightly by region. Bonding and linking social capital are significantly stronger in rural areas than in urban areas (t=-2.87; *p-value*=0.004),

meaning that interpersonal networks in rural areas tend to bond individuals to others that share their (professional, class, religious, gender or political) identity and to individuals in positions of institutional authority more than is the case for individuals in urban areas.

The incidence of collective action also demonstrated a regionally distinctive pattern. Collective action linked to the use of community commons/ collective assets is higher in rural areas (t=-7.79, *p-value*=0.000), which is also associated with the greater access to community commons/collective assets reported by rural zones (Figure 3e). On the other hand, collective action for mutual aid and for civic demands is significantly higher in urban areas (at 5 percent and 10 percent levels, respectively).

Finally, we can observe low levels of institutional response to the COVID-19 outbreak that do not vary substantially by area but that slightly favor rural areas (significant at the 1 percent level).

Figure 3: Indexes of social capital, trust, collective action, access to commons and vulnerability during the COVID-19 outbreak (December-January 2020, sample averages)

Analysis

On average, trust, collective action and individual-report institutional response to the pandemic register low values in Paraguay, as does economic vulnerability. However, understanding and improving the policy response to the pandemic requires analyzing how this varies among individuals. How are trust, social capital, collective action and vulnerability interrelated?

Table 3: Results of the two-way correlations conducted for the analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Bonding SC	1.00												
(2) Bridging SC	0.52*	1.00											
(3) Linking SC	0.24*	0.38*	1.00										
(4) Interpersonal trust	0.13*	0.12*	0.12*	1.00									
(5) Institutional trust	0.07*	-0.01	0.06*	0.32*	1.00								
(6) Vulnerability	-0.07*	-0.19*	-0.12*	0.01	0.10*	1.00							
(7) Collective action for mutual aid	0.17*	0.19*	0.33*	0.13*	0.00	-0.13*	1.00						
(8) Collective action linked to community commons	0.09*	0.09*	0.21*	0.13*	0.10*	0.03	0.16*	1.00					
(9) Collective action for civil demands	0.05	0.08*	0.17*	0.06*	0.04	-0.07*	0.26*	0.16*	1.00				
(10) Access to community commons	0.14*	0.11*	0.18*	0.08*	0.07*	-0.10*	0.16*	0.37*	0.10*	1.00			
(11) Public institutional response	0.00	-0.07*	0.01	0.10*	0.16*	0.23*	-0.02	0.07*	-0.03	-0.01	1.00		
(12) Private institutional response	0.01	0.06*	0.02	-0.00	0.01	-0.06*	0.09*	0.00	0.10*	0.03	0.02	1.00	
(13) Civil institutional response	0.02	0.06*	0.04	-0.01	0.00	-0.03	0.08*	0.02	0.09*	0.01	-0.00	0.24*	1.00

*Note: * correlation coefficients significant at the 5% level*

Two-way correlations and standard t-tests conducted using the survey data provide preliminary support to the hypotheses represented in the causal diagram (Figure 1). By interpreting the pattern of statistically significant correlations ($p<0.05$) observed in the data (Table 3), we observe the following relationships:

1. **Different types of isolation reinforce one another.** Individuals with larger networks of people who share similar identities also tend to have larger social networks of people who belong to different class, racial, religious, professional, age and gender groups. Those who are isolated tend to be isolated in both senses. This is observable in the large correlation (r=0.52) between bonding and bridging social capital.

2. **More diverse social networks mean more political access.** Individuals with greater bridging social capital tend to have more linking social capital. This means that diverse social networks tend to give individuals greater social access to people in positions of institutional authority. There is a medium-sized correlation (r=0.38) between bridging social capital and linking social capital, and bonding social capital is only slightly correlated (r=0.24) with linking social capital.

3. **Trust and social interaction move together.** Individuals with more social capital ties are more likely to trust others and, conversely, individuals who trust others are slightly more likely to have more social capital ties. All three types of social capital are slightly correlated with interpersonal trust. This suggests that

interpersonal trust both *resides in* and is *built in the context* of interpersonal relationships.

4. **Social interaction is linked to trust in individuals but not in institutions.** Individuals who trust other individuals are also more likely to have trust in institutions and vice versa, but institutional trust is not related to the size or composition of an individual's social capital network. There is a medium-sized correlation (r=0.32) between interpersonal and institutional trust. The absence of a correlation between social capital ties and trust in institutions is an important finding. This suggests that although institutional trust resides in interpersonal relationships, it *is built outside of them*, for example through experiences with public policy and programmes. This inference is also supported by the fact that individuals who received institutional aid are more likely to express trust in institutions (r=0.16).

5. **Political access and collective action are linked.** Individuals with interpersonal relationships with other individuals in positions of institutional authority are more likely to engage in collective action for mutual aid and vice versa. There is a medium-sized correlation (r=0.33) between these two variables. A possible interpretation is that community work brings activists into contact with institutional authorities. Alternatively, relationships with institutional authorities may serve as a form of social capital and political asset for community activists to mobilize collective action from their peers and followers. Future qualitative research could distinguish between these two scenarios as well as analyze the quality and impact of collective action.

6. **Aid targeted the vulnerable.** Individuals in situations of economic vulnerability were more likely to receive the kinds of institutional aid that were measured by the survey, and state institutional responses were more likely to have been given to vulnerable individuals. These variables share a small-medium correlation (r=0.23). This suggests that while social capital networks have significant policy relevance, they do not alone determine who receives public assistance. Programmatic policy criteria, such as economic vulnerability, also influence who receives aid.

7. **Community commons and resiliency are linked.** Individuals with access to community commons or collective assets are slightly less likely to be experiencing economic vulnerability, and individuals not experiencing economic vulnerability are more likely to have access to community collective assets. These variables shared a small negative correlation (r=-0.10).

8. **Collective action and resiliency are linked.** Individuals who engage in community collective action are slightly less likely to be in situations of economic vulnerability, and non-vulnerable individuals are more likely to engage in community collective action. There is a small negative correlation between these variables (r=-0.13).

Implications for Policy

What do these data tell us about development pathways and the recovery from the COVID-19 pandemic?

At the broadest level, the study has shown that social capital (understood as the size and diversity of individual interpersonal networks), trust in individuals and institutions, and collective action are all linked and are inversely related to vulnerability. This suggests, provisionally, that interventions that increase social capital, trust or collective action may decrease vulnerability. Conversely, we may interpret this as evidence that actions that decrease vulnerability can increase trust, collective action and social capital.

How do we know which is the chicken and which is the egg? Future analysis will provide more evidence; however, this preliminary study suggests that the *production and maintenance of community commons*, such as community gardens, group-oriented digital communication platforms, collectively owned and managed infrastructure, community water and sanitation systems, and community sports and recreation infrastructure may be a vehicle for the construction of social capital and the reduction of economic vulnerability. The social and economic value of these types of infrastructure can, of course, directly lower economic vulnerability. On the other hand, less vulnerable groups are more capable of building and maintaining collective infrastructure. Policy should support deliberate action to remove barriers that may cause those already at the margins to be further left out.

Still, collective spaces also provide venues for community interaction between individuals that belong to similar and diverse social groups. The construction and maintenance of these spaces rely on trust among community members and

quite often requires interactions with institutions. Positive experiences in the community commons can build trust among neighbors and with institutions; negative experiences can destroy it. The empirical results suggest that development interventions to support the production and governance of collective assets can serve as sources of social capital and 'schools of collective action' that increase social cohesion and decrease vulnerability.[20]

Endnotes

1 Claudia V. Montanía, Ph.D., is currently data analyst at the UNDP Accelerator Lab in Paraguay, email: claudia.montania@undp.org; Cristhian Parra, Ph.D., is head of Experimentation at the UNDP Accelerator Lab in Paraguay, email: cristhian.parra@undp.org; Gustavo Setrini, Ph.D., is head of Solutions Mapping at the UNDP Accelerator Lab in Paraguay, email: gustavo.setrini@undp.org; Mónica Ríos, MBA is head of Exploration at the UNDP Accelerator Lab in Paraguay, email: monica.rios@undp.org.

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7 According to the latest Permanent Household Survey conducted by the National Statistics Institute, the rates of informal occupation reach 64.3 percent of men and 66.2 percent of women aged 15 and above in 2020. The numbers go as high as 72 percent for men and 82.1 percent for women in rural areas, reaching 87.3 percent overall in the construction sector, followed by 70.5 percent in commerce, restaurants and hotels.

8 World Bank, 'COVID-19 High-Frequency Monitoring Dashboard', The World Bank Group, Washington, D.C., 2021. https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard

9 Two official emergency subsidy programmes were launched during the pandemic: (1) Ñangareko targeted vulnerable people and informal workers, first with food kits, later with a one-time monetary transfer; (2) Pytyvõ targeted informal workers, both self-employed and those dependent on SMEs but without access to social security, with two-time monetary transfers. In both cases, the amount represented between 20 percent and 25 percent of the official minimum wage. They both targeted essentially the same population and excluded those who were already registered on other social protection programmes. People who received aid from Ñangareko received only the second payment from Pytyvõ if they registered for this programme as well. A more detailed analysis of these programmes can be found in the report 'Promoting Socio-economic Recovery in Paraguay Report: Economic Reactivation Strategies during COVID-19', prepared by UNDP Paraguay. Official data about these programmes is available at https://www.gabinetesocial.gov.py/sitio/e_heka.php.

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19 To check the internal consistency of indexes for this analysis, Cronbach's alpha was calculated. This coefficient evaluates whether items used to form each index are measuring the same concept or construct. The following recommendations are suggested for evaluating the values of Cronbach's alpha coefficients: Alpha coefficient >0.9 to 0.95 is excellent; Alpha coefficient >0.8 is good; Alpha coefficient >0.7 is acceptable, Alpha coefficient >0.6 is questionable; Alpha coefficient >0.5 is poor; Alpha coefficient <0.5 is unacceptable. Within a standard exploratory analysis, an internal consistency value of around 0.7 is an adequate minimum acceptable level. However, in the early phases of research or exploratory studies, an internal consistency value of 0.6 or 0.5 may be sufficient. In the case study, we obtain an acceptable coefficient for all the indices except for vulnerability, interpersonal trust, and institutional public response. However, this result may be associated with the fact that the questions considered in these cases measure more than one dimension, which could bias the results and interpretation of the Cronbach's alpha. We will report the full method in future publications.

20 The Proceedings of the National Academy of Sciences of the United States recently published a special issue reviewing evidence from random control trial studies about policy approaches to 'Sustaining the Commons', which could serve as a starting point for designing such development interventions. https://www.pnas.org/cc/sustaining-the-commons-special-feature