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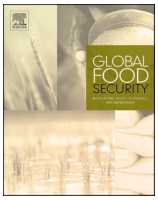

The importance of assets for coping with COVID-19 and other shocks

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ABSTRACT

Rural households in Chile, Colombia, Ecuador, Guatemala and Mexico experienced a series of shocks beginning in 2020, including the COVID-19 pandemic, unemployment, loss of income, an abrupt increase in food prices, hurricanes, a public safety crisis and political instability. Through household surveys in 10 territories in those countries, along with interviews and focus groups, we studied the association between the context created by those shocks, food security and households' coping strategies. The main finding is that the relative level of wealth, measured by households' asset endowment, is the factor that most influences both food insecurity and the strategies households choose for coping with shocks.

1. Introduction

"The light at the end of the tunnel was various trains, coming head on." Those were the words of a Colombian rural leader referring to the series of shocks experienced by communities in a short period of time. This article explores the consequences of these successive food security and nutrition (FSN) crises for the inhabitants of rural and urban territories in Latin America and the Caribbean (LAC) since the beginning of the COVID-19 pandemic.

Although LAC contains 8.4% of the world's population, it accounted for 15% of confirmed COVID-19 cases and 28% of confirmed deaths as of early 2022 (PAHO/WHO, 2022). In 2020, regional per-capita GDP fell by 7.7%, the largest annual drop in 120 years of statistical history in the region (ECLAC, 2021). As a result, extreme poverty increased by 23% in 2021 compared to 2019. The increase in rural poverty was greater among women than men, so much so that the incidence of extreme poverty decreased for rural men but increased among rural women between 2019 and 2020 (CEPALStat, 2023a).

The severity of the impact of the COVID-19 pandemic in LAC is explained in part because it found a population weakened by economic stagnation and the social deterioration experienced in the previous decade. Average annual per-capita economic growth in the region between the crisis of 2007 and the end of 2019 was a mediocre 0.9% in constant dollar prices (CEPALStat, 2023b). The prevalence of undernourishment and poverty have been increasing since 2014 (FAO et al., 2023a, 2023b; CEPALStat, 2023c).

Béné et al. (2021) documented 22 impact pathways of COVID-19 in food systems in 22 countries. The most frequent was loss of a job and/or decrease in income, which led to a degradation of dietary options and diversity. Various authors (Devereux et al., 2020; Laborde et al., 2021; Swinnen and Vos, 2021) confirm that the most serious threat to food security as a result of the first waves of COVID-19 was the reduced economic capacity to access food. Bundervoet et al. (2022) found that in late 2020, slightly more than one-third of people surveyed in 31 countries were no longer working, and nearly two-thirds reported decreased income; according to Egger et al. (2021), nearly seven out of every 10 households in nine developing countries experienced a drop in income. The increase in food prices since mid-2020 and, more strongly, since October 2021 aggravated economic access to food (FAO et al., 2022, 2023a, 2023b).

According to Bundervoet et al. (2022), the pandemic's effects were regressive, disproportionately affecting women, young people, workers with little education and the self-employed. The same authors report that the greatest job loss in low- and middle-income countries occurred

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in Latin America and the Caribbean, where half the people stopped working temporarily or permanently. Other authors also report gender gaps affecting women in the impacts on employment and income, as reported by Mamgain (2021) in India. Households with more children also showed greater impacts on food security (Fang et al., 2022); besides the difficulties that a larger number of family members could imply, these trends could be linked to greater pressure on women to stop working and devote more time to childcare because schools closed (Bundervoet et al., 2022). Meanwhile, Josephson et al. (2021) found that in various countries in Africa, the incidence of food security due to the pandemic was greater among people who were more concerned about the financial threat the pandemic represented.

In Latin America and the Caribbean, severe food insecurity increased from 9.7% to 13.9% between 2019 and 2021, and among women from 10.4% to 15.8% (FAO et al., 2023b). The region's households also decreased consumption of nutritious foods and increased consumption of canned, packaged and non-perishable products, not only because of their lower cost, but also because they can be stored longer, an important factor when mobility was curtailed (FAO & ECLAC, 2020). In Mexico, Gaitán-Rossi et al. (2021) found an increase in food insecurity during the first stage of the pandemic, especially in households with children, and with appreciable differences between households at higher and lower socioeconomic levels.[1] Various countries in the region faced simultaneous shocks between 2020 and 2022, which had synergistic effects on food security (Lara-Arévalo et al., 2023); in Central America, for example, the COVID-19 shock was aggravated by the arrival in late 2020 of two category 4 hurricanes that affected more than 7 million people (IFRC, 2022). In rural areas of Ceballos et al., (2021) found a loss of income because of reductions in remittances received and in non-farm and farm income, although the latter were affected in fewer households. This led to an increase in food insecurity because of reduced food consumption, especially of the most nutritious foods.

Regarding coping mechanisms, the literature reports, among other behaviors, indebtedness and sale of assets (Ragasa et al., 2021), dissaving (Hirvonen et al., 2021a) and the return of family members from the city to their rural communities of origin (Fort et al., 2021). Some households increased their access to public programs (Ceballos et al., 2021).

Nevertheless, various studies confirm that in many cases, these strategies were not sufficient to compensate the loss of income, and households were forced to reduce food consumption, especially of the costliest foods or those requiring cash income (Ceballos et al., 2021; FAO & ECLAC, 2020; Hirvonen et al., 2021b; Laborde et al., 2021; Swinnen and Vos, 2021). The situation of self-employed and/or informal workers, without access to unemployment insurance and other social protection mechanisms characteristic of formal employment, further weakened the resilience of those people and their households, especially in rural areas (Devereux et al., 2020).

In summary, the literature highlights a significant impact of the COVID-19 pandemic on food security and nutrition in many countries in the region and globally. The loss of employment and income combined with the rise in food prices, exacerbated food insecurity which had been rising globally in the previous years. In Latin America this was aggravated by the economic slowdown prior to the pandemic. The literature identifies coping strategies, which include debt, sale of assets, return of family members to rural communities, in addition to a decrease in the consumption of nutritious foods and an increase in the preference for processed products. Our study explores some of these global trends in the context of ten large territories in Latin America, and contributes to the literature by exploring the specific factors associated with increases in food insecurity and the response capacity of households.

The project that gave rise to this article began in June 2020. It sought to explore the effects and impacts of the COVID-19 pandemic on food security over three years, as the crisis evolved, in 10 territories in five Latin American countries: Colombia, Chile, Ecuador, Guatemala and Mexico. What the investigation ended up capturing, however, was a series of different shocks affecting the same populations. Initially (mainly in 2020 and the beginning of 2021, captured in the first survey, which is described below) in the five countries, the second wave of infections began, with between 22 (Guatemala) and 255 (Colombia) COVID-19 cases a day per million inhabitants (Our World in Data, 2023). That year was characterized by a strong deterioration of economic and social indicators, with a contraction of per-capita GDP in all the countries in the study (World Bank, 2021), as well as an increase in food insecurity, poverty and extreme poverty, and a decrease in the employment rate (ECLAC, 2021). In Guatemala, this survey also captured the effect of two strong hurricanes.

In a second moment (captured in the second survey, described below, especially in late 2022), the shocks were different: the number of daily COVID-19 cases and, above all, deaths from the disease had decreased considerably, health restrictions had been lifted, and economic and employment growth rates were recovering. Nevertheless, annual inflation rates increased significantly (ranging from 6.7% in Guatemala to 11.7% in Chile). The increase in food prices was even greater (between 9% annually in Guatemala and 24.6% in Colombia) (IMF, 2023).[2] In the second stage, in Ecuador, a major political crisis also occurred, related to a considerable increase in violence and public insecurity.

The research questions are: (1) How have prevalences of food insecurity changed in the various territories after a series of shocks? (2) Is there a common pattern of factors associated with food insecurity? (3) What coping strategies did households use most, and how did they vary among territories? (4) What household characteristics are associated with the selection of the various strategies for coping with shocks in the various territories?

2. Methods and data

The study combined quantitative and qualitative methods: the former to study changes in the prevalence of food insecurity and coping strategies among households in the territories, and the latter for an in-depth study of the coping strategies of family farming households.

2.1. Quantitative methods

Two surveys were conducted in each of the five countries, one between November and December 2020 and the other between November 2022 and February 2023. In each country households in two territories were surveyed[3] (Chile, the La Araucanía and Los Lagos regions; Colombia, the departments of Nariño and Huila; Ecuador, the provinces of Guayas and Los Ríos; Guatemala, the departments of Alta Verapaz and Sacatepéquez; Mexico, the states of Puebla and Tabasco). As Table 1 shows, all had a large rural population, significant poverty levels and, in 2020, a strong incidence of COVID-19. The first survey was conducted amid a strong epidemiological, social and economic impact of the COVID-19 pandemic. The second was conducted when the pandemic had eased considerably, but strong inflation affected households and

[1] Still, it is important to note that regardless of the better public support in Chile and Colombia, the association between food security and asset endowment in the territories of these countries was found similar to the other territories in the study. In addition, even in countries with better social protection, such as Chile, we are studying some of the territories with the highest levels of poverty (e.g. Araucanía).

[2] Inflation rates in Ecuador were lower than in the other countries, because of its dollarized economy. Nevertheless, they also increased significantly compared to the period before the crisis.

[3] Surveys were not conducted in medium-size or large cities in the indicated territories.

Table 1
Characteristics of the territories studied.

Country	Territory	Total population	Rural population	Poverty	Indigenous population	Age	Female head of household	Household size
Chile[a]	La Araucanía	957,224	29.1%	11.6%	33.6%	36.2	40.0%	3
	Los Lagos	828,708	26.4%	7.0%	27.6%	35.8	39.0%	2.9
Ecuador[b]	Guayas	3,645,483	15.5%	20.3%	1.3%	32	40.3%	3.32
	Los Ríos	778,115	46.6%	39.5%	0.6%	31	39.1%	3.18
Colombia[c]	Huila	1,009,548	31.9%	57.7%	1.2%	–	34.8%	3.13
	Nariño	1,335,521	39.3%	61.8%	15.4%	–	39.8%	2.95
Guatemala[d]	Sacatepéquez	330,469	11.5%	41.1%	40.4%	28.23	21.3%	4.29
	Alta Verapaz	1,215,038	68.7%	83.1%	93.1%	23.55	14.6%	5.35
Mexico[e]	Puebla	6,583,278	26.5%	62.4%	9.9%	28	31.7%	3.8
	Tabasco	2,402,598	41.5%	54.5%	4.0%	29	31.4%	3.6

Notes.
[a] For the total, rural and Indigenous population variables and Age, Female head of household and Household size variables, the INE Census (2017) is used. For the poverty variable, CASEN, MIDESO (2022) is used.
[b] For the total, rural and Indigenous population variables and Age, Female head of household and Household size variables, the INEC Population and Housing Census (2010) is used. For the poverty variable, the INEC Survey of Living Conditions (2014) is used.
[c] For the population variables (total, rural, and indigenous), female head of household, and household size were sourced from the DANE Population and Housing Census (2018). It's important to note that the variable for age by territory was not processed. For the poverty variable, updated data on monetary poverty and extreme monetary poverty from the National Household Budget Survey (ENPH) 2016–2017, as reported by DANE (2021), are used.
[d] For the total, rural and Indigenous population variables and Age, Female head of household and Household size variables, the INE Population and Housing Census (2018) is used. For the poverty variable, the INE National Survey of Living Conditions (2014) is used.
[e] For the total, rural and Indigenous population variables and Age, Female head of household and Household size variables, the INEGI Population and Housing Census (2020) is used. For the poverty variable, CONEVAL (2020) data are used.

constrained the economic and social recovery.

The surveys were conducted by telephone with samples of households with telephone numbers (mainly mobile) in each territory. As discussed by Swinnen and Vos (2021), there are limitations associated with telephone surveys, including in sampling and representativeness given the characteristics of the survey companies' telephone databases. Also, attrition experienced by respondents can lead to high dropout rates, which reduces the amount of detailed information collected by each survey; for this reason, telephone surveys must be short. Self-reporting through recall questions introduces the possibility of additional errors in the results, and, given the severe time limitations, control and confirmation questions cannot be included. For the same reasons, issues that would normally require a large number of questions to obtain good quality data (e.g., composition of household income or consumption), are normally avoided. These difficulties, while not invalidating the value of telephone surveys, underscore the importance of critically considering their limitations when interpreting results (Swinnen and Vos, 2021).

The survey firms' telephone number databases cover a large percentage of the population, ranging from at least 60% in Chile to 92% in Mexico. The sample size was determined based on the population over age 18 in first-tier rural, rural-urban and urban administrative jurisdictions (municipalities, districts, cantons, communes) in the territory.[4] In all countries, the samples were determined randomly. Sample size per territory in the first survey varied from a minimum of 454 households to a maximum of 778, with a mean of 622. In the second survey, the minimum number of households surveyed per territory was 449 and the maximum was 656, with a mean of 511. In all, 11,328 households were surveyed as part of the project.[5] The margin of error and confidence intervals were: Chile, 4.6% and 95%; Colombia, 3.2% and 95%; Ecuador, 3.8% and 96%; Guatemala, 3.3% and 95%; Mexico, 3.6% and 95%. The margin of error for each survey round is the one that results for the desired sample size, when considering the maximum variance of dichotomous indicators.

The analyses conducted with these data include determination of food insecurity levels, household strategies for coping with shocks, and household characteristics associated with both phenomena.

To determine the prevalence of food insecurity, the Food Insecurity Experience Scale (FIES) developed by FAO (Ballard et al., 2013; FAO, 2016) was used. In the household surveys, eight standard questions from the FIES method were asked, with a reference period of the last 3 months prior to the survey.[6] To facilitate a descriptive comparison of territories and survey moments, the procedure for matching scales to the global FIES standard was used (FIES-GRS, FAO, 2023) to obtain the prevalence of moderate or severe food insecurity and severe food insecurity (Figs. 1 and 2 below).

Based on the FIES responses, to identify the relationship between household characteristics and levels of food security or insecurity, a food security typology was constructed for each household, following Smith et al. (2017a, 2017b), as follows: 1) food security, if the household responded no to the eight FIES raw scores; 2) mild food insecurity, if the household responded yes to one or two of the raw scores; 3) moderate food insecurity, if the household responded yes to between three and six of the raw scores; and 4) severe food insecurity, if the household responded yes to seven or eight raw scores. For the analysis, non-linear probability models, particularly logistic models, were used. Specifically, for each of the k food security categories, a model like the following is assumed:

$$p_i = P\left(y_i^k = 1\right) = F(X_i\beta) \quad (1)$$

where $y_i^k = 1$ if the household is in the kth food security category, X_i is a vector of observable household characteristics, and F indicates the logistic distribution function. The model's parameters are estimated using maximum likelihood. Standard errors are estimated using a variance

[4] The smallest units in each of the 10 territories (municipalities, parishes or communes) are defined as rural if the rural population exceeds 50% of the total population; as urban if the rural population is less than or equal to 15% of the total population; and as urban-rural when the percentage of rural population falls between the urban and rural categories (OECD, 2006).

[5] The percentage of contacted households who agreed to be interviewed was around 11.9% and 12.9% in Chile (surveys 1 and 2, respectively), 19.7% and 17% in Ecuador, 54.5% and 29.9% in Mexico, and 5% and 5% in Guatemala.

[6] As per de standard FIES method, the questions are (FAO, 2023): During the last 3 months, was there a time when, because of lack of money or other resources: 1. You were worried you would not have enough food to eat? 2. You were unable to eat healthy and nutritious food? 3. You ate only a few kinds of foods? 4. You had to skip a meal? 5. You ate less than you thought you should? 6. Your household ran out of food? 7. You were hungry but did not eat? 8. You went without eating for a whole day?.

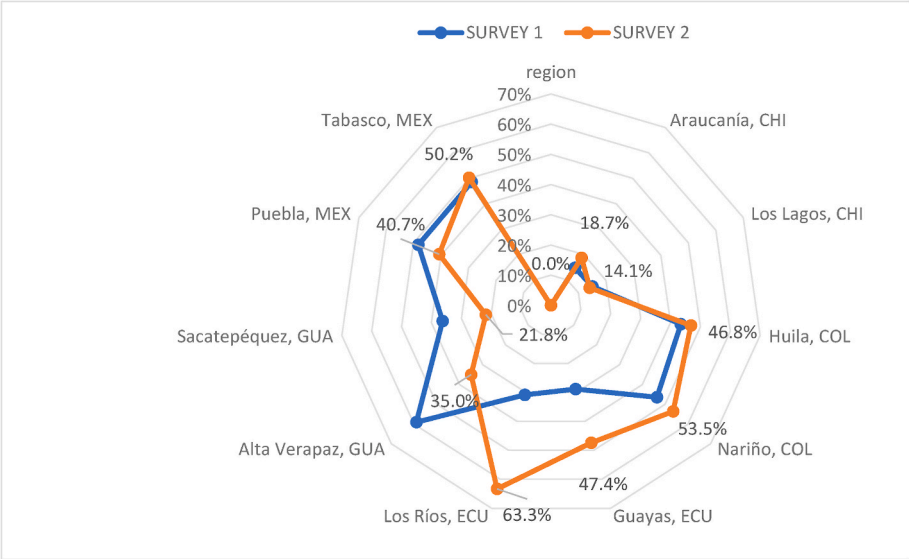

Fig. 1. Prevalence of moderate and severe food insecurity, surveys 1 and 2.

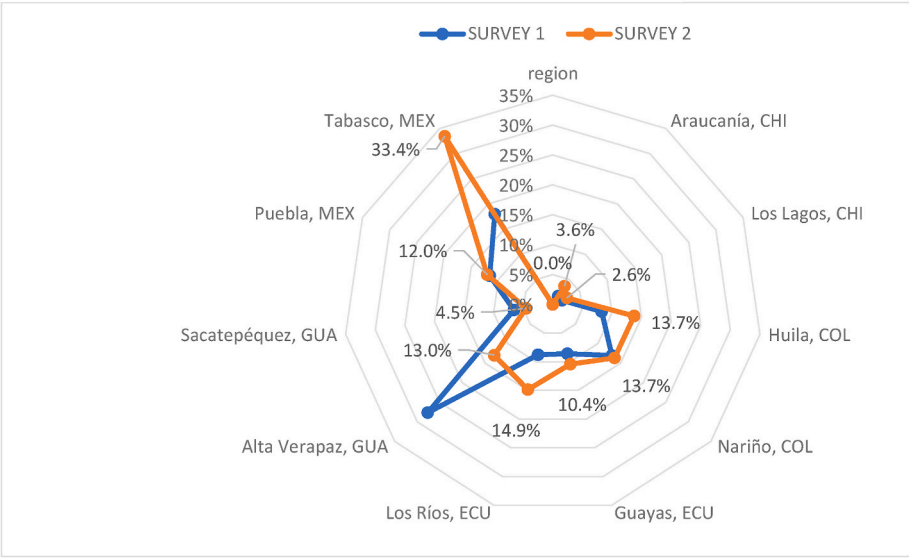

Fig. 2. Prevalence of severe food insecurity, surveys 1 and 2.

matrix robust to heteroskedasticity.

Following the literature, several household characteristics that could have influenced the effects of shocks on their food security levels were identified: belonging to an Indigenous population, household composition (household size, proportion of household members under age 5, proportion of household members over age 65), sex of the head of household, household participation in public cash/asset transfer programs, household asset endowment (as a proxy for relative wealth level), and type of territory in which the household is located (rural, rural-urban, urban). As mentioned above, our econometric analysis cannot reveal causal relationships. For example, the indicator for programs' beneficiaries is likely endogenous as it affects income and income is simultaneously determined with food security; thus, the estimated coefficient should be interpreted as a correlation.

Asset endowment is represented by a wealth index, which is based on the first component of a principal components analysis (McKenzie, 2005). Assets considered in the index are potable water, bathroom and internet in the home, as well as possession of a motor vehicle, motorcycle, computer, television, microwave, refrigerator and washing machine. This wealth index has been used in the USAID/Vanderbilt University *Americas Barometer* (Córdova, 2009), among other studies. The advantage of using assets instead of income is the higher reliability of the data gathered on assets compared to that gathered on income (less missing dada and less over or under reporting), particularly when the data is collected through telephone surveys (Córdova, 2009). The link between assets and food security is through the close relationship that exists between assets and income.

Possible household coping strategies in the face of these crises included dietary modification, either by reducing consumption of fresh foods (vegetables, meats) or increasing processed food; dissaving, including not only spending savings but also selling assets; reducing spending on human capital, such as education and health; and migration.

Association between household characteristics and each of the selected strategies was also analyzed with logistic models. A Poisson model was used to determine the relationship between household characteristics and the number of strategies used.

2.2. Qualitative methods

Qualitative information was gathered in four rounds in each territory. The first and second rounds were conducted between May and December 2021, and the third and fourth between March and December 2022. The fieldwork focused on family farmers, women and men, mainly members of an association or who participated in public programs targeting family farming. The reason for this choice is that the project that funded this research was approved as part of a call to look at the impacts of COVID-19 on small-scale agriculture. The participants have constraints of assets, location or some other type that limit their participation in markets (Berdegué and Fuentealba, 2011).

A total of 75 mixed focus groups and 169 semi-interviews were conducted, mainly with women, to better understand the pandemic's differentiated gender effects, at the level of individuals as well as between male- and -female headed households. For each round, common methodological steps were followed in all countries and territories.

The analyses conducted with these data included identification of family farming household coping strategies in the face of shocks.

3. Results

3.1. Household characteristics

Table 2 summarizes the main household characteristics. The person answering the survey was a woman in 41%–66% of the cases in the various samples. Average ages of those surveyed were between 35 and 47, except in the Chilean territories (ages 57 and 68). The person interviewed self-identified as Indigenous in between 1% and 76% of the cases; the two territories in Guatemala and Mexico, along with Nariño in Colombia, had the highest rates of Indigenous presence.

Women were heads of households in 31%–57% of the cases. On average, households consisted of between three and six people. The average proportion of children under 5 in households was between 3% and 16%, and the proportion of adults over age 65 was between 7% and 15%, except in the Chilean territories, where it was higher.

The rural population was more significant in Alta Verapaz and Nariño. In Sacatepéquez, there were no interviewees in purely rural areas, because the department is part of the periphery of Guatemala City. In Tabasco and Puebla, the samples were centered in rural-urban areas because of the greater proportion of that type of population in those Mexican states.

3.2. Prevalence of food insecurity

Figs. 1 and 2 summarize prevalence patterns of food insecurity. Most notable are the marked differences in levels of food security among the 10 territories and the different trends of change between the end of 2020 (first survey) and beginning of 2023 (second survey). Overall, the Chilean territories had the lowest prevalence of food insecurity. In all territories in the other four countries (except Sacatepéquez, in round 2), the prevalence of moderate or severe food insecurity exceeded 28%, while the prevalence of severe food insecurity ranged from 4.5% in Sacatepéquez in round 1 to33.4% in Tabasco in round 2.

Moderate or severe food insecurity increased between round 1 and round 2 in the Colombian territories and, more drastically, in Ecuador, while it decreased in the territories in Guatemala and Mexico.

Severe insecurity increased between rounds 1 and 2 in the territories in Chile, Colombia, Ecuador and Mexico. In Alta Verapaz, on the contrary, there was a decrease in severe food insecurity, from 27.7% to 13%.

In Guatemala, changes in the levels of food insecurity can be explained in part by the influence of hurricanes Eta and Iota in the first survey, added to the effects of the pandemic. In Ecuador, both types of food insecurity increased in the second round in both territories, although it was more pronounced in Los Ríos. These results may be related to the worsening of the economic and social situation (violence and public insecurity), phenomena that were significantly exacerbated by the time of the second survey.

3.3. Household characteristics associated with food insecurity

Table 3 shows the results of the regression analysis that identifies factors associated with the various categories of food insecurity. Appendix 1 shows the same type of analysis and results, but broken down by territory and round, making it possible to appreciate the differences and similarities in the importance of the factors associated with food insecurity.

On average, one additional household member increases the odds of being severely food insecure by 10.4% and 8.8% in rounds 1 and 2, respectively. Analysis by territory and round (Appendix 1) shows a pattern similar to the aggregate result.

We also found that a larger proportion of children under age 5 in the household is associated with a 9% increase in the odds of being severely food insecure in round 1. In the analysis by territory and round (Appendix 1), the results have the same magnitude as in the aggregate analysis; nevertheless, the association between the proportion of children and food security is not statistically significant in Huila, Guayas and Alta Verapaz. A 10% increase in the proportion of adults over age 65

Table 2
Characteristics of surveyed households, aggregate results.

		Chile		Colombia		Ecuador		Guatemala		México	
		(N = 1971)		(N = 1924)		(N = 2476)		(N = 2625)		(N = 2422)	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Female respondent		0.52	0.5	0.6	0.49	0.56	0.5	0.51	0.5	0.57	0.5
Age of respondent		62.53	16.87	46.41	14.76	39.9	14.05	40.49	13.87	41.89	13.85
Indigenous household		0.17	0.38	0.19	0.39	0.02	0.14	0.53	0.5	0.34	0.47
Household size		2.97	1.58	4.06	1.77	3.99	1.76	4.93	2.61	4.54	2.06
Proportion <5 years old		0.03	0.1	0.08	0.14	0.11	0.16	0.12	0.17	0.12	0.18
Proportion >65 years old		0.38	0.37	0.12	0.23	0.1	0.21	0.08	0.16	0.09	0.17
Female head of household		0.42	0.49	0.48	0.5	0.4	0.49	0.39	0.49	0.5	0.5
Programs		0.41	0.49	0.49	0.5	0.14	0.35	0.28	0.45	0.33	0.47
		N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
Assets	1 (Poorer)	493	25	482	25.1	620	25	657	25	606	25
	2	493	25	481	25	619	25	657	25	606	25
	3	493	25	481	25	619	25	656	25	606	25
	4 (Wealthier)	492	25	480	24.9	618	25	655	25	604	24.9
Territory	Urban	735	37.3	380	19.8	740	29.9	1206	45.9	39	1.6
	Rural-urban	720	36.5	579	30.1	852	34.4	425	16.2	2207	91.1
	Rural	516	26.2	965	50.2	884	35.7	994	37.9	176	7.3

Table 3
Factors associated with different levels of food insecurity.

	Round 1				Round 2			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.912***	0.948***	1.032**	1.104***	0.941***	1.020	0.986	1.088***
	(0.016)	(0.016)	(0.014)	(0.019)	(0.018)	(0.020)	(0.018)	(0.024)
Share <5 years.	0.458***	1.153	1.114	1.906***	0.400***	0.926	1.678**	1.370
	(0.099)	(0.251)	(0.211)	(0.444)	(0.093)	(0.228)	(0.364)	(0.346)
Share >65 years.	0.786*	1.016	0.897	2.086***	1.088	0.815	0.852	1.362*
	(0.110)	(0.150)	(0.131)	(0.437)	(0.140)	(0.133)	(0.120)	(0.233)
1 = Female head of HH	0.811***	0.979	1.188***	1.096	0.557***	1.058	1.385***	1.295***
	(0.049)	(0.065)	(0.070)	(0.086)	(0.038)	(0.082)	(0.092)	(0.104)
1 = Indigenous HH	0.656***	0.954	1.158*	1.407***	0.625***	1.006	1.185**	1.628***
	(0.054)	(0.084)	(0.088)	(0.135)	(0.052)	(0.098)	(0.102)	(0.165)
1 = Programs beneficiary	0.812***	1.065	1.298***	0.919	0.748***	1.079	1.185**	1.054
	(0.058)	(0.084)	(0.088)	(0.084)	(0.054)	(0.090)	(0.087)	(0.093)
1 = Assets cat. 2	1.803***	1.164	0.978	0.516***	1.120	1.429***	1.103	0.591***
	(0.171)	(0.110)	(0.076)	(0.048)	(0.103)	(0.159)	(0.100)	(0.060)
1 = Assets cat. 3	3.347***	1.339***	0.664***	0.296***	1.388***	1.462***	1.084	0.460***
	(0.306)	(0.127)	(0.054)	(0.032)	(0.128)	(0.162)	(0.099)	(0.050)
1 = Assets cat. 4	7.968***	1.125	0.325***	0.103***	2.647***	1.579***	0.734***	0.232***
	(0.758)	(0.111)	(0.030)	(0.016)	(0.253)	(0.179)	(0.072)	(0.029)
1 = Rural-Urban	0.925	1.161	0.977	1.010	0.790**	1.175	1.143	0.989
	(0.077)	(0.106)	(0.085)	(0.131)	(0.075)	(0.130)	(0.116)	(0.128)
1 = Rural	0.721***	1.382***	1.017	1.071	0.683***	1.002	1.360***	1.013
	(0.064)	(0.134)	(0.090)	(0.134)	(0.067)	(0.120)	(0.136)	(0.123)
1 = Colombia	0.229***	1.186	1.987***	11.470***	0.271***	0.506***	2.679***	7.539***
	(0.037)	(0.216)	(0.318)	(3.882)	(0.040)	(0.102)	(0.468)	(1.973)
1 = Ecuador	0.242***	2.149***	1.611***	7.724***	0.077***	0.536***	6.710***	7.848***
	(0.037)	(0.349)	(0.249)	(2.595)	(0.013)	(0.106)	(1.143)	(2.064)
1 = Guatemala	0.273***	1.175	1.800***	9.723***	0.500***	1.283	1.679***	3.404***
	(0.046)	(0.227)	(0.299)	(3.357)	(0.075)	(0.236)	(0.301)	(0.939)
1 = Mexico	0.187***	0.941	1.875***	22.332***	0.238***	0.839	2.606***	7.004***
	(0.029)	(0.173)	(0.297)	(7.461)	(0.037)	(0.157)	(0.481)	(1.895)
1 = Araucanía	0.948	1.504**	0.774	1.150	0.946	0.965	1.258	1.179
	(0.133)	(0.246)	(0.125)	(0.473)	(0.136)	(0.174)	(0.237)	(0.367)
1 = Guayas	1.349**	0.999	0.745**	0.971	1.491**	1.673***	0.843	0.671**
	(0.169)	(0.120)	(0.093)	(0.164)	(0.261)	(0.322)	(0.110)	(0.107)
1 = Huila	1.134	1.028	1.012	0.899	0.770*	1.480*	1.061	1.167
	(0.175)	(0.182)	(0.146)	(0.172)	(0.119)	(0.299)	(0.157)	(0.180)
1 = Puebla	1.410***	1.401**	1.056	0.412***	1.577***	1.353*	0.848	0.491***
	(0.175)	(0.209)	(0.124)	(0.059)	(0.236)	(0.230)	(0.126)	(0.085)
1 = Sacatepéquez	0.877	1.765***	0.970	0.785	1.289*	1.143	0.911	0.369***
	(0.131)	(0.293)	(0.134)	(0.143)	(0.190)	(0.192)	(0.149)	(0.082)
Constant	1.474**	0.151***	0.269***	0.021***	2.919***	0.138***	0.115***	0.046***
	(0.238)	(0.028)	(0.045)	(0.007)	(0.434)	(0.025)	(0.021)	(0.013)
Num.Obs.	6219	6219	6219	6219	5109	5109	5109	5109

Notes: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors in parentheses.
Coefficients are reported as odds ratios. For example, the 10.4% change in the odds ratio of being severely food insecure in round 1 in the face of a change in household size results from calculating (1.104 -1)*100.

is associated in round 1 with a 10% increase in the odds of being severely food insecure.

Being an Indigenous household is associated with an increase in the likelihood of severe insecurity of 41% and 63% in rounds 1 and 2, respectively. Our study also found that when the head of household is a woman, the odds of being severely food insecure increases by 30%. Regarding reception of public programs, our results suggest an increase in the odds of being moderately food insecure; these results may reflect the targeting of transfers and government support toward the most vulnerable households.

Rural territories are 28% and 32% less likely to be food secure in round 1 and 2, respectively, than urban territories. In rural-urban territories, in round 2, we also found a 21% reduction in the odds of being food secure compared with urban territories. That is, in the context in which round 2 was done, both rural and rural-urban territories had worse food security than urban territories.

Finally, there is a very strong and consistent association between the asset index, or the relative wealth of households, and categories of food security. Our analysis shows that relatively wealthier households have a greater probability of being food secure. Households in the highest wealth quartile in round 1 are as much as 696% more likely to be food secure than households in the lowest quartile. In round 2, this figure is 165%. Regarding severe insecurity, households in the wealthiest quartile were 90% less likely to be severely insecure in round 1 and 77% less likely in round 2, compared to the poorest quartile.

Assets are negatively correlated to the FIES raw count. Fig. 3 displays this relationship in the entire sample, by territory type, but this relationship is more striking for rural households. Poorest rural households have a median raw count of 5 items in the FIES scale. On the other hand, for urban households, the median raw count is between 1 and 2 for all assets category except the richest one, for which the median count is 0.

It is noteworthy that the asset index is the only variable that is statistically significant in each of the 10 territories, and in both surveys (Appendix 1). All the other variables show significant variations in their relationship with food security, depending on the territory and/or survey round (which, it is important to remember, reflect different types of shocks).

In other words, we found that the household's relative wealth is the strongest predictor of the effects of shocks on household food security or insecurity, regardless of the territory or type of shock registered in our

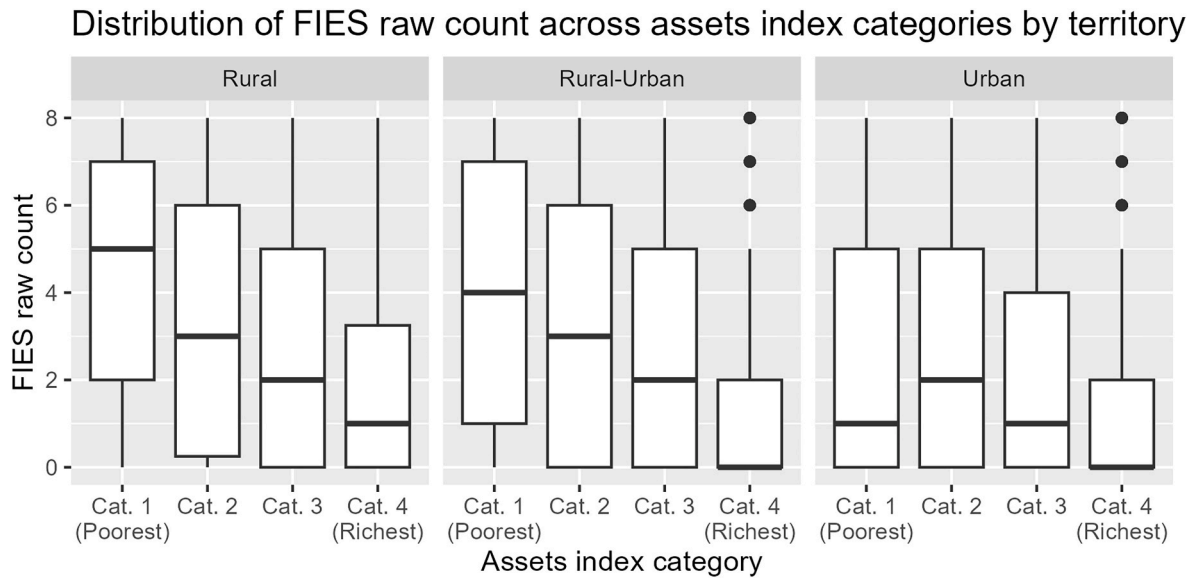

Fig. 3. Distribution of FIES raw count across assets index categories by territory type
Note: in this plot, the solid black line represents the median, while the lower and upper hinges correpond to the 25th and 75th percentiles. The whiskers extend over a range from the hinge plus/minus 1.5 times the interquantile range. Data points beyond the whiskers range can be considered outliers.

study.

In order to test for possible non-linearities, we performed the same analysis but including the assets count and its square instead of the assets index categories (results available upon request). We find that assets increase the probability of being food secure, with the association being strongest for households with 7–8 items. We also find that an additional asset reduces the probability of severe food insecurity, with the association being strongest for households with around 3 to 4 items.

Similarly, we test whether the effects on probabilities vary across types of territories. We find that an additional asset affects the probability of severe food insecurity similarly across types of territories. Nevertheless, rural households seem to benefit less from each additional household asset than their urban counterparts. One possible interpretation of this is that rural households have worse food security because shocks hit them more severely, so that their assets endowment is not enough to mitigate these more relatively severe shocks.

We prefer the specification that uses the assets index categories because the value a household gives to each asset may be different across territories, so the asset index accounts for this by weighting more uncommon items.

3.4. Household coping strategies

Many of the households surveyed found it necessary to apply some type of *ex post* strategy to mitigate the effects of shocks experienced between the beginning of 2020 and the beginning of 2023. Strategies for coping with shocks that we have included in our analysis are (in order from greater to lesser frequency for the sum of all territories): dietary modification (72% of households), dissaving and sale of assets (62%), reduction of spending on health or education (41%), and migration of a household member (10%). Table 4 indicates the frequency of each strategy in each territory, for the aggregate of both surveys.

The strategy of dietary modification (decrease in fresh products and/or increase in processed foods) exceeded the other strategies in all the territories and surveys, except in the first round in the Ecuadorian territories. An increase in this strategy was also seen between the first and second surveys in six of the 10 territories (the exceptions are Guatemala and Chile, where this strategy decreased, although it remained at high

Table 4
Frequency of use of different strategies, by territory.

			Modification of diet	Dissaving & sale of assets	Reduced spending on education or health	Migration
Chile	Araucanía (N = 983)	Mean	0.59	0.43	0.29	0.04
		Std. Dev.	0.49	0.5	0.45	0.2
	Los Lagos (N = 988)	Mean	0.55	0.41	0.27	0.03
		Std. Dev.	0.5	0.49	0.45	0.18
Ecuador	Guayas (N = 1198)	Mean	0.69	0.74	0.47	0.05
		Std. Dev.	0.46	0.44	0.5	0.22
	Los Ríos (N = 1278)	Mean	0.74	0.79	0.49	0.09
		Std. Dev.	0.44	0.41	0.5	0.29
Colombia	Huila (N = 935)	Mean	0.77	0.57	0.22	0.1
		Std. Dev.	0.42	0.49	0.41	0.3
	Nariño (N = 989)	Mean	0.82	0.58	0.26	0.13
		Std. Dev.	0.38	0.49	0.44	0.34
Guatemala	Sacatepéquez (N = 1311)	Mean	0.73	0.61	0.42	0.09
		Std. Dev.	0.44	0.49	0.49	0.29
	Alta Verapaz (N = 1314)	Mean	0.74	0.65	0.53	0.17
		Std. Dev.	0.44	0.48	0.5	0.38
Mexico	Puebla (N = 1211)	Mean	0.78	0.66	0.5	0.13
		Std. Dev.	0.41	0.47	0.5	0.33
	Tabasco (N = 1211)	Mean	0.79	0.66	0.53	0.1
		Std. Dev.	0.41	0.47	0.5	0.3

percentages). The greatest increase in this strategy was in Ecuador and Colombia, which is consistent with the rise in food insecurity in those territories.

The strategy of dissaving and sale of assets decreased in all territories between surveys 1 and 2, except in the Ecuadorian territories, where the percentage held steady. The decrease was most notable in the Chilean and Colombian territories and in Alta Verapaz in Guatemala.

The percentages using the strategy of reducing spending on human capital such as education and health varied greatly between surveys and among territories, from 0% to 71%. A decrease in this strategy is seen between rounds 1 and 2 (especially in Colombia), except in Ecuador, where it increased considerably.

Finally, migration was the strategy least reported in the different territories, ranging from 3% to 25%. Growth is seen, however, in the use of this strategy in the second round in the territories in Guatemala, Mexico and Colombia.

The need to use one of these strategies could be related to inadequate coverage or magnitude of social protection programs provided by the different governments, whether through permanent programs or those designed specially to address the pandemic or the inflationary crisis. The most stable support between the two rounds is seen in the Chilean and Colombian territories, with between 39% and 60% of households benefitting from some government program. Ecuadorian territories showed the least coverage of government assistance in the first round, but there was a significant increase in the second round; the same trend is seen in Mexico, where there were no special programs for the pandemic, although the percentage of coverage of the various cash transfer programs is significant. In Guatemala, government assistance was lower in the second round.

The qualitative work done in the 10 territories provides in-depth information about the coping strategies used by family farmers. The study shows that, beyond the diverse reality of the territories, there are great similarities among the coping strategies of the family farmers and the general population represented in the surveys.

In family farming households, the main strategy for dealing with shocks was to reduce consumption of fresh food, with a decrease in the consumption of meat and fish, other seafood, dairy products, grains, and fruits and vegetables that are not produced locally. The second most important strategy, by frequency of use, was an increase in consumption of processed foods. The strategy of a nutritionally negative change in diet could seem paradoxical, given that these are food producers. Nevertheless, various studies (among them Dirven, 2011; Gordillo and Plassot, 2019; Reardon et al., 2001) have confirmed that in most family farming households, especially the poorest, income from agriculture is less than income from other jobs, such as paid agricultural and non-agricultural work, which means that a large proportion of these households are net purchasers of food.

The use of savings and the sale of assets is another strategy that is mentioned frequently, mainly the sale of livestock and farm machinery and the use of bank savings. This strategy allows households to mitigate the effect of current shocks, but it increases their vulnerability to future shocks.

Reduced spending on education is mentioned in Guatemala (associated with cases in which farmers' children were forced to leave school to work on the farm, or because of a lack of resources to pay for an internet connection for distance learning during the pandemic) and on health in Chile (spending on private health care, including medicines, decreased).

Migration is the least frequent strategy among family farmers. In Chile, Ecuador and Colombia, in general, no migration was reported. On the contrary, during the first period, they took into their homes urban relatives who lost their jobs or were fleeing health restrictions. In Guatemala, loss of income drove migration toward other municipalities in search of jobs, but there were also cases of men and women returning to rural areas. In addition, the interviews and focus groups also identified the presence (although less frequently) of some community responses as coping strategies, such as, for example, food barter, family support, and communal kitchens, among others.

3.5. Household characteristics associated with coping strategies

The strategies associated with different household characteristics in most territories are summarized in Appendix 3, along with details of the relevant territories. The table also shows the list of territories where the variable is associated with a greater or lesser number of strategies used by the same household. Appendix 2 shows details of the regressions by territory and round.

Unlike the preceding analysis of food insecurity, in the analysis of strategies there is greater diversity in the significance of the different variables by country, territory and survey round. One common pattern, again, is the importance of assets so the household does not have to resort to these strategies. Our interpretation is simple: the greater the assets, the less likelihood of being food insecure, and therefore the less need to adopt coping strategies that imply different types of costs for households.

Having more assets reduces the probability of choosing different strategies, as well as the number of strategies used by each household, in most territories and in both rounds. This relationship is documented in all the territories and in both rounds with regard to the strategy of diet modification (Appendix 3, column 2) and also, in almost all cases, for the strategy of reducing spending on education and health.

Household size is associated in more territories with the strategy of reducing spending on health and education. With the accumulation of shocks, larger households in more territories would be moving away from developing adequate levels of human capital. Larger households also tend to use more strategies. This is seen in both rounds, but is observed in more territories in round 2 (Appendix 3, column 3).

The strategy of reducing spending on health and education is also very frequent among Indigenous households. The strategy of dissaving is important in more territories for households with a larger proportion of children under 5, and is less likely for households with a larger proportion of older adults. In this latter type of household, the strategy most likely to be chosen in more territories is migration. Finally, the strategy of diet modification is likely in more territories for households headed by women and those that have received government programs.

4. Conclusions and recommendations

We would like to highlight four conclusions:

First, households in 10 territories in five Latin American countries have experienced a series of shocks in a short period of time, hindering their ability to return to pre-pandemic levels of food security (FAO et al., 2023b). Nevertheless, different territories, even within the same country, have responded differently to these shocks. In some, food insecurity has increased with the accumulation of shocks; in others, it has decreased in comparison to the situation in previous shocks; and in others, the situation has remained stable during the study period, although sometimes at high levels of food insecurity. We cannot assume that a series of shocks translates into a cumulative increase in food insecurity. The response to the same or a similar shock is specific to the conditions of the territories and the households in them. This requires thinking about risk-reduction policies that are flexible enough to adapt to these diverse conditions.

Second, different household characteristics are related to the likelihood of falling into different degrees of food insecurity. The household's asset endowment plays a predominant role, however, and is also manifested in all circumstances included in our study. Far behind asset endowment appear variables such as the household's ethnic characteristics or gender. Nevertheless, there may be interactions here which we did not explore, because being Indigenous or being a female head of household is strongly correlated with having less access to assets, as well as to the lower productivity of certain assets.

Third, the strategies households use probably allow them to mitigate

the present effects of shocks they have experienced, but increase their vulnerability to new shocks in the short or long term. Reducing the nutritional quality of the diet, especially in households with children under age 5, early use of pension funds, selling machinery or animals, and — possibly more surreptitious, but no less harmful — reducing spending on education and health mean bread today, but hunger tomorrow. Surely there is a limit to the number of successive shocks that these households can resist, or the efficacy with which they can do so, when little by little they are exhausting their physical, human and financial capital.

Finally, since the beginning of the pandemic, various actors, including specialized United Nations bodies such as FAO, ECLAC, WFP and the World Bank, called for reinforcing social protection programs to mitigate the impact on employment, income, poverty and food insecurity. This call is correct, of course, but our results suggest that even with wider coverage, these programs are much less effective than households having good asset endowment. The fight to eradicate poverty and extreme poverty, which in Latin America includes the reduction of economic, gender and ethnic inequalities, is ultimately the best policy for reducing vulnerability to shocks that are increasingly frequent and interrelated, such as those experienced by the communities studied as part of this project.

We would also like to highlight two knowledge gaps that can be addressed in future research:

First, what are the conditions that make a territory more or less vulnerable to these shocks in food security levels? Our research has examined household characteristics, but has investigated less the characteristics of the spaces and the societies in which those people live. Is it only the territory's relative level of wealth or poverty, or is there something more? Having answers to this question is essential if we want (as we suggest in the first conclusion) to design territorially differentiated risk-reduction policies. That cannot be done without at least knowing which variables are most important in defining those differences.

Second, how rapid is the recovery of these households' food security? On what does it depend that a household in a given territory recovers more fully and more rapidly? Answering this question in relation to the different strategies used by households and with their initial levels of asset endowment is very important for trying to anticipate the degree of suffering that new shocks could cause, especially if they arrive before there has been time for adequate recovery of factors that provide greater resilience. If recovery times are long, the impact of each successive shock will be greater, and proactive and rapid-response policies would have to be more powerful. Ideally, this requires panel studies that follow households in different territories, or at least a sequence of cross-sectional studies.

CRediT authorship contribution statement

Julio A. Berdegué: Formal analysis, Writing – original draft, Writing – review & editing. **María J. Castillo:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Ileana Gómez:** Formal analysis, Investigation, Writing – original draft, Writing – review & editing. **Gustavo Gordillo:** Formal analysis, Investigation, Writing – original draft, Writing – review & editing. **José Navea:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Irvin Rojas:** Formal analysis, Investigation, Methodology, Visualization, Writing – original draft, Writing – review & editing. **Rodrigo Yáñez:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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APPENDICES.

Appendices 1. Factors associated with the different categories of food security, broken down by territory and round

Appendix 1.A. La Araucanía. Chile

		2020				2022		
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	1.003	1.008	1.019	0.919	0.875*	0.887	1.121	1.665***
	(0.083)	(0.092)	(0.101)	(0.199)	(0.065)	(0.075)	(0.094)	(0.280)
Share <5 y.o.	0.160	5.435	2.173	0.549	0.766	4.411	1.173	0.002**
	(0.206)	(8.240)	(3.907)	(2.668)	(0.849)	(5.348)	(1.736)	(0.005)
Share >65 y.o.	0.720	1.166	1.603	0.520	2.500***	0.762	0.532	0.050**
	(0.237)	(0.447)	(0.654)	(0.499)	(0.853)	(0.276)	(0.243)	(0.061)
1 = Female head	0.694*	1.015	1.857**	0.957	0.761	0.858	1.254	2.992**
	(0.140)	(0.235)	(0.494)	(0.674)	(0.172)	(0.240)	(0.363)	(1.608)

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(*continued*)

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
1 = Indigenous	0.639*	0.850	2.154**	1.355	1.026	1.025	1.237	0.353
	(0.165)	(0.245)	(0.663)	(0.967)	(0.289)	(0.370)	(0.414)	(0.259)
1 = Programs beneficiary	0.966	1.140	0.886	1.142	0.987	1.066	0.967	0.688
	(0.198)	(0.259)	(0.237)	(0.661)	(0.227)	(0.294)	(0.275)	(0.383)
1 = Assets cat. 2	2.033***	0.806	0.630	0.302*	2.901***	1.475	0.303***	0.134***
	(0.515)	(0.228)	(0.190)	(0.211)	(0.870)	(0.539)	(0.116)	(0.093)
1 = Assets cat. 3	3.821***	0.689	0.277***	0.000***	4.320***	1.034	0.269***	0.076***
	(1.053)	(0.211)	(0.103)	(0.000)	(1.209)	(0.374)	(0.097)	(0.064)
1 = Assets cat. 4	6.959***	0.281***	0.235***	0.140*	7.845***	0.966	0.070***	0.000***
	(2.262)	(0.111)	(0.104)	(0.159)	(3.008)	(0.420)	(0.048)	(0.000)
1 = Rural/Urban	0.990	0.920	0.954	3.010	0.482***	2.435***	0.696	11.300**
	(0.224)	(0.247)	(0.278)	(2.872)	(0.127)	(0.781)	(0.243)	(12.702)
1 = Rural	0.822	1.244	0.909	2.793	0.426***	1.887*	0.935	24.336***
	(0.214)	(0.362)	(0.308)	(2.980)	(0.116)	(0.648)	(0.318)	(29.482)
Constant	1.025	0.304**	0.190***	0.053**	1.267	0.163***	0.388**	0.006***
	(0.465)	(0.151)	(0.109)	(0.078)	(0.481)	(0.075)	(0.160)	(0.007)
Num.Obs.	532	532	532	532	449	449	449	449

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.B. Los Lagos. Chile

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.972	1.025	1.031	0.806	0.884	1.069	1.130	1.044
	(0.079)	(0.097)	(0.087)	(0.162)	(0.067)	(0.079)	(0.094)	(0.181)
Share <5 y.o.	0.273	2.557	1.687	12.417	0.720	1.233	0.167	77.370*
	(0.343)	(3.909)	(2.283)	(53.731)	(0.896)	(1.598)	(0.284)	(196.001)
Share >65 y.o.	0.886	1.248	0.800	2.556	2.140**	0.640	0.550	0.332
	(0.281)	(0.470)	(0.304)	(2.873)	(0.787)	(0.287)	(0.280)	(0.281)
1 = Female head	0.833	0.794	1.548*	1.015	0.457***	1.637*	1.668*	2.615*
	(0.169)	(0.209)	(0.371)	(0.769)	(0.101)	(0.426)	(0.497)	(1.347)
1 = Indigenous	0.481**	1.166	1.474	7.134***	0.624	1.893*	0.726	1.755
	(0.145)	(0.458)	(0.486)	(5.181)	(0.182)	(0.622)	(0.294)	(0.966)
1 = Programs beneficiary	1.074	0.807	1.029	1.823	0.616**	1.433	1.593	0.667
	(0.218)	(0.210)	(0.253)	(1.351)	(0.143)	(0.392)	(0.516)	(0.392)
1 = Assets cat. 2	1.846**	0.847	0.581*	0.581	2.482***	0.780	0.578	0.242**
	(0.492)	(0.297)	(0.172)	(0.431)	(0.779)	(0.300)	(0.212)	(0.164)
1 = Assets cat. 3	2.719***	0.635	0.484**	0.150	3.339***	0.799	0.308**	0.274**
	(0.768)	(0.245)	(0.157)	(0.222)	(1.166)	(0.326)	(0.145)	(0.175)
1 = Assets cat. 4	5.270***	0.444**	0.215***	0.000***	4.836***	0.839	0.177***	0.000***
	(1.525)	(0.170)	(0.080)	(0.000)	(1.637)	(0.317)	(0.086)	(0.000)
1 = Rural/Urban	0.967	0.910	1.354	0.210*	0.861	0.891	1.500	1.186
	(0.226)	(0.266)	(0.379)	(0.190)	(0.223)	(0.271)	(0.549)	(0.764)
1 = Rural	0.973	0.858	1.317	0.504	0.711	1.203	1.288	1.886
	(0.244)	(0.284)	(0.409)	(0.442)	(0.200)	(0.393)	(0.513)	(1.074)
Constant	1.093	0.259***	0.285***	0.037***	1.885*	0.137***	0.153***	0.055***
	(0.464)	(0.133)	(0.138)	(0.036)	(0.661)	(0.061)	(0.074)	(0.042)
Num.Obs.	538	538	538	538	450	450	450	450

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.C. Guayas. Ecuador

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.836***	1.085*	1.094	1.053	1.003	0.953	0.956	1.094
	(0.048)	(0.052)	(0.061)	(0.073)	(0.098)	(0.069)	(0.057)	(0.087)
Share <5 y.o.	0.459	0.621	2.292	2.366	1.845	0.980	0.706	0.889
	(0.294)	(0.383)	(1.365)	(1.655)	(1.607)	(0.857)	(0.479)	(0.734)
Share >65 y.o.	0.327**	0.971	1.115	4.703**	1.320	0.522	1.235	0.859
	(0.183)	(0.541)	(0.664)	(3.000)	(0.658)	(0.282)	(0.470)	(0.497)
1 = Female head	1.019	0.957	1.319	0.654	0.648	0.990	1.238	0.985
	(0.181)	(0.180)	(0.253)	(0.178)	(0.184)	(0.269)	(0.252)	(0.256)
1 = Indigenous	1.057	0.306	1.342	2.815		0.000***		9.122*
	(0.658)	(0.256)	(0.824)	(1.920)		(0.000)		(12.171)
1 = Programs beneficiary	0.944	0.614	1.093	1.443	0.575	0.593	1.277	1.471
	(0.458)	(0.315)	(0.503)	(0.666)	(0.216)	(0.199)	(0.299)	(0.434)
1 = Assets cat. 2	1.687*	1.253	0.935	0.385***	0.970	1.052	1.649*	0.506**
	(0.465)	(0.324)	(0.235)	(0.121)	(0.476)	(0.428)	(0.459)	(0.169)

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	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
1 = Assets cat. 3	4.199***	0.965	0.515***	0.189***	1.495	0.983	1.483	0.517*
	(1.049)	(0.246)	(0.130)	(0.070)	(0.628)	(0.393)	(0.408)	(0.181)
1 = Assets cat. 4	5.418***	1.006	0.251***	0.256***	5.772***	1.851	0.523**	0.167***
	(1.490)	(0.283)	(0.088)	(0.101)	(2.289)	(0.713)	(0.155)	(0.075)
1 = Rural/Urban	1.063	1.137	0.728	1.128	1.264	1.168	0.777	1.040
	(0.218)	(0.256)	(0.168)	(0.356)	(0.377)	(0.390)	(0.200)	(0.357)
1 = Rural	0.762	1.231	0.910	1.353	0.592	1.084	1.280	0.917
	(0.179)	(0.304)	(0.228)	(0.472)	(0.209)	(0.386)	(0.343)	(0.343)
Constant	0.618	0.243***	0.284***	0.190***	0.136***	0.223***	0.845	0.273***
	(0.193)	(0.074)	(0.091)	(0.075)	(0.074)	(0.122)	(0.313)	(0.132)
Num.Obs.	689	689	689	689	500	500	500	500

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.D. Los Ríos. Ecuador

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	1.023	0.892**	1.010	1.142**	0.816*	1.074	0.985	1.102
	(0.054)	(0.050)	(0.052)	(0.075)	(0.086)	(0.101)	(0.055)	(0.081)
Share <5 y.o.	0.644	0.703	0.908	4.602**	0.103	0.579	2.230	1.078
	(0.328)	(0.378)	(0.488)	(3.031)	(0.146)	(0.642)	(1.470)	(0.828)
Share >65 y.o.	2.552**	0.455	0.356*	2.670	0.861	0.035***	0.867	2.404*
	(1.153)	(0.240)	(0.214)	(1.648)	(0.475)	(0.039)	(0.336)	(1.146)
1 = Female head	0.920	0.864	1.112	1.248	0.711	1.347	1.018	1.025
	(0.148)	(0.151)	(0.190)	(0.301)	(0.231)	(0.452)	(0.200)	(0.251)
1 = Indigenous	1.492	0.483	2.083	0.000***			1651572.993***	0.000***
	(0.842)	(0.399)	(1.274)	(0.000)			(1725719.010)	(0.000)
1 = Programs beneficiary	0.282**	0.535	6.883***	0.175	0.528	0.981	1.637**	0.645
	(0.166)	(0.368)	(3.287)	(0.201)	(0.237)	(0.414)	(0.377)	(0.182)
1 = Assets cat. 2	1.411	1.456	0.727	0.630*	10.048***	4.323*	1.529	0.290***
	(0.323)	(0.373)	(0.165)	(0.176)	(7.867)	(3.573)	(0.398)	(0.084)
1 = Assets cat. 3	1.579*	1.499	0.862	0.332***	6.341**	8.900***	1.762**	0.220***
	(0.392)	(0.410)	(0.208)	(0.125)	(5.148)	(7.016)	(0.487)	(0.069)
1 = Assets cat. 4	2.556***	1.762**	0.423***	0.182***	24.121***	18.319***	1.025	0.049***
	(0.583)	(0.436)	(0.104)	(0.074)	(19.136)	(14.465)	(0.294)	(0.024)
1 = Rural/Urban	1.178	1.740**	0.596**	0.721	0.767	1.291	0.817	1.285
	(0.231)	(0.392)	(0.130)	(0.214)	(0.358)	(0.563)	(0.229)	(0.460)
1 = Rural	0.688*	2.418***	0.808	0.669	0.947	0.887	1.115	0.962
	(0.135)	(0.523)	(0.162)	(0.191)	(0.329)	(0.347)	(0.250)	(0.277)
Constant	0.329***	0.286***	0.599*	0.131***	0.057***	0.014***	0.683	0.707
	(0.098)	(0.090)	(0.170)	(0.051)	(0.053)	(0.011)	(0.231)	(0.298)
Num.Obs.	778	778	778	778	499	499	499	499

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.E. Huila. Colombia

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.896	0.857*	1.116	1.127	0.914	1.009	0.935	1.222***
	(0.075)	(0.076)	(0.084)	(0.091)	(0.066)	(0.084)	(0.062)	(0.094)
Share <5 y.o.	0.409	0.393	3.157	1.927	0.851	0.826	3.853*	0.229
	(0.348)	(0.406)	(2.518)	(2.278)	(0.696)	(0.821)	(2.740)	(0.207)
Share >65 y.o.	0.877	0.348	1.647	1.715	0.447	1.459	1.129	1.323
	(0.483)	(0.256)	(0.922)	(1.108)	(0.221)	(0.779)	(0.510)	(0.578)
1 = Female head	0.623**	1.383	0.990	1.423	0.649*	1.638*	1.328	0.801
	(0.149)	(0.376)	(0.223)	(0.439)	(0.152)	(0.478)	(0.299)	(0.197)
1 = Indigenous	0.563	0.886	1.200	1.564	0.900	1.092	0.749	1.489
	(0.244)	(0.404)	(0.453)	(0.701)	(0.451)	(0.672)	(0.357)	(0.729)
1 = Programs beneficiary	0.832	1.197	1.246	0.716	0.600**	1.597	1.227	1.054
	(0.210)	(0.330)	(0.286)	(0.223)	(0.136)	(0.472)	(0.273)	(0.264)
1 = Assets cat. 2	1.156	0.816	1.436	0.650	1.738	2.716*	1.175	0.439**
	(0.567)	(0.323)	(0.445)	(0.234)	(0.801)	(1.478)	(0.383)	(0.141)
1 = Assets cat. 3	7.053***	0.812	0.547*	0.320***	4.875***	3.408**	1.303	0.116***
	(3.134)	(0.322)	(0.177)	(0.129)	(2.120)	(1.781)	(0.427)	(0.044)
1 = Assets cat. 4	14.205***	0.840	0.297***	0.090***	6.708***	4.646***	1.233	0.044***
	(6.440)	(0.343)	(0.107)	(0.050)	(2.932)	(2.344)	(0.415)	(0.020)
1 = Rural/Urban	0.928	1.122	1.261	0.670	1.471	1.034	1.394	0.346***
	(0.302)	(0.415)	(0.418)	(0.327)	(0.434)	(0.374)	(0.387)	(0.125)

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	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
1 = Rural	0.986	1.029	1.224	0.700	1.108	1.066	2.407***	0.252***
	(0.295)	(0.345)	(0.346)	(0.261)	(0.317)	(0.402)	(0.627)	(0.084)
Constant	0.275**	0.429	0.301**	0.240**	0.242***	0.031***	0.236***	1.435
	(0.167)	(0.266)	(0.155)	(0.153)	(0.123)	(0.017)	(0.095)	(0.625)
Num.Obs.	454	454	454	454	478	478	478	478

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.F. Nariño. Colombia

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.997	1.012	0.946	1.098	0.915	0.944	0.930	1.187**
	(0.071)	(0.067)	(0.055)	(0.077)	(0.072)	(0.101)	(0.056)	(0.081)
Share <5 y.o.	0.260	6.324**	0.662	0.686	0.565	0.341	0.941	2.311
	(0.314)	(5.753)	(0.577)	(0.776)	(0.498)	(0.333)	(0.633)	(1.687)
Share >65 y.o.	2.446	0.834	0.645	0.861	1.072	1.414	1.588	0.411
	(1.337)	(0.439)	(0.299)	(0.495)	(0.617)	(1.135)	(0.751)	(0.249)
1 = Female head	0.790	0.783	1.099	1.357	0.656*	1.264	1.253	0.937
	(0.205)	(0.200)	(0.230)	(0.353)	(0.159)	(0.401)	(0.248)	(0.212)
1 = Indigenous	0.856	0.680	1.116	1.350	0.475***	1.224	0.766	1.988***
	(0.305)	(0.220)	(0.264)	(0.367)	(0.137)	(0.411)	(0.167)	(0.445)
1 = Programs beneficiary	0.716	0.885	1.307	1.016	1.204	0.728	1.003	1.037
	(0.215)	(0.250)	(0.287)	(0.264)	(0.330)	(0.240)	(0.211)	(0.248)
1 = Assets cat. 2	9.524***	0.596	1.110	0.479**	1.245	1.704	1.032	0.737
	(5.569)	(0.211)	(0.288)	(0.151)	(0.466)	(0.738)	(0.259)	(0.189)
1 = Assets cat. 3	10.664***	1.311	0.657	0.440**	3.014***	2.282*	1.043	0.324***
	(6.273)	(0.480)	(0.193)	(0.160)	(1.036)	(0.961)	(0.267)	(0.095)
1 = Assets cat. 4	39.893***	0.731	0.234***	0.216***	12.640***	1.914	0.483**	0.027***
	(24.143)	(0.321)	(0.094)	(0.110)	(4.613)	(0.919)	(0.156)	(0.020)
1 = Rural	0.591*	1.384	1.108	1.257	1.072	0.789	1.050	1.047
	(0.183)	(0.491)	(0.297)	(0.444)	(0.292)	(0.270)	(0.228)	(0.258)
Constant	0.058***	0.210***	0.840	0.205***	0.236***	0.102***	0.707	0.321***
	(0.040)	(0.110)	(0.352)	(0.110)	(0.091)	(0.062)	(0.237)	(0.117)
Num.Obs.	466	466	466	466	522	522	522	522

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.G. Sacatepéquez. Guatemala

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.869***	0.945	1.107***	1.118**	0.916*	1.039	1.097	1.042
	(0.040)	(0.039)	(0.041)	(0.059)	(0.042)	(0.048)	(0.063)	(0.090)
Share <5 y.o.	1.076	1.288	0.589	1.376	0.522	5.048**	0.332	0.609
	(0.658)	(0.810)	(0.353)	(1.100)	(0.346)	(3.396)	(0.277)	(0.712)
Share >65 y.o.	0.492	2.466	0.393	4.786	1.123	1.444	0.094***	5.083**
	(0.311)	(1.551)	(0.265)	(4.667)	(0.490)	(0.644)	(0.086)	(3.668)
1 = Female head	0.643**	1.037	1.142	1.905**	0.634**	1.050	1.479*	1.824*
	(0.121)	(0.205)	(0.209)	(0.557)	(0.122)	(0.221)	(0.351)	(0.660)
1 = Indigenous	0.656**	1.277	1.242	0.879	1.377	0.888	1.029	0.432**
	(0.128)	(0.256)	(0.237)	(0.264)	(0.297)	(0.204)	(0.266)	(0.182)
1 = Programs beneficiary	0.588***	1.269	1.292	1.239	0.941	1.012	1.345	0.607
	(0.110)	(0.243)	(0.230)	(0.347)	(0.232)	(0.261)	(0.377)	(0.306)
1 = Assets cat. 2	2.060	1.355	1.426	0.337***	0.362***	1.970***	2.293**	3.111
	(1.114)	(0.571)	(0.510)	(0.128)	(0.078)	(0.469)	(0.754)	(2.179)
1 = Assets cat. 3	3.665**	1.776	1.083	0.155***	0.200***	1.150	4.844***	16.646***
	(1.943)	(0.738)	(0.392)	(0.069)	(0.048)	(0.315)	(1.605)	(10.618)
1 = Assets cat. 4	8.974***	1.422	0.654	0.014***	0.095***	1.051	8.476***	21.066***
	(4.681)	(0.589)	(0.241)	(0.011)	(0.036)	(0.425)	(3.404)	(15.823)
1 = Rural/Urban	0.670*	0.976	1.408*	1.017	0.657**	1.268	1.205	1.397
	(0.139)	(0.214)	(0.274)	(0.326)	(0.131)	(0.269)	(0.296)	(0.494)
Constant	0.525	0.196***	0.206***	0.199***	4.949***	0.154***	0.055***	0.008***
	(0.301)	(0.091)	(0.090)	(0.114)	(1.275)	(0.041)	(0.020)	(0.006)
Num.Obs.	659	659	659	659	649	649	649	649

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.H. Alta Verapaz. Guatemala

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.850***	0.968	0.982	1.127***	0.940	1.045	0.979	1.068
	(0.044)	(0.040)	(0.029)	(0.038)	(0.037)	(0.046)	(0.043)	(0.054)
Share <5 y.o.	0.847	0.706	1.145	1.431	0.652	0.837	1.152	2.370
	(0.610)	(0.503)	(0.567)	(0.826)	(0.334)	(0.483)	(0.648)	(1.590)
Share >65 y.o.	0.030***	1.052	0.819	10.960***	0.700	1.438	0.552	2.884
	(0.037)	(0.982)	(0.574)	(8.589)	(0.391)	(0.891)	(0.364)	(2.147)
1 = Female head	1.144	1.174	0.991	0.820	0.642**	1.477*	1.401*	0.761
	(0.307)	(0.273)	(0.182)	(0.179)	(0.116)	(0.297)	(0.270)	(0.186)
1 = Indigenous	1.035	0.864	0.855	1.586*	1.088	0.850	1.215	0.831
	(0.289)	(0.219)	(0.174)	(0.409)	(0.229)	(0.202)	(0.293)	(0.247)
1 = Programs beneficiary	0.764	0.849	1.249	1.038	0.401***	0.965	1.310	2.429***
	(0.206)	(0.209)	(0.226)	(0.222)	(0.119)	(0.280)	(0.358)	(0.743)
1 = Assets cat. 2	1.313	2.859***	1.333	0.345***	0.530**	1.368	1.690	1.939
	(0.477)	(0.886)	(0.279)	(0.088)	(0.157)	(0.474)	(0.717)	(1.364)
1 = Assets cat. 3	3.520***	3.623***	0.707	0.276***	0.218***	1.532	2.831**	6.346***
	(1.105)	(1.119)	(0.160)	(0.077)	(0.066)	(0.530)	(1.145)	(4.135)
1 = Assets cat. 4	23.670***	2.108*	0.162***	0.091***	0.159***	1.185	3.242***	10.843***
	(8.873)	(0.829)	(0.065)	(0.050)	(0.049)	(0.419)	(1.306)	(7.114)
1 = Rural/Urban	0.744	1.608	0.656	1.528	0.771	1.157	0.945	0.898
	(0.533)	(0.941)	(0.358)	(1.055)	(0.471)	(0.701)	(0.516)	(0.589)
1 = Rural	0.956	0.971	0.778	1.611*	1.704**	1.010	0.693	0.596
	(0.280)	(0.261)	(0.159)	(0.434)	(0.407)	(0.249)	(0.178)	(0.193)
Constant	0.297**	0.128***	1.068	0.123***	2.732***	0.167***	0.133***	0.028***
	(0.153)	(0.054)	(0.379)	(0.057)	(0.863)	(0.063)	(0.055)	(0.019)
Num.Obs.	650	650	650	650	656	656	656	656

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.I. Puebla. Mexico

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.899**	0.912*	1.056	1.090**	0.882**	1.005	1.044	1.091
	(0.048)	(0.046)	(0.040)	(0.046)	(0.054)	(0.055)	(0.060)	(0.072)
Share <5 y.o.	0.403	2.033	0.649	2.639*	0.976	0.412	1.612	1.187
	(0.228)	(1.059)	(0.300)	(1.476)	(0.660)	(0.318)	(1.098)	(1.004)
Share >65 y.o.	0.383	2.801*	0.692	1.943	0.617	0.751	0.918	2.560
	(0.232)	(1.703)	(0.368)	(1.282)	(0.378)	(0.482)	(0.599)	(1.563)
1 = Female head	0.784	1.034	1.154	1.024	0.722	0.590**	1.562**	1.535
	(0.151)	(0.215)	(0.192)	(0.217)	(0.165)	(0.149)	(0.354)	(0.410)
1 = Indigenous	0.768	0.999	0.978	1.315	0.809	0.824	1.099	1.408
	(0.166)	(0.217)	(0.169)	(0.285)	(0.196)	(0.205)	(0.268)	(0.380)
1 = Programs beneficiary	0.805	1.144	1.367	0.683	1.056	1.675*	0.743	0.852
	(0.208)	(0.293)	(0.281)	(0.191)	(0.264)	(0.449)	(0.187)	(0.245)
1 = Assets cat. 2	1.435	0.773	1.296	0.710	1.231	1.352	0.832	0.797
	(0.454)	(0.220)	(0.273)	(0.174)	(0.436)	(0.471)	(0.252)	(0.279)
1 = Assets cat. 3	3.762***	1.427	0.597**	0.436***	2.631***	1.179	0.449**	0.721
	(1.054)	(0.372)	(0.133)	(0.120)	(0.858)	(0.379)	(0.144)	(0.244)
1 = Assets cat. 4	11.254***	0.851	0.411***	0.037***	5.276***	1.055	0.324***	0.245***
	(3.297)	(0.273)	(0.109)	(0.026)	(1.722)	(0.349)	(0.108)	(0.114)
1 = Rural/Urban	0.703	0.965	1.732	1.484				
	(0.287)	(0.511)	(0.862)	(1.678)				
1 = Rural	0.559	1.234	1.587	1.707				
	(0.251)	(0.687)	(0.831)	(1.954)				
Constant	0.514	0.249**	0.308**	0.130*	0.526	0.274***	0.418**	0.138***
	(0.266)	(0.158)	(0.172)	(0.148)	(0.215)	(0.110)	(0.161)	(0.066)
Num.Obs.	730	730	730	730	451	451	451	451

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 1.J. Tabasco. Mexico

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
Household size	0.943	0.842**	1.061	1.078	0.869	1.030	0.984	1.143
	(0.051)	(0.067)	(0.046)	(0.058)	(0.081)	(0.080)	(0.071)	(0.098)
Share <5 y.o.	0.082***	3.119*	1.842	1.221	0.452	1.023	3.164*	0.328
	(0.061)	(2.025)	(0.904)	(0.672)	(0.357)	(0.743)	(2.027)	(0.248)
Share >65 y.o.	1.152	2.582	0.594	0.701	0.257*	0.798	1.378	2.213
	(0.695)	(1.737)	(0.347)	(0.440)	(0.204)	(0.571)	(0.864)	(1.454)
1 = Female head	0.747	0.760	1.380*	1.059	0.687	0.659	1.199	1.589*

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(*continued*)

	2020				2022			
	Food security	Mild insecurity	Moderate insecurity	Severe insecurity	Food security	Mild insecurity	Moderate insecurity	Severe insecurity
	(0.143)	(0.176)	(0.236)	(0.199)	(0.187)	(0.186)	(0.263)	(0.394)
1 = Indigenous	0.416***	0.956	1.292	1.511**	0.682	0.983	1.019	1.263
	(0.094)	(0.238)	(0.238)	(0.296)	(0.239)	(0.294)	(0.260)	(0.331)
1 = Programs beneficiary	0.858	0.942	1.277	0.866	1.014	1.124	1.181	0.742
	(0.187)	(0.244)	(0.237)	(0.185)	(0.286)	(0.308)	(0.293)	(0.211)
1 = Assets cat. 2	2.445**	2.048*	0.979	0.577**	1.491	1.466	1.593	0.492**
	(1.006)	(0.842)	(0.241)	(0.140)	(0.826)	(0.620)	(0.487)	(0.152)
1 = Assets cat. 3	3.232***	2.319**	1.313	0.309***	5.619***	1.895	0.797	0.347***
	(1.275)	(0.945)	(0.321)	(0.080)	(2.890)	(0.805)	(0.264)	(0.115)
1 = Assets cat. 4	15.588***	2.260**	0.448***	0.103***	22.653***	1.580	0.377***	0.042***
	(5.988)	(0.922)	(0.122)	(0.033)	(11.858)	(0.695)	(0.141)	(0.024)
Constant	0.205***	0.152***	0.287***	0.580	0.193***	0.141***	0.366**	0.456*
	(0.091)	(0.076)	(0.093)	(0.193)	(0.118)	(0.077)	(0.156)	(0.210)
Num.Obs.	723	723	723	723	455	455	455	455

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendices 2. Factors associated with the different coping strategies, broken down by territory and round

Appendix 2.A. La Araucanía, Chile

	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	0.835**	1.067	0.969	1.216	0.993	1.113	1.315***	1.147*	1.136	1.105***
	(0.071)	(0.088)	(0.075)	(0.188)	(0.028)	(0.079)	(0.088)	(0.088)	(0.159)	(0.029)
Share <5 y.o.	5.571	1.100	1.191	0.002	1.318	1.946	0.735	0.818	1.423	1.084
	(7.302)	(1.415)	(1.574)	(0.010)	(0.618)	(2.025)	(0.802)	(0.944)	(2.522)	(0.443)
Share >65 y.o.	0.878	1.253	0.632	1.130	0.972	0.474**	0.612	1.095	0.432	0.707**
	(0.293)	(0.384)	(0.197)	(0.785)	(0.098)	(0.157)	(0.209)	(0.383)	(0.395)	(0.102)
1 = Female head	1.357	1.290	1.434*	1.735	1.140**	1.311	0.857	1.398	1.122	1.077
	(0.274)	(0.240)	(0.277)	(0.967)	(0.075)	(0.288)	(0.193)	(0.342)	(0.531)	(0.101)
1 = Indigenous	0.966	1.486*	1.350	1.681	1.089	1.033	0.990	0.951	2.202	1.020
	(0.246)	(0.353)	(0.333)	(1.090)	(0.085)	(0.287)	(0.273)	(0.288)	(1.183)	(0.111)
1 = Programs beneficiary	1.582**	0.837	0.919	0.785	1.043	1.150	1.160	1.135	2.203	1.074
	(0.338)	(0.164)	(0.186)	(0.455)	(0.068)	(0.247)	(0.259)	(0.282)	(1.105)	(0.099)
1 = Assets cat. 2	0.633	0.696	0.749	2.287	0.887	0.440***	0.701	0.436**	0.248*	0.687***
	(0.184)	(0.175)	(0.192)	(1.707)	(0.067)	(0.129)	(0.202)	(0.141)	(0.190)	(0.082)
1 = Assets cat. 3	0.396***	0.479***	0.500**	1.465	0.719***	0.207***	0.486**	0.373***	0.224**	0.505***
	(0.116)	(0.125)	(0.139)	(1.207)	(0.067)	(0.059)	(0.139)	(0.114)	(0.151)	(0.061)
1 = Assets cat. 4	0.387***	0.582*	0.661	1.421	0.727***	0.167***	0.275***	0.232***	0.241*	0.365***
	(0.120)	(0.165)	(0.191)	(1.218)	(0.073)	(0.060)	(0.104)	(0.104)	(0.206)	(0.068)
1 = Rural/Urban	0.760	0.889	0.823	0.978	0.980	1.654*	1.036	1.214	0.735	1.133
	(0.175)	(0.190)	(0.183)	(0.614)	(0.072)	(0.435)	(0.277)	(0.362)	(0.474)	(0.127)
1 = Rural	1.006	0.645*	0.653*	1.362	0.912	1.097	1.085	1.417	0.917	1.078
	(0.261)	(0.154)	(0.167)	(0.933)	(0.079)	(0.281)	(0.286)	(0.423)	(0.522)	(0.124)
Constant	5.357***	1.223	1.004	0.008***	2.032***	1.524	0.370***	0.259***	0.051***	1.346*
	(2.609)	(0.519)	(0.425)	(0.008)	(0.286)	(0.585)	(0.136)	(0.104)	(0.033)	(0.207)
Num.Obs.	532	532	532	532	532	449	449	449	449	449

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.B. Los Lagos, Chile

	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.069	1.154*	1.021	1.126	1.035	1.142*	1.093	1.309***	1.024	1.067**
	(0.085)	(0.092)	(0.081)	(0.196)	(0.026)	(0.087)	(0.078)	(0.118)	(0.171)	(0.033)
Share <5 y.o.	0.559	1.406	0.135	0.179	0.705	0.641	7.384	0.602	61.317**	1.483
	(0.603)	(1.539)	(0.182)	(0.638)	(0.308)	(0.750)	(9.028)	(0.756)	(113.355)	(0.713)
Share >65 y.o.	1.226	1.058	0.618	0.331	0.930	0.383***	0.225***	0.411*	0.438	0.494***
	(0.382)	(0.330)	(0.199)	(0.296)	(0.102)	(0.125)	(0.105)	(0.200)	(0.468)	(0.090)
1 = Female head	1.177	1.123	0.651**	0.429	0.959	1.303	1.214	1.963**	0.629	1.137
	(0.235)	(0.218)	(0.135)	(0.231)	(0.066)	(0.274)	(0.277)	(0.517)	(0.409)	(0.108)
1 = Indigenous	1.835*	1.948**	1.897**	2.680*	1.319***	1.035	1.091	1.092	3.290**	1.065
	(0.615)	(0.605)	(0.550)	(1.510)	(0.113)	(0.281)	(0.317)	(0.376)	(1.970)	(0.127)
1 = Programs beneficiary	1.615**	0.840	1.050	0.917	1.090	1.186	1.123	1.443	2.471	1.165
	(0.331)	(0.167)	(0.215)	(0.439)	(0.076)	(0.263)	(0.273)	(0.401)	(1.690)	(0.117)
1 = Assets cat. 2	0.621	0.754	0.863	0.993	0.916	0.424***	0.759	0.616	1.213	0.760**

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	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
	(0.187)	(0.205)	(0.239)	(0.675)	(0.077)	(0.135)	(0.235)	(0.206)	(0.977)	(0.090)
1 = Assets cat. 3	0.407***	0.550**	0.945	0.836	0.837**	0.267***	0.416**	0.176***	0.843	0.512***
	(0.120)	(0.154)	(0.260)	(0.562)	(0.076)	(0.094)	(0.149)	(0.076)	(0.783)	(0.074)
1 = Assets cat. 4	0.275***	0.296***	0.390***	0.396	0.589***	0.166***	0.300***	0.202***	0.616	0.400***
	(0.078)	(0.082)	(0.114)	(0.287)	(0.059)	(0.056)	(0.102)	(0.082)	(0.580)	(0.060)
1 = Rural/Urban	0.733	0.647**	0.675*	0.643	0.807***	0.799	1.299	0.782	0.891	0.979
	(0.167)	(0.142)	(0.152)	(0.456)	(0.062)	(0.195)	(0.356)	(0.249)	(0.601)	(0.113)
1 = Rural	0.698	0.709	0.676	2.153	0.845**	1.116	1.446	2.085**	0.817	1.217*
	(0.176)	(0.175)	(0.177)	(1.295)	(0.072)	(0.306)	(0.412)	(0.680)	(0.655)	(0.145)
Constant	2.212*	1.460	1.165	0.053***	2.089***	2.107*	0.487**	0.180***	0.018***	1.431**
	(0.938)	(0.629)	(0.499)	(0.044)	(0.293)	(0.814)	(0.173)	(0.073)	(0.019)	(0.212)
Num.Obs.	538	538	538	538	538	450	450	450	450	450

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.C. Guayas, Ecuador

	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.056	1.102*	1.123**	0.939	1.033**	1.072	1.144*	1.137**	1.105	1.024**
	(0.053)	(0.061)	(0.053)	(0.090)	(0.014)	(0.088)	(0.089)	(0.071)	(0.121)	(0.012)
Share <5 y.o.	2.411	1.406	1.972	9.334**	1.373**	0.221*	0.655	0.638	0.858	0.899
	(1.412)	(0.923)	(1.095)	(8.504)	(0.219)	(0.195)	(0.478)	(0.471)	(1.868)	(0.122)
Share >65 y.o.	5.326***	1.301	2.055	7.740***	1.510***	0.531	0.766	1.439	4.364*	0.906
	(2.979)	(0.668)	(1.034)	(5.615)	(0.193)	(0.253)	(0.333)	(0.587)	(3.665)	(0.081)
1 = Female head	1.259	1.338	0.985	2.202**	1.059	1.643*	1.364	1.375	1.291	1.125***
	(0.220)	(0.256)	(0.171)	(0.795)	(0.053)	(0.468)	(0.313)	(0.288)	(0.601)	(0.047)
1 = Indigenous	1.037	0.318*	0.847		0.805		0.700			1.184
	(0.562)	(0.187)	(0.497)		(0.176)		(0.702)			(0.153)
1 = Programs beneficiary	1.549	0.423**	0.810	0.526	0.886	1.576	0.848	1.184	0.405	1.028
	(0.745)	(0.181)	(0.335)	(0.500)	(0.098)	(0.528)	(0.212)	(0.287)	(0.273)	(0.046)
1 = Assets cat. 2	0.502***	1.012	0.724	0.541	0.865**	0.742	0.812	0.726	6.019	0.950
	(0.130)	(0.286)	(0.168)	(0.281)	(0.057)	(0.347)	(0.252)	(0.222)	(6.584)	(0.049)
1 = Assets cat. 3	0.264***	0.730	0.372***	0.670	0.718***	0.607	0.969	0.534**	9.242**	0.931
	(0.064)	(0.186)	(0.086)	(0.330)	(0.051)	(0.263)	(0.313)	(0.159)	(10.133)	(0.050)
1 = Assets cat. 4	0.319***	0.703	0.419***	1.106	0.737***	0.131***	0.680	0.255***	4.471	0.706***
	(0.086)	(0.195)	(0.109)	(0.580)	(0.058)	(0.055)	(0.226)	(0.078)	(5.173)	(0.049)
1 = Rural/Urban	1.171	0.425***	1.203	1.762	0.991	0.845	1.057	0.728	0.527	0.943
	(0.238)	(0.098)	(0.249)	(0.907)	(0.060)	(0.262)	(0.308)	(0.188)	(0.323)	(0.056)
1 = Rural	1.178	0.818	1.136	2.260	1.045	1.287	0.840	0.970	0.785	0.967
	(0.268)	(0.218)	(0.260)	(1.153)	(0.066)	(0.457)	(0.254)	(0.267)	(0.460)	(0.057)
Constant	1.868**	3.373***	0.474***	0.023***	1.922***	7.334***	2.121*	1.761	0.007***	2.404***
	(0.570)	(1.104)	(0.132)	(0.018)	(0.157)	(3.913)	(0.915)	(0.683)	(0.009)	(0.184)
Num.Obs.	689	689	689	689	689	500	500	500	500	500

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.D. Los Ríos, Ecuador

	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.050	0.980	1.075	1.181**	1.027**	1.143	1.025	1.189**	0.881	1.023**
	(0.060)	(0.059)	(0.053)	(0.081)	(0.013)	(0.125)	(0.074)	(0.080)	(0.185)	(0.010)
Share <5 y.o.	4.831***	4.686**	4.753***	22.247***	1.863***	6.398	1.197	1.030	1.156	1.062
	(2.529)	(3.005)	(2.358)	(15.807)	(0.225)	(7.327)	(0.932)	(0.788)	(1.954)	(0.117)
Share >65 y.o.	4.560***	2.451	6.449***	47.907***	2.045***	2.879*	0.429*	1.977	2.273	1.045
	(2.300)	(1.402)	(3.137)	(32.863)	(0.216)	(1.690)	(0.188)	(0.922)	(1.677)	(0.069)
1 = Female head	0.868	0.704*	1.142	1.180	0.954	1.815*	0.768	0.943	0.703	1.013
	(0.141)	(0.131)	(0.190)	(0.301)	(0.041)	(0.596)	(0.182)	(0.213)	(0.373)	(0.037)
1 = Indigenous	0.299*	0.386*	0.715		0.605**		0.664	0.591	9.141	1.076
	(0.193)	(0.209)	(0.458)		(0.140)		(1.248)	(1.359)	(19.689)	(0.283)
1 = Programs beneficiary	2.540	0.889	0.910	0.233	0.925	1.073	1.391	1.005	1.762	1.064
	(1.472)	(0.432)	(0.496)	(0.213)	(0.101)	(0.410)	(0.402)	(0.258)	(1.025)	(0.042)
1 = Assets cat. 2	1.035	1.757**	1.100	1.480	1.089	0.214**	1.955**	0.482**	0.520	0.989
	(0.240)	(0.491)	(0.237)	(0.439)	(0.059)	(0.143)	(0.637)	(0.160)	(0.421)	(0.043)
1 = Assets cat. 3	0.609**	1.063	0.655*	1.283	0.906	0.187**	1.746*	0.398***	1.668	0.947
	(0.149)	(0.290)	(0.157)	(0.471)	(0.059)	(0.125)	(0.583)	(0.134)	(1.203)	(0.043)
1 = Assets cat. 4	0.544***	0.750	0.330***	0.158***	0.766***	0.063***	0.865	0.204***	1.614	0.774***
	(0.123)	(0.185)	(0.079)	(0.088)	(0.049)	(0.041)	(0.281)	(0.070)	(1.275)	(0.047)
1 = Rural/Urban	0.744	1.050	0.852	0.478**	0.910*	1.135	0.740	1.011	2.126	0.973

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	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
	(0.151)	(0.239)	(0.171)	(0.148)	(0.050)	(0.519)	(0.246)	(0.318)	(1.750)	(0.050)
1 = Rural	0.990	1.457	0.663**	0.534*	0.955	0.829	0.992	0.974	3.042*	1.002
	(0.195)	(0.336)	(0.131)	(0.178)	(0.048)	(0.282)	(0.272)	(0.243)	(1.926)	(0.043)
Constant	1.811*	3.224***	0.440***	0.037***	1.954***	16.035***	3.125***	2.786**	0.022***	2.451***
	(0.550)	(1.024)	(0.124)	(0.018)	(0.143)	(12.223)	(1.276)	(1.166)	(0.020)	(0.143)
Num.Obs.	778	778	778	778	778	499	499	499	499	499

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.E. Huila, Colombia

	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.302**	0.983	1.149**	1.041	1.034*	1.021	1.045	1.000	1.209**	1.018
	(0.136)	(0.069)	(0.074)	(0.120)	(0.018)	(0.084)	(0.066)	(0.030)	(0.112)	(0.019)
Share <5 y.o.	0.693	2.488	1.285	0.648	1.139	1.907	1.353	1.000	0.869	1.171
	(0.646)	(2.027)	(0.970)	(1.114)	(0.255)	(1.679)	(0.899)	(0.330)	(0.904)	(0.208)
Share >65 y.o.	2.260	1.118	1.002	1.197	1.097	0.915	0.666	1.000	0.210**	0.904
	(1.437)	(0.583)	(0.520)	(1.223)	(0.149)	(0.481)	(0.269)	(0.196)	(0.162)	(0.103)
1 = Female head	2.114***	1.662**	1.384	1.521	1.169***	1.139	0.768	1.000	1.740	0.982
	(0.547)	(0.360)	(0.293)	(0.552)	(0.068)	(0.291)	(0.158)	(0.100)	(0.589)	(0.058)
1 = Indigenous	0.784	0.693	2.012*	2.726**	1.071	1.892	2.187*	1.000	3.377**	1.339***
	(0.331)	(0.243)	(0.729)	(1.301)	(0.097)	(1.150)	(0.946)	(0.205)	(1.930)	(0.142)
1 = Programs beneficiary	1.264	1.090	1.203	0.759	1.041	1.344	1.179	1.000	0.797	1.026
	(0.345)	(0.243)	(0.260)	(0.285)	(0.058)	(0.334)	(0.244)	(0.098)	(0.256)	(0.063)
1 = Assets cat. 2	1.454	1.177	1.205	0.544	0.992	0.934	0.634	1.000	1.007	0.935
	(0.724)	(0.383)	(0.370)	(0.251)	(0.068)	(0.430)	(0.200)	(0.152)	(0.435)	(0.070)
1 = Assets cat. 3	0.337**	0.978	0.758	0.451	0.861*	0.493	0.532**	1.000	0.506	0.861*
	(0.149)	(0.316)	(0.235)	(0.225)	(0.068)	(0.212)	(0.165)	(0.151)	(0.237)	(0.070)
1 = Assets cat. 4	0.125***	0.988	0.485**	0.399*	0.670***	0.263***	0.233***	1.000	0.393**	0.649***
	(0.055)	(0.328)	(0.155)	(0.218)	(0.063)	(0.106)	(0.076)	(0.153)	(0.187)	(0.059)
1 = Rural/Urban	0.793	1.070	1.647	3.534**	1.079	1.294	0.908	1.000	1.072	0.992
	(0.286)	(0.325)	(0.507)	(2.123)	(0.093)	(0.425)	(0.229)	(0.123)	(0.438)	(0.076)
1 = Rural	0.743	1.249	1.905**	2.821*	1.082	1.223	0.841	1.000	0.778	1.014
	(0.244)	(0.335)	(0.501)	(1.639)	(0.081)	(0.393)	(0.210)	(0.120)	(0.306)	(0.074)
Constant	1.990	1.318	0.270***	0.047***	1.748***	5.000***	1.754	0.000***	0.083***	1.571***
	(1.188)	(0.625)	(0.130)	(0.036)	(0.231)	(2.488)	(0.652)	(0.000)	(0.048)	(0.158)
Num.Obs.	454	454	454	454	454	478	478	478	478	478

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.F. Nariño, Colombia

	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.067	0.951	1.031	1.052	1.014	1.060	0.952	1.000	1.007	0.998
	(0.088)	(0.056)	(0.057)	(0.099)	(0.013)	(0.093)	(0.057)	(0.028)	(0.086)	(0.015)
Share <5 y.o.	3.038	1.069	0.932	1.163	1.110	2.428	5.606**	1.000	1.913	1.590***
	(3.873)	(1.046)	(0.797)	(1.595)	(0.205)	(2.543)	(3.887)	(0.327)	(1.550)	(0.234)
Share >65 y.o.	0.576	0.355**	0.592	2.955*	0.859	1.581	0.772	1.000	1.004	1.004
	(0.272)	(0.150)	(0.261)	(1.861)	(0.107)	(1.133)	(0.369)	(0.231)	(0.683)	(0.128)
1 = Female head	1.127	0.875	1.112	0.977	1.025	1.446	0.975	1.000	1.415	1.029
	(0.289)	(0.188)	(0.232)	(0.300)	(0.050)	(0.385)	(0.187)	(0.093)	(0.399)	(0.051)
1 = Indigenous	0.986	1.386	1.220	0.877	1.042	1.532	1.682**	1.000	1.349	1.122**
	(0.325)	(0.360)	(0.298)	(0.305)	(0.056)	(0.487)	(0.343)	(0.099)	(0.386)	(0.057)
1 = Programs beneficiary	1.959**	0.927	0.794	0.876	0.996	1.164	0.797	1.000	0.670	0.935
	(0.589)	(0.214)	(0.176)	(0.283)	(0.049)	(0.332)	(0.165)	(0.100)	(0.197)	(0.052)
1 = Assets cat. 2	0.990	0.982	1.458	1.021	1.031	0.816	0.961	1.000	0.640	0.962
	(0.397)	(0.281)	(0.402)	(0.370)	(0.058)	(0.355)	(0.241)	(0.121)	(0.207)	(0.054)
1 = Assets cat. 3	0.470*	1.426	1.074	0.652	0.951	0.368**	0.644*	1.000	0.523*	0.845***
	(0.185)	(0.464)	(0.316)	(0.315)	(0.062)	(0.148)	(0.162)	(0.123)	(0.180)	(0.055)
1 = Assets cat. 4	0.166***	0.864	0.381***	0.356	0.655***	0.189***	0.403***	1.000	0.237***	0.652***
	(0.065)	(0.295)	(0.129)	(0.239)	(0.069)	(0.078)	(0.118)	(0.140)	(0.125)	(0.062)
1 = Rural	0.791	2.003***	2.427***	2.360*	1.190***	0.977	0.792	1.000	0.899	0.913*
	(0.252)	(0.528)	(0.623)	(1.160)	(0.079)	(0.296)	(0.167)	(0.102)	(0.271)	(0.050)
Constant	5.049***	1.903	0.706	0.065***	2.086***	5.949***	1.564	0.000***	0.250***	1.738***
	(2.681)	(0.788)	(0.295)	(0.051)	(0.216)	(2.816)	(0.505)	(0.000)	(0.123)	(0.146)
Num.Obs.	466	466	466	466	466	522	522	522	522	522

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.G. Sacatepéquez, Guatemala

			2020					2022		
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.133**	1.068*	1.144***	1.032	1.027***	1.085	1.049	1.136***	1.018	1.036***
	(0.060)	(0.040)	(0.042)	(0.083)	(0.008)	(0.055)	(0.046)	(0.050)	(0.062)	(0.013)
Share <5 y.o.	1.061	1.424	1.006	0.178	1.082	0.866	0.961	0.803	0.236*	0.857
	(0.677)	(0.807)	(0.545)	(0.308)	(0.147)	(0.637)	(0.639)	(0.516)	(0.189)	(0.158)
Share >65 y.o.	0.615	1.145	0.719	1.558	0.909	0.474*	0.242***	0.674	0.738	0.656***
	(0.424)	(0.703)	(0.442)	(2.160)	(0.150)	(0.214)	(0.104)	(0.302)	(0.427)	(0.104)
1 = Female head	1.134	0.932	1.512**	1.699	1.039	1.234	1.040	1.126	1.267	1.058
	(0.221)	(0.162)	(0.263)	(0.699)	(0.045)	(0.257)	(0.190)	(0.214)	(0.310)	(0.059)
1 = Indigenous	1.294	1.078	1.193	1.313	1.080*	0.844	0.824	0.959	0.899	0.964
	(0.272)	(0.196)	(0.212)	(0.588)	(0.048)	(0.197)	(0.171)	(0.200)	(0.241)	(0.058)
1 = Programs beneficiary	1.127	1.487**	1.377*	1.067	1.103**	1.181	1.282	1.159	1.215	1.113
	(0.221)	(0.254)	(0.232)	(0.450)	(0.047)	(0.310)	(0.295)	(0.270)	(0.354)	(0.074)
1 = Assets cat. 2	1.179	1.105	0.887	1.087	1.039	2.844***	2.183***	1.978***	1.287	1.463***
	(0.605)	(0.384)	(0.316)	(0.908)	(0.077)	(0.637)	(0.447)	(0.440)	(0.438)	(0.118)
1 = Assets cat. 3	0.523	1.297	0.436**	0.594	0.935	4.184***	3.098***	4.043***	3.407***	1.777***
	(0.253)	(0.454)	(0.156)	(0.551)	(0.074)	(1.055)	(0.712)	(0.949)	(1.084)	(0.140)
1 = Assets cat. 4	0.266***	1.255	0.369***	1.443	0.830**	15.418***	2.442***	6.414***	5.746***	2.044***
	(0.127)	(0.432)	(0.131)	(1.267)	(0.068)	(9.726)	(0.804)	(2.218)	(2.308)	(0.189)
1 = Rural/Urban	1.039	1.540**	1.070	1.487	1.018	1.154	1.214	0.932	1.354	1.046
	(0.231)	(0.303)	(0.203)	(0.658)	(0.047)	(0.246)	(0.230)	(0.178)	(0.336)	(0.059)
Constant	2.879*	0.812	0.502*	0.021***	1.774***	0.814	0.650*	0.191***	0.079***	1.246**
	(1.673)	(0.328)	(0.208)	(0.022)	(0.175)	(0.199)	(0.151)	(0.049)	(0.030)	(0.110)
Num.Obs.	659	659	659	659	659	649	649	649	649	649

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.H. Alta Verapaz, Guatemala

	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.010	0.940**	1.001	1.028	0.994	1.002	1.050	1.033	1.008	1.017
	(0.036)	(0.029)	(0.028)	(0.041)	(0.006)	(0.039)	(0.040)	(0.040)	(0.045)	(0.013)
Share <5 y.o.	0.761	2.498	1.242	0.532	1.072	1.166	0.611	0.725	1.018	0.891
	(0.497)	(1.485)	(0.624)	(0.533)	(0.111)	(0.588)	(0.292)	(0.358)	(0.561)	(0.146)
Share >65 y.o.	2.944	1.565	1.908	9.097**	1.281*	0.821	0.416*	1.397	2.788*	0.951
	(2.562)	(1.203)	(1.285)	(9.511)	(0.186)	(0.463)	(0.218)	(0.776)	(1.649)	(0.195)
1 = Female head	1.251	0.937	1.150	1.393	1.032	1.135	1.030	1.225	1.201	1.057
	(0.294)	(0.187)	(0.206)	(0.389)	(0.040)	(0.203)	(0.175)	(0.212)	(0.239)	(0.061)
1 = Indigenous	1.807**	1.962***	1.493**	0.760	1.159***	1.010	0.947	1.422*	0.776	1.029
	(0.427)	(0.404)	(0.293)	(0.230)	(0.058)	(0.211)	(0.193)	(0.303)	(0.183)	(0.077)
1 = Programs beneficiary	1.145	1.175	1.090	1.597*	1.036	2.054**	1.272	1.460	1.376	1.176**
	(0.262)	(0.235)	(0.194)	(0.438)	(0.040)	(0.593)	(0.305)	(0.355)	(0.384)	(0.082)
1 = Assets cat. 2	1.139	1.078	1.099	0.956	1.026	1.955**	2.025**	2.021**	1.719	1.497***
	(0.332)	(0.263)	(0.240)	(0.329)	(0.044)	(0.560)	(0.583)	(0.704)	(0.834)	(0.198)
1 = Assets cat. 3	1.133	1.015	0.715	1.176	0.997	2.491***	2.980***	4.815***	3.879***	1.902***
	(0.337)	(0.263)	(0.158)	(0.409)	(0.048)	(0.745)	(0.894)	(1.651)	(1.757)	(0.245)
1 = Assets cat. 4	0.306***	0.461***	0.516**	0.619	0.743***	3.184***	3.640***	6.749***	7.581***	2.213***
	(0.092)	(0.131)	(0.144)	(0.336)	(0.061)	(0.936)	(1.083)	(2.317)	(3.405)	(0.280)
1 = Rural/Urban	1.511	1.430	0.798	0.869	0.991	0.901	1.158	0.920	2.515*	0.946
	(1.124)	(0.849)	(0.409)	(0.743)	(0.094)	(0.530)	(0.674)	(0.477)	(1.288)	(0.127)
1 = Rural	0.897	1.035	0.857	0.995	0.970	0.662*	0.534***	0.625**	1.098	0.825***
	(0.230)	(0.228)	(0.173)	(0.321)	(0.041)	(0.155)	(0.121)	(0.143)	(0.303)	(0.057)
Constant	2.880***	2.127**	1.223	0.074***	2.318***	1.049	0.791	0.186***	0.066***	1.249*
	(1.104)	(0.779)	(0.411)	(0.038)	(0.169)	(0.322)	(0.242)	(0.065)	(0.032)	(0.163)
Num.Obs.	650	650	650	650	650	656	656	656	656	656

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.I. Puebla, Mexico

			2020					2022		
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	0.993	0.991	1.064	1.123**	1.011	1.060	1.012	1.108*	1.060	1.018
	(0.045)	(0.038)	(0.040)	(0.062)	(0.009)	(0.074)	(0.057)	(0.062)	(0.067)	(0.014)
Share <5 y.o.	2.225	0.607	0.674	0.396	1.000	0.387	1.573	0.288*	0.319	0.848
	(1.283)	(0.286)	(0.302)	(0.328)	(0.109)	(0.309)	(1.028)	(0.195)	(0.284)	(0.134)
Share >65 y.o.	0.970	0.708	1.189	2.719	1.035	0.712	1.582	5.103***	0.785	1.128
	(0.562)	(0.355)	(0.590)	(2.103)	(0.139)	(0.539)	(0.905)	(3.124)	(0.581)	(0.149)
1 = Female head	1.525**	1.110	1.245	1.386	1.070*	1.304	1.128	1.382	1.054	1.064
	(0.293)	(0.184)	(0.202)	(0.377)	(0.044)	(0.349)	(0.245)	(0.297)	(0.274)	(0.058)
1 = Indigenous	0.852	1.071	1.470**	1.872**	1.074*	1.625	1.336	1.677**	1.193	1.155**
	(0.175)	(0.193)	(0.248)	(0.489)	(0.044)	(0.494)	(0.306)	(0.373)	(0.335)	(0.068)

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(*continued*)

	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
1 = Programs beneficiary	1.345	0.839	1.100	0.964	1.008	0.891	0.814	0.846	2.209**	1.047
	(0.359)	(0.170)	(0.225)	(0.317)	(0.050)	(0.281)	(0.191)	(0.195)	(0.684)	(0.062)
1 = Assets cat. 2	0.877	1.147	0.925	1.457	1.010	0.653	0.705	0.729	1.438	0.954
	(0.261)	(0.267)	(0.201)	(0.485)	(0.046)	(0.298)	(0.224)	(0.214)	(0.514)	(0.063)
1 = Assets cat. 3	0.469***	1.031	0.641**	1.483	0.920	0.495*	0.582*	0.377***	0.733	0.790***
	(0.127)	(0.237)	(0.136)	(0.487)	(0.047)	(0.207)	(0.174)	(0.111)	(0.284)	(0.058)
1 = Assets cat. 4	0.199***	0.485***	0.246***	0.520	0.637***	0.142***	0.298***	0.174***	0.890	0.580***
	(0.054)	(0.116)	(0.061)	(0.252)	(0.051)	(0.056)	(0.089)	(0.054)	(0.332)	(0.057)
1 = Rural/Urban	0.815	0.679	1.453	2.330	0.956					
	(0.328)	(0.266)	(0.659)	(2.499)	(0.129)					
1 = Rural	1.425	0.812	1.561	1.495	1.029					
	(0.641)	(0.339)	(0.740)	(1.676)	(0.142)					
Constant	5.399***	3.648***	0.643	0.016***	2.251***	6.556***	2.368**	0.894	0.107***	2.290***
	(2.742)	(1.755)	(0.341)	(0.019)	(0.338)	(3.334)	(0.886)	(0.335)	(0.048)	(0.208)
Num.Obs.	730	730	730	730	730	451	451	451	451	451

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 2.J. Tabasco, Mexico

	2020					2022				
	Diet	Savings/ assets	Human capital	Migration	Count	Diet	Savings/ assets	Human capital	Migration	Count
Household size	1.077	1.047	1.072	0.958	1.012	1.054	1.226***	1.072	1.406***	1.037**
	(0.060)	(0.049)	(0.052)	(0.070)	(0.011)	(0.103)	(0.096)	(0.076)	(0.136)	(0.017)
Share <5 y.o.	2.082	4.630***	1.703	1.488	1.297**	1.061	0.894	1.506	0.210*	0.976
	(1.324)	(2.580)	(0.892)	(1.148)	(0.137)	(0.966)	(0.615)	(0.937)	(0.185)	(0.127)
Share >65 y.o.	1.092	0.650	0.720	0.679	0.817	1.955	0.763	2.169	1.367	1.035
	(0.716)	(0.344)	(0.370)	(0.589)	(0.106)	(1.786)	(0.454)	(1.308)	(1.215)	(0.125)
1 = Female head	1.400*	1.575***	1.289	1.361	1.087**	1.456	0.963	0.980	1.568	1.029
	(0.278)	(0.265)	(0.208)	(0.401)	(0.044)	(0.443)	(0.217)	(0.213)	(0.479)	(0.051)
1 = Indigenous	1.534*	1.142	1.396*	1.057	1.068	0.729	1.054	1.403	1.070	1.008
	(0.362)	(0.214)	(0.250)	(0.318)	(0.043)	(0.250)	(0.267)	(0.359)	(0.365)	(0.056)
1 = Programs beneficiary	1.032	1.385*	0.789	1.226	1.035	1.637	1.172	0.932	0.539*	0.995
	(0.236)	(0.266)	(0.144)	(0.360)	(0.046)	(0.516)	(0.287)	(0.216)	(0.190)	(0.055)
1 = Assets cat. 2	0.898	1.185	0.740	0.691	0.930	0.909	1.391	0.858	0.945	1.015
	(0.364)	(0.311)	(0.190)	(0.264)	(0.045)	(0.496)	(0.460)	(0.261)	(0.364)	(0.059)
1 = Assets cat. 3	0.505*	1.551*	0.567**	0.910	0.921	0.373*	0.894	0.527**	0.977	0.875*
	(0.188)	(0.411)	(0.142)	(0.352)	(0.048)	(0.192)	(0.298)	(0.167)	(0.404)	(0.063)
1 = Assets cat. 4	0.131***	0.749	0.222***	0.400**	0.616***	0.091***	0.198***	0.127***	0.216***	0.453***
	(0.047)	(0.189)	(0.057)	(0.185)	(0.043)	(0.045)	(0.069)	(0.045)	(0.121)	(0.049)
Constant	4.805***	1.032	1.406	0.126***	2.407***	8.199***	0.987	1.320	0.050***	2.432***
	(1.986)	(0.324)	(0.445)	(0.069)	(0.169)	(5.311)	(0.427)	(0.541)	(0.027)	(0.235)
Num.Obs.	723	723	723	723	723	455	455	455	455	455

*p < 0.1, **p < 0.05, ***p < 0.01.

Appendix 3. Most important strategies according to variables analyzed

Household characteristic	Strategy with which the household characteristic is associated in most territories	Territories where the household characteristic is associated with the number of strategies used by households (Poisson model)
Assets (wealth index)	Modifying the diet (lesser probability) *True in:* *Round 1: all territories* *Round 2: all territories*	Fewer strategies (the higher the wealth quartile, the fewer the strategies used) *True in:* *Round 1: all* *Round 2: all*
Household size	Decrease in spending on education and health (greater probability) *True in:* *Round 1: Huila, Guayas, Sacatepéquez* *Round 2: Araucanía, Los Lagos, Guayas, Los Ríos, Sacatepéquez, Puebla*	More strategies (the larger the household, the greater the number of strategies used) *True in:* *Round 1: Huila, Guayas, Los Ríos, Sacatepéquez* *Round 2: Araucanía, Los Lagos, Guayas, Los Ríos, Sacatepéquez, Tabasco*
Indigenous	Decrease in spending on education and health (greater probability) *True in:* *Round 1: Los Lagos, Huila, Alta Verapaz, Puebla y Tabasco* *Round 2: Alta Verapaz y Puebla*	More strategies (Indigenous households are associated with a larger number of strategies) *True in:* *Round 1: Los Lagos, Alta Verapaz y Puebla* *Round 2: Huila, Nariño y Puebla*
Proportion of children under age 5	Dissaving (greater probability) *True in:* *Round 1: Los Ríos y Tabasco* *Round 2: Nariño*	More strategies (households with a larger number of young children are associated with a larger number of strategies) *True in:* *Round 1: Guayas, Los Ríos y Tabasco* *Round 2: Nariño*

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Household characteristic	Strategy with which the household characteristic is associated in most territories	Territories where the household characteristic is associated with the number of strategies used by households (Poisson model)
Proportion of adults over age 65	Dissaving (lesser probability) *True in:* *Round 1: Nariño* *Round 2: Los Lagos, Los Ríos, Sacatepéquez, Alta Verapaz* Migration (greater probability) *True in:* *Round 1: Nariño, Guayas, Los Ríos y Alta Verapaz* *Round 2: Guayas*	Fewer strategies (households with a larger proportion of older adults are associated with a smaller number of strategies) *True in:* *Round 1: none* *Round 2: Araucanía, Los Lagos, Sacatepéquez* More strategies (households with a larger proportion of older adults are associated with with a larger number of strategies) *True in:* *Round 1: Guayas, Los Ríos, Alta Verapaz* *Round 2: none*
Female head of household	Modifying the diet (greater probability) *True in:* *Round 1: Huila, Puebla y Tabasco* *Round 2: Guayas y Los Ríos*	More strategies (households headed by women use more strategies) *True in:* *Round 1: Araucanía, Huila, Puebla y Tabasco* *Round 2: Guayas*
Programs	Modifying the diet (greater probability) *True in:* *Round 1: Araucanía, Los Lagos y Nariño* *Round 2: Alta Verapaz*	More strategies (households benefitting from programs use more strategies) *True in:* *Round 1: Sacatepéquez* *Round 2: Alta Verapaz*
Rural or rural-urban area*	Decrease in spending on education and health (lesser probability) *True in:* *Round 1: Araucanía (rural area), Los Lagos (rural-urban area), Los Ríos (rural area)* *Round 2: Alta Verapaz (rural area)* Decrease in spending on education and health (greater probability) *True in:* *Round 1: Huila (rural area), Nariño (rural area)* *Round 2: Los Lagos (rural area)*	Fewer strategies (rural or rural-urban households use fewer strategies) *True in:* *Round 1: Los Lagos (rural and rural-urban areas) y Los Ríos (rural-urban area)* *Round 2: Nariño (rural area) y Alta Verapaz (rural area)* More strategies (rural or rural-urban households use more strategies) *True in:* *Round 1: Nariño (rural area)* *Round 2: Los Lagos (rural area)*

*In all territories, the reference category is the urban area, except for Nariño, where it is the rural-urban area, as there are are no persons surveyed in urban areas.

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