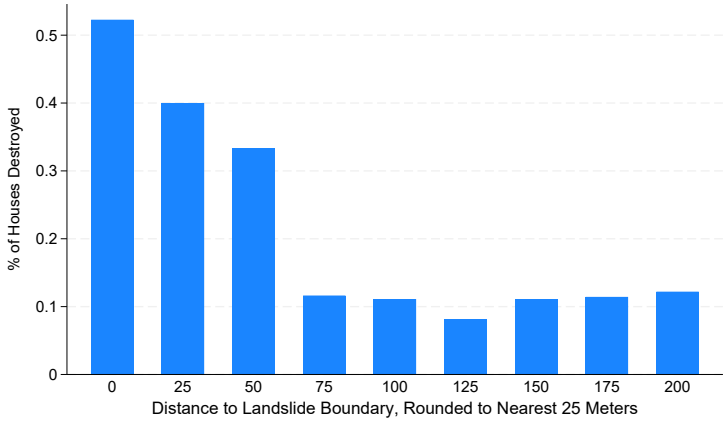
Online Appendix for "Disastrous Displacement: The Long-Run Impacts of Landslides" by Travis Baseler and Jakob Hennig

Contents

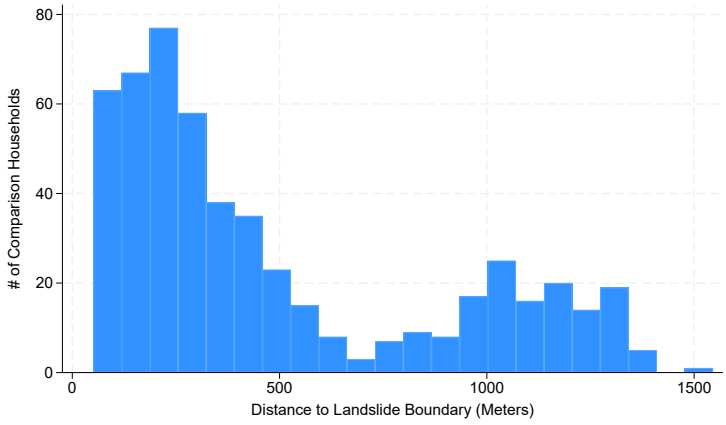
A Additional Tables and Figures

Figure A1: Reported Home Destruction Rate, by Distance to Landslide Boundary



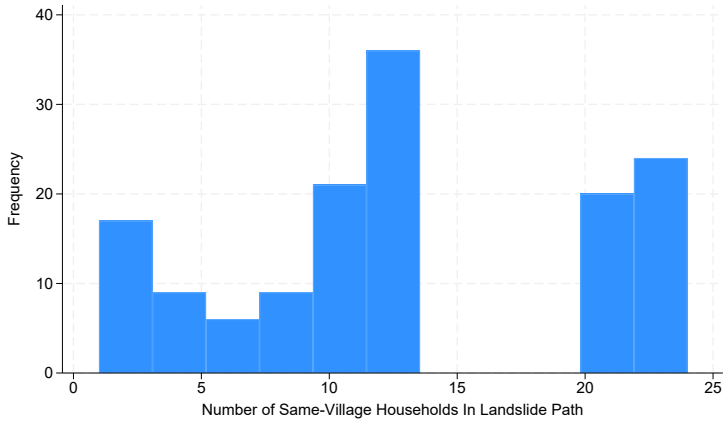
Notes: Houses located within the boundary coded as distance = 0. Distance rounded to nearest 25 meters.

Figure A2: Distribution of Distance to Landslide Boundary, Comparison Group



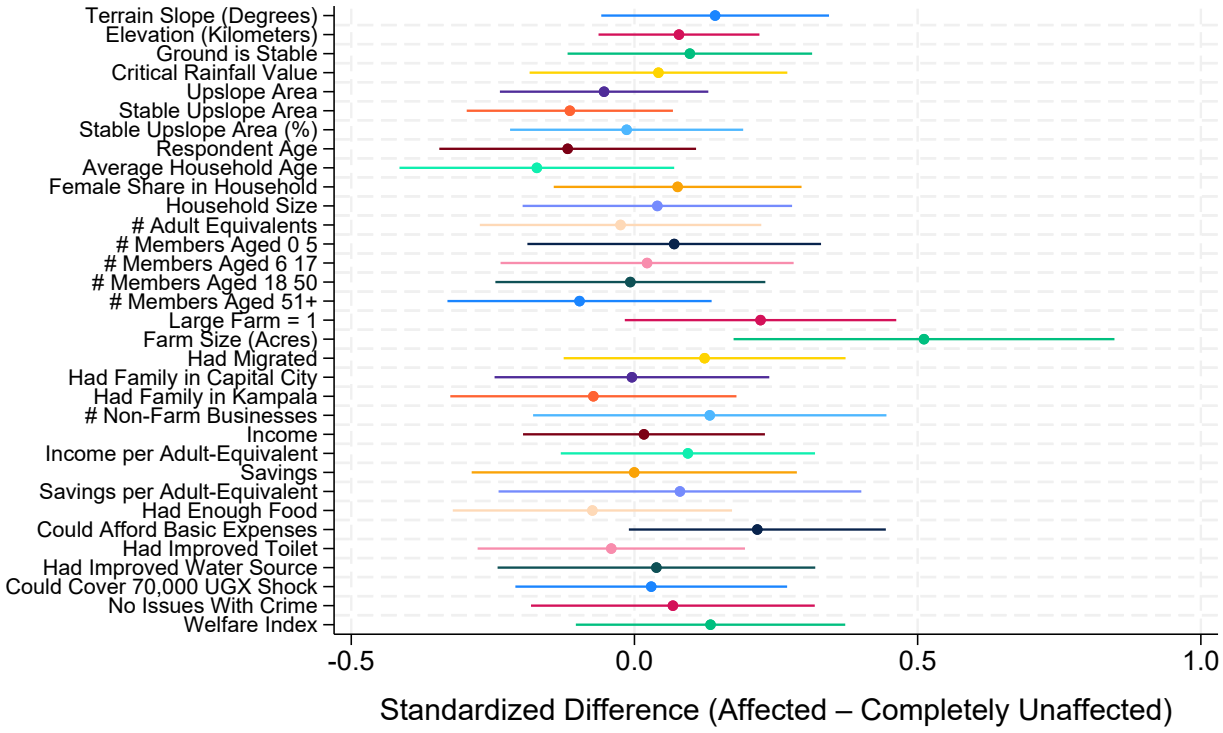
Notes: Sample includes households in Bududa district categorized as outside of a landslide path. The range is 56 to 1,546 meters, with a median of 321 and a mean of 489.

Figure A3: Distribution of Number of Same-Village Households In Landslide Path



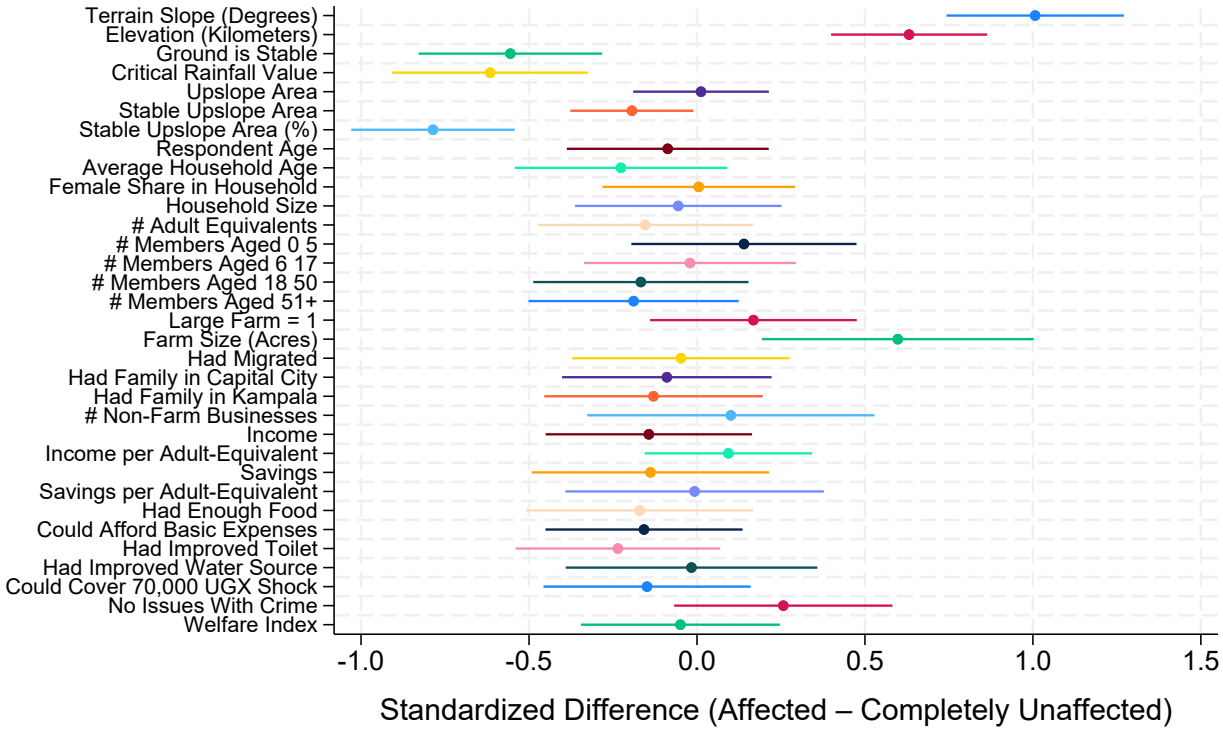
Notes: An observation is a household residing in a landslide path.

Figure A4: Balance on Pre-Landslide Characteristics (Compared to Households in Villages With No Landslide)



Notes: Each coefficient is recovered from a regression of a pre-landslide characteristic on an indicator for residing in a landslide path, residing in the same village as a landslide path (but not in the path itself), a landslide-event fixed effect, and geologic controls (for non-geologic variables). All variables are standardized to mean 0, standard deviation 1 among households not in a landslide path. Bars show 95% confidence intervals.

Figure A5: Balance on Pre-Landslide Characteristics (Compared to Households More Than 1 Km Away From a Landslide Path)



Notes: Each coefficient is recovered from a regression of a pre-landslide characteristic on an indicator for residing in a landslide path, residing within 1 kilometer of a landslide path (but not in the path itself), a landslide-event fixed effect, and geologic controls (for non-geologic variables). All variables are standardized to mean 0, standard deviation 1 among households not in a landslide path. Bars show 95% confidence intervals.

Table A1: Balance on Pre-Landslide Characteristics

	Unconditional Within-Site Difference	*p*-Value	+ Panel A Geologic Controls	*p*-Value	Mean (Outside Path)	N
Panel A: Geology						
Terrain Slope (Degrees)	0.08	0.38	.	.	19.05	625
Elevation (Kilometers)	0.10	0.13	.	.	1.64	625
Ground is Stable	0.07	0.49	.	.	0.89	625
Critical Rainfall Value	0.05	0.66	.	.	0.23	625
Upslope Area	-0.09	0.24	.	.	1,495	625
Stable Upslope Area	-0.08	0.24	.	.	10.79	625
Stable Upslope Area (%)	0.07	0.44	.	.	0.84	625
Panel B: Demographics						
Respondent Age	-0.08	0.48	-0.07	0.53	36.29	613
Average Household Age	-0.09	0.39	-0.08	0.46	27.72	604
Female Share in Household	0.08	0.42	0.09	0.37	0.47	613
Household Size	0.06	0.62	0.08	0.49	5.05	613
# Adult Equivalents	-0.02	0.84	0.00	0.98	3.47	613
# Members Aged 0 – 5	0.09	0.46	0.08	0.49	1.27	604
# Members Aged 6 – 17	-0.04	0.77	-0.01	0.91	1.65	604
# Members Aged 18 – 50	0.04	0.70	0.06	0.59	1.69	604
# Members Aged 51+	-0.05	0.67	-0.05	0.68	0.40	604
Large Farm = 1	0.17	0.15	0.17	0.13	0.54	625
Farm Size (Acres)	0.45	0.00	0.46	0.00	2.31	625
Had Migrated	0.17	0.16	0.17	0.16	0.40	625
Had Family in Capital City	0.07	0.54	0.09	0.45	0.52	625
Had Family in Kampala	0.05	0.70	0.07	0.54	0.29	625
Panel C: Income and Welfare						
# Non-Farm Businesses	0.17	0.27	0.16	0.30	1.10	625
Income	0.02	0.86	0.04	0.72	33.66	625
Income per Adult-Equivalent	0.07	0.57	0.07	0.53	14.32	625
Savings	0.12	0.39	0.13	0.35	57.49	625
Savings per Adult-Equivalent	0.17	0.27	0.16	0.29	19.70	625
Had Enough Food	-0.12	0.30	-0.12	0.32	0.88	621
Could Afford Basic Expenses	0.10	0.33	0.10	0.37	0.81	601
Had Improved Toilet	-0.07	0.54	-0.05	0.66	0.42	625
Had Improved Water Source	0.06	0.67	0.03	0.81	0.04	625
Could Cover 70,000 UGX Shock	-0.03	0.76	-0.05	0.68	0.68	625
No Issues With Crime	-0.03	0.77	-0.05	0.71	0.78	625
Welfare Index	0.04	0.74	0.04	0.75	0.16	625

Notes: An observation is a household (based on pre-landslide structure). Column 1 shows unconditional differences in standard-deviation units between households inside and outside of landslide paths, estimated with a landslide-event fixed effect. Column 3 adds linear controls for all geologic variables shown in Panel A. Columns 2 and 4 show *p*-values from Column 1 and 3 regressions, respectively, testing for equal means, and Column 6 shows the number of observations. All variables in Panels B and C measured retrospectively. Responses of "Don't Know"are coded as missing. Monetary units are USD/month. Geologic variables are in meters or meters squared unless otherwise indicated.

Table A2: Tests of Selection Into Survey Sample

	Dep. Var.: Surveyed = 1					
Age of Household Head	0.001					0.001
	(0.001)					(0.001)
	[0.24]					[0.33]
Household Size		0.004				0.003
		(0.004)				(0.004)
		[0.34]				[0.47]
Landslide			-0.032			0.001
			(0.026)			(0.028)
			[0.23]			[0.97]
Currently Displaced				-0.162		-0.159
				(0.038)		(0.039)
				[0.00]		[0.00]
Bushika Event					-0.017	-0.020
					(0.028)	(0.029)
					[0.56]	[0.49]
Buwali Event					0.012	0.008
					(0.025)	(0.026)
					[0.63]	[0.76]
Nametsi Event					-0.047	-0.050
					(0.030)	(0.030)
					[0.11]	[0.09]
Observations	663	672	675	675	675	663

Notes: An observation is a household located in Bududa prior to the landslides we study. Each column shows a regression of an indicator for whether the household was surveyed on one or more administrative variables. For unsurveyed households with missing pre-landslide GPS coordinates, we impute *Landslide* to be 1 if they are listed as displaced in administrative data, and 0 otherwise. *Currently Displaced* indicates that the household is listed as residing in a different village than it was before the landslide. Age and household size are missing from a small number of administrative records. Robust standard errors in parentheses; two-sided p-values in brackets.

Table A3: Impacts of Landslides on Welfare Index Components

Financial Health	Enough Food	Can Afford Basic Expenses	No Financial Emergency	No Education Disruption	Not Worried About Finances	Robust to Financial Shock	Weekly Food Spending
Landslide	-0.09	-0.14	-0.04	-0.03	-0.04	-0.06	0.03
	(0.05)	(0.06)	(0.05)	(0.06)	(0.05)	(0.05)	(0.37)
	[0.08]	[0.01]	[0.40]	[0.61]	[0.46]	[0.24]	[0.93]
Observations	623	608	609	526	606	624	625
Comparison Mean	0.76	0.58	0.76	0.57	0.27	0.33	2.24

Mental Health	Usually Happy	Usually Not Nervous	Satisfied With Life	Optimistic About Life
Landslide	-0.08	-0.14	-0.18	0.01
	(0.06)	(0.06)	(0.06)	(0.06)
	[0.16]	[0.02]	[0.00]	[0.82]
Observations	625	609	608	604
Comparison Mean	0.64	0.55	0.54	0.42

Amenities	Improved Toilet	Improved Drinking Water	Improved Cooking Fuel	Residence is Safe	# of Friends	Average Local Education
Landslide	-0.03	-0.04	-0.00	-0.06	-0.78	-0.06
	(0.04)	(0.03)	(0.00)	(0.05)	(0.37)	(0.12)
	[0.43]	[0.22]	[0.32]	[0.20]	[0.04]	[0.65]
Observations	625	625	625	625	625	625
Comparison Mean	0.44	0.11	0.00	0.81	3.25	-0.08

Income	Monthly Total Income	Yearly Non-Farm Income	Monthly Savings
Landslide	-5.62	-26.47	-3.26
	(5.20)	(9.19)	(1.13)
	[0.28]	[0.00]	[0.00]
Observations	625	625	569
Comparison Mean	20.97	49.59	5.18

See Table 2 for variable definitions and specification notes, and Section 3.3 for variable definitions. Outcomes in each panel are the components of a welfare index. *Comparison Mean* shows the mean value of the outcome variable in the *Landslide* = 0 group. Robust standard errors in parentheses. Two-sided p-values in brackets.

Table A4: Landslide Impacts on Household Composition

Composition at Time of Survey:	Household Size	# Aged 0 – 5	# Aged 6 – 17	# Aged 18 – 50	# Aged 51 +
Landslide	-0.137	-0.039	0.154	-0.124	-0.061
	(0.279)	(0.095)	(0.177)	(0.113)	(0.050)
	[0.62]	[0.69]	[0.38]	[0.27]	[0.22]
Observations	618	618	618	618	618
Outcome Mean for Landslide = 0	4.46	0.66	1.54	1.76	0.50
Members Added After Landslide:	# Members Added	# Added 0 – 5	# Added 6 – 17	# Added 18 – 50	# Added 51 +
Landslide	0.505	0.075	0.328	0.096	-0.009
	(0.183)	(0.085)	(0.114)	(0.069)	(0.017)
	[0.01]	[0.38]	[0.00]	[0.16]	[0.60]
Observations	609	609	609	609	609
Outcome Mean for Landslide = 0	1.00	0.40	0.32	0.25	0.03
# Children Born After Landslide:	1 Year Later	2 Years Later	3 Years Later	4 Years Later	5+ Years Later
Landslide	0.085	0.030	-0.025	0.067	0.140
	(0.048)	(0.039)	(0.024)	(0.033)	(0.087)
	[0.08]	[0.44]	[0.31]	[0.04]	[0.11]
Observations	609	609	609	609	609
Outcome Mean for Landslide = 0	0.10	0.06	0.07	0.04	0.25

See Table 2 for variable definitions and specification notes. The top panel show landslide impacts on household composition at the time of the survey in 2022. The middle panel shows landslide impacts on the number of household members added since the landslide. All age breakdowns use age at the time of the survey. The third panel shows landslide impacts on the number of children born (restricting to children or grandchildren of the household head), by year, following the landslide event. All regressions include a landslide-event fixed effect and pre-landslide controls chosen through double-lasso regression. Robust standard errors in parentheses; two-sided p-values in brackets.

Table A5: Heterogeneity in Landslide Impacts, Retrospective Measures

Heterogeneity Dimension:	Age of Respondent	Household Size	# Members Aged 0 – 5	# Members Aged 6 – 17	# Members Aged 18 – 50	# Members Aged 51 +
Landslide × *X*	-0.00	-0.01	0.09	-0.00	-0.13	-0.10
	(0.01)	(0.04)	(0.06)	(0.06)	(0.09)	(0.17)
	[0.50]	[0.78]	[0.15]	[0.98]	[0.12]	[0.56]
Landslide	-0.19	-0.30	-0.48	-0.37	-0.15	-0.33
	(0.27)	(0.23)	(0.14)	(0.14)	(0.17)	(0.11)
	[0.47]	[0.19]	[0.00]	[0.01]	[0.37]	[0.00]
X	-0.01	-0.03	-0.08	-0.05	0.01	-0.01
	(0.00)	(0.02)	(0.03)	(0.02)	(0.03)	(0.07)
	[0.00]	[0.02]	[0.01]	[0.05]	[0.83]	[0.85]
Observations	625	625	625	625	625	625

Heterogeneity Dimension:	Farm Size (Acres)	Ever Migrated	Family in Capital City	# Non-Farm Businesses	Income per Adult Equivalent	Savings per Adult Equivalent
Landslide × *X*	-0.02	-0.19	-0.07	0.17	-0.00	-0.00
	(0.04)	(0.19)	(0.18)	(0.27)	(0.00)	(0.00)
	[0.52]	[0.32]	[0.72]	[0.53]	[0.56]	[0.20]
Landslide	-0.35	-0.30	-0.34	-0.56	-0.35	-0.31
	(0.12)	(0.12)	(0.13)	(0.31)	(0.10)	(0.11)
	[0.01]	[0.02]	[0.01]	[0.07]	[0.00]	[0.00]
X	0.04	0.03	-0.07	-0.07	0.00	0.00
	(0.03)	(0.08)	(0.08)	(0.11)	(0.00)	(0.00)
	[0.11]	[0.71]	[0.39]	[0.56]	[0.72]	[0.36]
Observations	625	625	625	625	625	625

See Table 2 for variable definitions and specification notes. Each column is a regression of a standardized welfare index (comprising 20 welfare measures) on *Landslide*, a retrospective dimension of heterogeneity *X*, and their interaction. All regressions include a landslide-event fixed effect and pre-landslide controls chosen through double-lasso regression. Robust standard errors in parentheses; two-sided *p*-values in brackets.

Table A6: Heterogeneity in Landslide Impacts by Years Since Landslide

	Yearly Non-Farm Income	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide × Years Since Landslide	1.252	0.062	0.042	-0.008	0.017	0.037
	(2.510)	(0.026)	(0.027)	(0.021)	(0.021)	(0.024)
	[0.62]	[0.02]	[0.12]	[0.70]	[0.40]	[0.12]
Landslide	-33.865	-0.638	-0.551	-0.126	-0.337	-0.601
	(16.093)	(0.209)	(0.223)	(0.156)	(0.128)	(0.185)
	[0.04]	[0.00]	[0.01]	[0.42]	[0.01]	[0.00]
Years Since Landslide	-1.093	0.006	-0.024	0.017	-0.005	0.003
	(1.370)	(0.016)	(0.016)	(0.014)	(0.013)	(0.015)
	[0.42]	[0.71]	[0.13]	[0.21]	[0.69]	[0.85]
Observations	625	625	625	625	625	625
Outcome Mean for Landslide = 0	49.59	-0.00	0.00	0.00	-0.00	0.00

	Enough Food	Can Afford Basic Expenses	Not Worried About Finances	Usually Not Nervous	Satisfied With Life	# of Friends
Landslide × Years Since Landslide	0.030	0.064	0.003	0.016	0.012	0.098
	(0.012)	(0.012)	(0.012)	(0.014)	(0.014)	(0.092)
	[0.01]	[0.00]	[0.83]	[0.26]	[0.38]	[0.29]
Landslide	-0.300	-0.568	-0.050	-0.223	-0.248	-1.379
	(0.103)	(0.101)	(0.091)	(0.114)	(0.113)	(0.646)
	[0.00]	[0.00]	[0.59]	[0.05]	[0.03]	[0.03]
Years Since Landslide	-0.017	-0.011	0.019	-0.001	0.002	0.084
	(0.006)	(0.007)	(0.007)	(0.008)	(0.008)	(0.079)
	[0.01]	[0.14]	[0.01]	[0.90]	[0.81]	[0.29]
Observations	623	608	606	609	608	625
Outcome Mean for Landslide = 0	0.76	0.58	0.27	0.55	0.54	3.25

See Table 2 for variable definitions and specification notes. Sample includes Bududa district only. Each column is a regression on *Landslide*, the number of years elapsed since the date of the landslide, and their interaction. These regressions exclude the landslide-event fixed effect, which would absorb variation in years elapsed. Pre-landslide controls chosen through double-lasso regression. Robust standard errors in parentheses; two-sided p-values in brackets.

Table A7: Heterogeneity in Landslide Impacts by Years Since Landslide (Full Sample)

	Yearly Non-Farm Income	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide × Years Since Landslide	-0.539	0.068	0.026	-0.024	0.000	0.026
	(2.581)	(0.024)	(0.025)	(0.020)	(0.023)	(0.023)
	[0.83]	[0.00]	[0.29]	[0.23]	[0.99]	[0.26]
Landslide	-9.801	-0.724	-0.328	0.062	-0.173	-0.420
	(16.682)	(0.166)	(0.178)	(0.137)	(0.136)	(0.165)
	[0.56]	[0.00]	[0.07]	[0.65]	[0.20]	[0.01]
Years Since Landslide	0.369	0.014	-0.014	0.004	0.017	0.002
	(1.210)	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)
	[0.76]	[0.24]	[0.25]	[0.71]	[0.12]	[0.87]
Observations	912	912	912	912	912	912
Outcome Mean for Landslide = 0	47.75	0.01	-0.03	0.08	0.00	0.09

	Enough Food	Can Afford Basic Expenses	Not Worried About Finances	Usually Not Nervous	Satisfied With Life	# of Friends
Landslide × Years Since Landslide	0.029	0.059	0.011	0.017	0.006	0.134
	(0.011)	(0.011)	(0.011)	(0.014)	(0.013)	(0.087)
	[0.01]	[0.00]	[0.32]	[0.23]	[0.66]	[0.12]
Landslide	-0.301	-0.493	-0.124	-0.194	-0.141	-1.844
	(0.085)	(0.082)	(0.072)	(0.095)	(0.094)	(0.554)
	[0.00]	[0.00]	[0.08]	[0.04]	[0.13]	[0.00]
Years Since Landslide	0.000	-0.005	0.021	-0.003	0.003	-0.031
	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.068)
	[0.93]	[0.37]	[0.00]	[0.67]	[0.59]	[0.65]
Observations	910	891	888	892	891	912
Outcome Mean for Landslide = 0	0.75	0.59	0.27	0.53	0.54	3.34

See Table 2 for variable definitions and specification notes. Sample includes all three study districts. Each column is a regression on *Landslide*, the number of years elapsed since the date of the landslide, and their interaction. These regressions exclude the landslide-event fixed effect, which would absorb variation in years elapsed. Pre-landslide controls chosen through double-lasso regression. Robust standard errors in parentheses; two-sided *p*-values in brackets.

Table A8: Impacts of Landslides (Excluding Displaced Households That Did Not Return to Their Pre-Displacement Residence)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.18	0.09	0.18	0.29	163	0.20	0.20
	(0.07)	(0.06)	(0.05)	(0.08)	(80)	(0.08)	(0.08)
	[0.01]	[0.13]	[0.00]	[0.00]	[0.04]	[0.01]	[0.01]
Observations	512	512	512	512	512	512	512
Outcome Mean for Landslide = 0	0.08	0.06	0.76	0.13	159	0.08	0.08
p-val: Displaced Sample = Full Sample	0.02	0.02	0.37	0.05	0.20	0.00	0.30
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.15	0.16	0.01	0.16	0.15	0.03	-0.11
	(0.05)	(0.06)	(0.04)	(0.05)	(0.04)	(0.03)	(0.07)
	[0.00]	[0.00]	[0.89]	[0.00]	[0.00]	[0.40]	[0.14]
Observations	1,514	1,514	1,514	1,514	1,514	1,514	1,514
Outcome Mean for Landslide = 0	0.30	0.22	0.13	0.20	0.12	0.06	0.65
p-val: Displaced Sample = Full Sample	0.10	0.17	0.92	0.01	0.02	0.28	0.17
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.13	-0.06	0.06	-0.00	-0.28	-0.13	-0.15
	(0.08)	(0.09)	(0.17)	(0.16)	(0.09)	(0.07)	(0.13)
	[0.11]	[0.47]	[0.74]	[0.98]	[0.00]	[0.07]	[0.25]
Observations	504	504	512	512	512	512	512
Outcome Mean for Landslide = 0	0.58	0.55	-0.01	0.01	-0.02	-0.04	-0.01
p-val: Displaced Sample = Full Sample	0.89	0.05	0.04	0.01	0.18	0.20	0.04

See Table 2 for variable definitions and specification notes. Households displaced by landslides are excluded from the sample—unless they returned to their pre-displacement residence—to approximate a research design that misses the displaced. *p*-values testing coefficient equivalence to those in the full sample (Table 2) estimated using Stata's *suest* command, controlling for all variables chosen by the lasso procedure in either regression. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided *p*-values in brackets.

Table A9: Impacts of Landslides (Excluding Displaced Households That Did Not Return to Their Origin Village)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.31	0.16	0.17	0.38	329	0.44	0.44
	(0.06)	(0.05)	(0.04)	(0.06)	(83)	(0.06)	(0.06)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	582	582	582	582	582	582	582
Outcome Mean for Landslide = 0	0.11	0.07	0.77	0.14	172	0.15	0.15
p-val: Displaced Sample = Full Sample	0.74	0.10	0.29	0.39	0.18	0.01	0.00
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.09	0.10	-0.01	0.11	0.11	0.01	-0.09
	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.02)	(0.05)
	[0.03]	[0.03]	[0.82]	[0.01]	[0.00]	[0.63]	[0.04]
Observations	1,699	1,699	1,699	1,699	1,699	1,699	1,699
Outcome Mean for Landslide = 0	0.31	0.22	0.13	0.20	0.12	0.06	0.66
p-val: Displaced Sample = Full Sample	0.82	0.49	0.21	0.03	0.02	0.35	0.10
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.18	-0.21	-0.29	-0.31	-0.26	-0.20	-0.44
	(0.06)	(0.06)	(0.13)	(0.12)	(0.08)	(0.09)	(0.11)
	[0.01]	[0.00]	[0.02]	[0.01]	[0.00]	[0.02]	[0.00]
Observations	571	571	582	582	582	582	582
Outcome Mean for Landslide = 0	0.58	0.54	-0.01	-0.00	-0.03	-0.01	-0.01
p-val: Displaced Sample = Full Sample	0.20	0.29	0.24	0.95	0.09	0.68	0.24

See Table 2 for variable definitions and specification notes. Households displaced by landslides are excluded from the sample—unless they returned to anywhere within their origin village—to approximate a research design that misses the displaced. *p*-values testing coefficient equivalence to those in the full sample (Table 2) estimated using Stata's *suest* command, controlling for all variables chosen by the lasso procedure in either regression. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided *p*-values in brackets.

Table A10: Selection Into Displacement

	Unconditional Within-Site Difference	*p*-Value	N
Panel A: Geology			
Terrain Slope (Degrees)	0.17	0.34	625
Elevation (Kilometers)	0.02	0.83	625
Ground is Stable	-0.25	0.11	625
Critical Rainfall Value	-0.15	0.35	625
Upslope Area	0.05	0.64	625
Stable Upslope Area	0.00	0.97	625
Stable Upslope Area (%)	-0.14	0.47	625
Panel B: Demographics			
Respondent Age	-0.33	0.15	613
Average Household Age	-0.25	0.19	604
Female Share in Household	0.10	0.66	613
Household Size	0.33	0.09	613
# Adult Equivalents	0.16	0.44	613
# Members Aged 0 – 5	0.33	0.13	604
# Members Aged 6 – 17	0.18	0.46	604
# Members Aged 18 – 50	0.01	0.95	604
# Members Aged 51+	0.01	0.95	604
Large Farm = 1	0.06	0.80	625
Farm Size (Acres)	0.19	0.57	625
Had Migrated	0.24	0.32	625
Had Family in Capital City	0.15	0.53	625
Had Family in Kampala	0.33	0.14	625
Panel C: Income and Welfare			
# Non-Farm Businesses	0.24	0.28	625
Income	0.28	0.05	625
Income per Adult-Equivalent	0.30	0.04	625
Savings	0.11	0.67	625
Savings per Adult-Equivalent	0.16	0.51	625
Had Enough Food	0.22	0.43	621
Could Afford Basic Expenses	-0.07	0.74	601
Had Improved Toilet	0.51	0.01	625
Had Improved Water Source	0.24	0.20	625
Could Cover 70,000 UGX Shock	0.50	0.04	625
No Issues With Crime	-0.03	0.90	625
Welfare Index	0.53	0.01	625

Notes: An observation is a household (based on pre-landslide structure) and each row is a regression. Column 1 shows unconditional differences in standard-deviation units between households displaced by a landslide and those not displaced, controlling for an indicator for residing in a landslide path and a landslide-event fixed effect. Columns 2 shows two-sided *p*-values testing whether the coefficients in Column 1 are equal to zero. Column 3 shows the number of observations. Variables in Panels B and C are measured retrospectively. Responses of "Don't Know" are coded as missing.

Table A11: Displaced households that did not return to the origin faced the greatest landslide damages.

	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs
Ordinary Least Squares					
Displaced × Landslide	0.20	0.23	-0.08	0.23	-25
	(0.13)	(0.13)	(0.06)	(0.12)	(137)
	[0.14]	[0.09]	[0.18]	[0.07]	[0.86]
Displaced × Returned to Origin × Landslide	-0.07	-0.18	0.02	-0.13	258
	(0.12)	(0.12)	(0.07)	(0.11)	(152)
	[0.58]	[0.14]	[0.81]	[0.22]	[0.09]
Landslide	0.21	0.13	0.21	0.30	175
	(0.09)	(0.08)	(0.02)	(0.10)	(102)
	[0.02]	[0.10]	[0.00]	[0.00]	[0.09]
Observations	625	625	625	625	625
Outcome Mean for Landslide = 0	0.12	0.07	0.77	0.15	177
Post Double Lasso					
Displaced × Landslide	0.20	0.23	-0.10	0.23	-52
	(0.13)	(0.13)	(0.06)	(0.12)	(131)
	[0.14]	[0.08]	[0.12]	[0.07]	[0.69]
Displaced × Returned to Origin × Landslide	-0.07	-0.18	0.02	-0.13	248
	(0.12)	(0.12)	(0.07)	(0.11)	(145)
	[0.58]	[0.14]	[0.78]	[0.22]	[0.09]
Landslide	0.21	0.13	0.21	0.30	194
	(0.09)	(0.08)	(0.03)	(0.10)	(97)
	[0.02]	[0.10]	[0.00]	[0.00]	[0.04]
Observations	625	625	625	625	625
Outcome Mean for Landslide = 0	0.12	0.07	0.77	0.15	177

Notes: See Table 4 for variable definitions and specification notes. Each column is a regression with a landslide damage indicator (the same outcomes analyzed in Table 2) as the outcome. *Displaced* = 1 if the entire household was forced to move outside its home village by a landslide. *Returned to Origin* = 1 if the household was displaced but returned to the origin village by the time of the survey. All regressions include a landslide-event fixed effect. Pre-landslide controls in the lower panel are chosen through double-lasso regression. Robust standard errors in parentheses; two-sided p-values in brackets.

Table A12: Balance on Pre-Landslide Characteristics with Respect to the Instrument for Co-Displaced Network Size

	Unconditional Within-Site Difference	*p*-Value	N
Panel A: Geology			
Terrain Slope (Degrees)	-0.01	0.73	166
Elevation (Kilometers)	-0.00	0.96	277
Ground is Stable	0.03	0.14	166
Critical Rainfall Value	0.03	0.20	166
Upslope Area	-0.01	0.30	166
Stable Upslope Area	0.00	0.86	166
Stable Upslope Area (%)	0.02	0.22	166
Panel B: Demographics			
Respondent Age	-0.02	0.11	270
Average Household Age	-0.02	0.07	262
Female Share in Household	0.00	0.89	268
Household Size	-0.02	0.12	268
# Adult Equivalents	-0.03	0.03	268
# Members Aged 0 – 5	0.00	0.84	262
# Members Aged 6 – 17	-0.01	0.41	262
# Members Aged 18 – 50	-0.02	0.14	262
# Members Aged 51+	-0.03	0.07	262
Large Farm = 1	0.00	0.79	277
Farm Size (Acres)	-0.02	0.42	277
Had Migrated	-0.01	0.41	277
Had Family in Capital City	0.02	0.43	277
Had Family in Kampala	0.02	0.28	277
Panel C: Income and Welfare			
# Non-Farm Businesses	-0.01	0.71	277
Income	-0.02	0.63	277
Income per Adult-Equivalent	0.00	0.87	277
Savings	-0.02	0.16	277
Savings per Adult-Equivalent	0.00	0.97	277
Had Enough Food	-0.02	0.09	277
Could Afford Basic Expenses	0.01	0.63	257
Had Improved Toilet	-0.02	0.24	277
Had Improved Water Source	0.01	0.56	277
Could Cover 70,000 UGX Shock	-0.03	0.02	277
No Issues With Crime	-0.02	0.20	277
Welfare Index	-0.02	0.16	277

Notes: Sample includes ever-displaced households from Bududa, Sironko, and Manafwa districts. An observation is a household (based on pre-landslide structure) and each row is a regression. Column 1 shows coefficients recovered from a regression of a standardized pre-landslide characteristic on *# Households in Landslide Path* $\times$ *Landslide*, controlling for *Landslide* and a landslide-event fixed effect. Columns 2 shows two-sided *p*-values testing whether the coefficients in Column 1 are equal to zero, accounting for clustering at the pre-landslide village level. Column 3 shows the number of observations. Variables in Panels B and C are measured retrospectively. Responses of "Don't Know" are coded as missing.

Table A13: IV Falsification Tests

Panel A: Damage and Destruction	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs
# Households in Landslide Path	0.001	0.009	-0.005	0.014	-12
× Landslide	(0.007)	(0.007)	(0.002)	(0.008)	(12)
	[0.87]	[0.21]	[0.03]	[0.06]	[0.32]
Observations	277	277	277	277	277
Outcome Mean	0.51	0.15	0.90	0.46	343
Clusters	30	30	30	30	30
Panel B: Assistance and Displacement	Received Aid	Displaced by Govt	Displaced Within Region	Destination Human Capital	# Urban Migrants
# Households in Landslide Path	-0.002	-0.006	-0.001	0.018	0.013
× Landslide	(0.007)	(0.006)	(0.004)	(0.013)	(0.019)
	[0.81]	[0.30]	[0.87]	[0.18]	[0.49]
Observations	277	277	277	277	277
Outcome Mean	0.69	0.26	0.76	-0.19	0.52
Clusters	30	30	30	30	30

See Table 4 for specification notes and variable definitions. Sample includes displaced households from Bududa, Manafwa, and Sironko districts. All regressions include a control for *Landslide* and a landslide-event fixed effect (not shown). *# Households in Landslide Path* is the number of households in the pre-landslide village residing within the landslide boundary. *Displaced Within Region* = 1 if the household was displaced somewhere in Bududa, Manafwa, or Sironko districts. Pre-landslide controls are chosen through double lasso regression. Standard errors in parentheses are clustered at the pre-landslide village level. Two-sided p-values in brackets.

Table A14: Households displaced with others in their social network obtain better outcomes at the destination (Bududa sample only).

	Settled at Destination		Non-Farm Livelihood		Welfare Index		
	OLS	2SLS	OLS	2SLS	OLS	2SLS	First Stage
Displaced Network Size	0.09	0.79	0.12	0.44	0.15	-0.03	
× Landslide	(0.03)	(0.28)	(0.06)	(0.46)	(0.07)	(0.41)	
	[0.00]	[0.00]	[0.06]	[0.34]	[0.02]	[0.94]	
Destination Human Capital	-0.00	0.06	0.03	-0.02	0.01	0.08	
× Landslide	(0.08)	(0.17)	(0.21)	(0.20)	(0.15)	(0.20)	
	[0.96]	[0.71]	[0.89]	[0.91]	[0.92]	[0.69]	
# Households in Landslide Path							0.04
× Landslide							(0.01)
							[0.00]
Observations	166	166	73	73	166	166	166
Outcome Mean	0.26	0.26	0.32	0.32	-0.10	-0.10	0.45
Clusters		20		14		20	20
First-Stage F-Stat		16		2		16	

See Table 5 for specification notes and variable definitions. Sample includes displaced households from Bududa district. 2SLS estimates instrument *Displaced Network Size* × *Landslide* with *# Households in Landslide Path* × *Landslide*. All regressions include a control for *Landslide*, a landslide-event fixed effect, and pre-landslide controls chosen through double-lasso regression from a set including the five damage variables shown in Table 2 Panel A and their interactions with *Landslide*.

Table A15: Landslides lead to less positive migrant selection on past migration experience, urban networks, and farm size.

Outcome: Is an Urban Migrant	Coefficient (Unaffected)	Coefficient (Affected)	Difference (2–1)	p-Value on Difference	N
Individual Characteristics					
Age	-0.06	-0.06	0.00	0.99	1,814
Female	0.02	0.04	0.02	0.51	1,814
Education	0.06	0.00	-0.05	0.17	1,814
Had Migrated	-0.02	-0.03	-0.00	0.85	1,814
Had Migrated to City	-0.02	-0.02	-0.00	0.90	1,814
Had Migrated to Big City	-0.01	-0.04	-0.02	0.31	1,814
Had Migrated to Mbale	-0.01	-0.03	-0.02	0.01	1,814
Had Migrated to Kampala	-0.00	0.01	0.01	0.73	1,814
Had Migrated to Nairobi	-0.02	-0.05	-0.03	0.00	1,814
Household Characteristics					
Household Size	0.03	0.05	0.02	0.62	1,814
# Adult Equivalents	0.05	0.07	0.02	0.55	1,814
Large Farm = 1	0.03	-0.01	-0.05	0.25	1,814
Farm Size (Acres)	0.04	-0.01	-0.04	0.08	1,814
Had Migrated	0.01	0.00	-0.01	0.87	1,814
Had Family in Capital City	0.02	0.02	0.00	0.98	1,814
Had Family in Kampala	0.02	-0.05	-0.08	0.01	1,814
Income	0.01	0.02	0.01	0.71	1,814
Income per Adult-Equivalent	-0.01	-0.01	-0.01	0.80	1,814
Savings	0.01	0.00	-0.01	0.76	1,814
Savings per Adult-Equivalent	-0.00	-0.02	-0.02	0.32	1,814
Welfare Index	0.00	-0.01	-0.01	0.65	1,814

Notes: Sample includes households in Bududa district at the time of a landslide. An observation is an individual residing in a pre-landslide household. Each row is a regression. All characteristics are standardized to mean 0, sd 1 in the unaffected group. Columns 1 and 2 show coefficients from regressions of an indicator for whether the individual is an urban migrant at the time of the survey on a pre-landslide characteristic, an indicator for whether the household was hit by a landslide, and the interaction of those two variables. Columns 3 and 4 show the difference in coefficients for affected compared to unaffected households and the p-value on that difference, respectively. "Big City" includes capitals plus Mombasa and Kisumu. All regressions control for a landslide-event fixed effect and cluster standard errors at the household level.

Table A16: Direct and Indirect Impacts of Landslides

Panel A: Indirect Effects Within Village	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.13	-0.13	-0.17	-0.34	-0.28	-0.22	-0.42
	(0.06)	(0.06)	(0.12)	(0.11)	(0.10)	(0.09)	(0.11)
	[0.02]	[0.03]	[0.16]	[0.00]	[0.01]	[0.01]	[0.00]
Landslide Within Village	0.01	0.12	0.10	-0.07	-0.20	-0.01	-0.10
	(0.04)	(0.04)	(0.09)	(0.09)	(0.10)	(0.08)	(0.08)
	[0.73]	[0.01]	[0.23]	[0.44]	[0.05]	[0.87]	[0.24]
Observations	608	608	625	625	625	625	625
Outcome Mean in Omitted Group	0.55	0.48	-0.08	0.00	0.03	-0.01	-0.01

Panel B: Indirect Effects Within 1 Km of Site	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.06	-0.12	-0.18	-0.36	-0.43	-0.09	-0.51
	(0.08)	(0.08)	(0.15)	(0.15)	(0.12)	(0.12)	(0.14)
	[0.45]	[0.14]	[0.25]	[0.02]	[0.00]	[0.44]	[0.00]
Landslide Within 1 Kilometer	0.09	0.07	0.03	-0.05	-0.27	0.16	-0.15
	(0.06)	(0.06)	(0.12)	(0.13)	(0.09)	(0.11)	(0.11)
	[0.15]	[0.27]	[0.79]	[0.70]	[0.00]	[0.16]	[0.16]
Observations	608	608	625	625	625	625	625
Outcome Mean in Omitted Group	0.56	0.51	0.05	0.01	0.05	-0.04	0.10

See Table 2 for variable definitions and specification notes. *Landslide Within 1 Km* = 1 if the household was located within 1 kilometer of any landslide site, but outside the direct path. *Landslide Within Village* = 1 if any household in the same village was directly affected by a landslide, and the household was not in a direct path. Robust standard errors in parentheses. Two-sided p-values in brackets.

B Robustness of Landslide Impact Estimates

Table B1: Impacts of Landslides (Excluding Geologic and Demographic Controls)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.33	0.21	0.16	0.40	275	0.50	0.24
	(0.05)	(0.05)	(0.03)	(0.05)	(69)	(0.05)	(0.04)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	625	625	625	625	625	625	625
Outcome Mean for Landslide = 0	0.12	0.07	0.77	0.15	177	0.18	0.03
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.11	0.11	0.01	0.08	0.08	0.00	-0.06
	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.02)	(0.04)
	[0.01]	[0.00]	[0.64]	[0.04]	[0.02]	[0.81]	[0.12]
Observations	1,814	1,814	1,814	1,814	1,814	1,814	1,814
Outcome Mean for Landslide = 0	0.31	0.22	0.12	0.21	0.13	0.06	0.66
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.12	-0.17	-0.22	-0.29	-0.22	-0.20	-0.36
	(0.06)	(0.06)	(0.11)	(0.11)	(0.09)	(0.09)	(0.10)
	[0.05]	[0.00]	[0.05]	[0.01]	[0.02]	[0.03]	[0.00]
Observations	608	608	625	625	625	625	625
Outcome Mean for Landslide = 0	0.58	0.54	-0.00	0.00	0.00	-0.00	0.00

See Table 2 for variable definitions and specification notes. Estimates control for a landslide-event fixed effect but not pre-landslide geologic or demographic controls. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided *p*-values in brackets.

Table B2: Impacts of Landslides (Including All Geologic and Demographic Controls)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.33	0.21	0.15	0.40	277	0.47	0.24
	(0.06)	(0.05)	(0.04)	(0.05)	(68)	(0.05)	(0.04)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	625	625	625	625	625	625	625
Outcome Mean for Landslide = 0	0.12	0.07	0.77	0.15	177	0.18	0.03
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.08	0.09	-0.00	0.06	0.07	-0.01	-0.08
	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.02)	(0.04)
	[0.04]	[0.01]	[0.94]	[0.13]	[0.03]	[0.76]	[0.04]
Observations	1,814	1,814	1,814	1,814	1,814	1,814	1,814
Outcome Mean for Landslide = 0	0.31	0.22	0.12	0.21	0.13	0.06	0.66
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.14	-0.17	-0.26	-0.30	-0.15	-0.29	-0.41
	(0.06)	(0.06)	(0.11)	(0.11)	(0.09)	(0.09)	(0.10)
	[0.02]	[0.00]	[0.02]	[0.01]	[0.08]	[0.00]	[0.00]
Observations	608	608	625	625	625	625	625
Outcome Mean for Landslide = 0	0.58	0.54	-0.00	0.00	0.00	-0.00	0.00

See Table 2 for variable definitions and specification notes. Estimates use the full vector of pre-landslide geologic and demographic controls (without LASSO selection) and a landslide-event fixed effect. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided p-values in brackets.

Table B3: Impacts of Landslides (Controlling for Distance to Landslide Boundary)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.32	0.22	0.20	0.35	263	0.43	0.22
	(0.06)	(0.05)	(0.04)	(0.06)	(72)	(0.06)	(0.04)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	625	625	625	625	625	625	625
Outcome Mean for Landslide = 0	0.12	0.07	0.77	0.15	177	0.18	0.03
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.09	0.11	0.00	0.06	0.08	-0.01	-0.08
	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.02)	(0.04)
	[0.03]	[0.00]	[0.93]	[0.15]	[0.02]	[0.72]	[0.06]
Observations	1,814	1,814	1,814	1,814	1,814	1,814	1,814
Outcome Mean for Landslide = 0	0.31	0.22	0.12	0.21	0.13	0.06	0.66
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.16	-0.19	-0.22	-0.23	-0.07	-0.24	-0.28
	(0.06)	(0.06)	(0.12)	(0.12)	(0.08)	(0.11)	(0.11)
	[0.01]	[0.00]	[0.06]	[0.06]	[0.44]	[0.02]	[0.01]
Observations	608	608	625	625	625	625	625
Outcome Mean for Landslide = 0	0.58	0.54	-0.00	0.00	0.00	-0.00	0.00

See Table 2 for variable definitions and specification notes. Estimates control for the linear distance to the landside boundary, winsorized at 1%. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided p-values in brackets.

Table B4: Impacts of Landslides (Under Alternative Landslide Measure Excluding 50-Meter Buffer)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide (No Buffer)	0.34	0.26	0.13	0.42	203	0.52	0.34
	(0.08)	(0.08)	(0.04)	(0.07)	(96)	(0.06)	(0.07)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.03]	[0.00]	[0.00]
Observations	625	625	625	625	625	625	625
Outcome Mean for Landslide = 0	0.15	0.08	0.79	0.18	203	0.22	0.04
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide (No Buffer)	0.08	0.08	-0.01	0.04	0.03	-0.02	-0.07
	(0.05)	(0.05)	(0.03)	(0.05)	(0.04)	(0.02)	(0.06)
	[0.12]	[0.08]	[0.83]	[0.43]	[0.40]	[0.25]	[0.22]
Observations	1,814	1,814	1,814	1,814	1,814	1,814	1,814
Outcome Mean for Landslide = 0	0.32	0.23	0.13	0.23	0.14	0.07	0.65
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide (No Buffer)	-0.20	-0.22	-0.24	-0.28	-0.05	-0.57	-0.37
	(0.07)	(0.08)	(0.15)	(0.16)	(0.12)	(0.13)	(0.14)
	[0.01]	[0.01]	[0.12]	[0.07]	[0.70]	[0.00]	[0.01]
Observations	608	608	625	625	625	625	625
Outcome Mean for Landslide = 0	0.58	0.53	-0.02	-0.02	-0.03	-0.01	-0.03

See Table 2 for variable definitions and specification notes. *Landslide (No Buffer)* = 1 if the household was located within an exact landslide path at the time of the landslide. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided *p*-values in brackets.

Table B5: Impacts of Landslides (Under Alternative Landslide Measure Using Self-Reported Damage to Home)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Home Damaged by Landslide	0.00	0.22	0.11	0.46	520	0.39	0.15
	(.)	(0.04)	(0.03)	(0.05)	(74)	(0.05)	(0.04)
	[.]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	625	625	625	625	625	625	625
Outcome Mean for Landslide = 0	0.00	0.06	0.78	0.13	123	0.19	0.04
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Home Damaged by Landslide	0.07	0.05	-0.03	0.05	0.02	-0.04	-0.00
	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)	(0.01)	(0.03)
	[0.03]	[0.11]	[0.14]	[0.15]	[0.46]	[0.01]	[0.88]
Observations	1,814	1,814	1,814	1,814	1,814	1,814	1,814
Outcome Mean for Landslide = 0	0.31	0.23	0.13	0.22	0.14	0.07	0.65
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Home Damaged by Landslide	-0.05	-0.25	-0.31	-0.41	0.16	-0.10	-0.25
	(0.05)	(0.05)	(0.10)	(0.10)	(0.13)	(0.08)	(0.10)
	[0.38]	[0.00]	[0.00]	[0.00]	[0.25]	[0.22]	[0.01]
Observations	608	608	625	625	625	625	625
Outcome Mean for Landslide = 0	0.58	0.56	0.04	0.03	-0.05	-0.01	0.00

See Table 2 for variable definitions and specification notes. *Home Damaged by Landslide* = 1 if the respondent reported that their home was damaged from a landslide. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided *p*-values in brackets.

Table B6: Impacts of Landslides (In Broader Sample Including Manafwa and Sironko Sites)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.37	0.17	0.16	0.36	139	0.47	0.32
	(0.04)	(0.04)	(0.03)	(0.04)	(50)	(0.04)	(0.04)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.01]	[0.00]	[0.00]
Observations	912	912	912	912	912	912	912
Outcome Mean for Landslide = 0	0.17	0.06	0.78	0.19	205	0.22	0.05
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.04	0.04	-0.02	0.04	0.04	-0.01	-0.03
	(0.03)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
	[0.19]	[0.13]	[0.30]	[0.14]	[0.11]	[0.42]	[0.28]
Observations	2,683	2,683	2,683	2,683	2,683	2,683	2,683
Outcome Mean for Landslide = 0	0.33	0.23	0.12	0.23	0.14	0.07	0.67
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.14	-0.13	-0.31	-0.21	-0.09	-0.19	-0.30
	(0.04)	(0.05)	(0.09)	(0.09)	(0.07)	(0.07)	(0.08)
	[0.00]	[0.01]	[0.00]	[0.02]	[0.20]	[0.01]	[0.00]
Observations	891	891	912	912	912	912	912
Outcome Mean for Landslide = 0	0.59	0.58	0.04	0.02	0.04	-0.00	0.07

See Table 2 for variable definitions and specification notes. Sample includes two additional landslide sites in Manafwa and Sironko districts, where geologic data (except for elevation) are not available. Results estimated through (1) including all controls, except missing geologic controls, in LASSO regressions. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided p-values in brackets.

Table B7: Lee Bounds on Household-Level Landslide Impact Estimates

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide (Lower Bound)	0.29	0.19	0.11	0.36	239	0.45	0.20
	(0.05)	(0.05)	(0.04)	(0.05)	(66)	(0.05)	(0.06)
	[0.00]	[0.00]	[0.01]	[0.00]	[0.00]	[0.00]	[0.00]
Landslide (Upper Bound)	0.32	0.22	0.15	0.40	309	0.49	0.27
	(0.06)	(0.06)	(0.03)	(0.06)	(81)	(0.06)	(0.06)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	675	675	675	675	675	675	675

Panel B: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide (Lower Bound)	-0.15	-0.19	-0.25	-0.33	-0.21	-0.23	-0.40
	(0.06)	(0.06)	(0.12)	(0.12)	(0.09)	(0.08)	(0.11)
	[0.01]	[0.00]	[0.04]	[0.01]	[0.02]	[0.00]	[0.00]
Landslide (Upper Bound)	-0.11	-0.15	-0.14	-0.24	-0.10	-0.09	-0.27
	(0.06)	(0.06)	(0.12)	(0.12)	(0.09)	(0.11)	(0.11)
	[0.08]	[0.01]	[0.26]	[0.04]	[0.27]	[0.38]	[0.01]
Observations	675	675	675	675	675	675	675

Notes: An observation is a household (based on pre-landslide structure). Each column shows upper and lower Lee bounds (Lee, 2009) with bootstrapped standard errors and *p*-values estimated using the Stata command *leebounds*. A landslide-event fixed effect and selected pre-landslide controls from a lasso regression are partialled out prior to estimation. *Landslide* is imputed for unsurveyed households: unsurveyed households listed as displaced in administrative data are coded as affected by the landslide, while unsurveyed households coded as living in the pre-landslide village are listed as not affected. Standard errors in parentheses; two-sided *p*-values in brackets.

Table B8: Impacts of Landslides (Weighted to Account for Predicted Non-Response)

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.32	0.22	0.15	0.41	270	0.50	0.24
	(0.05)	(0.05)	(0.03)	(0.05)	(67)	(0.05)	(0.04)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	625	625	625	625	625	625	625
Outcome Mean for Landslide = 0	0.12	0.07	0.77	0.15	177	0.18	0.03
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.09	0.10	0.01	0.08	0.08	0.00	-0.07
	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)	(0.02)	(0.04)
	[0.01]	[0.00]	[0.81]	[0.03]	[0.01]	[0.83]	[0.09]
Observations	1,814	1,814	1,814	1,814	1,814	1,814	1,814
Outcome Mean for Landslide = 0	0.31	0.22	0.12	0.21	0.13	0.06	0.66
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.14	-0.18	-0.21	-0.30	-0.19	-0.22	-0.37
	(0.06)	(0.06)	(0.11)	(0.11)	(0.08)	(0.09)	(0.10)
	[0.01]	[0.00]	[0.05]	[0.00]	[0.02]	[0.01]	[0.00]
Observations	608	608	625	625	625	625	625
Outcome Mean for Landslide = 0	0.58	0.56	0.04	0.03	-0.05	-0.01	0.00

See Table 2 for variable definitions and specification notes. Observations are weighted by the inverse probability of being surveyed, estimated on administrative household data through logistic lasso regression. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided *p*-values in brackets.

C Systematic Review of Natural Disaster Literature

In this section, we describe our review of the natural disasters literature. We searched 16 top economics journals for any paper with "disaster" (or related words, using a built-in feature) in the abstract using the tool *EconLit*.[36] This preliminary search identified 120 papers. For each paper, we assessed whether it fulfilled the following criteria: 1) is set in a low- or middle-income country, 2) measures impacts on individual or household economic outcomes such as income, consumption, assets, or human capital, 3) is about a natural disaster as opposed to human disaster such as famine or economic depression,[37] and 4) is not purely theoretical, or restricted to macro-economic outcomes such as regional output.[38] We also evaluated 47 additional disaster-related papers that were not identified by the search tool but which we were otherwise aware of. Only one of these papers satisfied the four inclusion criteria listed above.

In total, our search identified 5 papers studying individual economic impacts of a natural disaster in a low- or middle-income country. Gignoux and Menéndez (2016) study earthquakes in Indonesia and find positive long-run effects on productivity, driven partly by substantial external aid receipts. Caruso and Miller (2015), Caruso (2017), and Paudel and Ryu (2018) study the impacts of exposure to natural disasters based on location at birth and disaster timing, and find negative impacts on children's human capital outcomes.[39] Deuchert and Felfe (2015) find that typhoon damages are associated with worse children's educational attainment in panel data.

D Additional Details on Data Collection

To identify sites for our study, we worked together with local leaders with insight into recent landslide events. They advised us on the sites of the largest landslides in the last 10 years. The Bududa

[36] We searched the following journals: American Economic Review, Econometrica, Quarterly Journal of Economics, Journal of Political Economy, Review of Economic Studies, American Economic Journal: Applied Economics, American Economic Journal: Economic Policy, American Economic Review: Insights, Journal of Development Economics, Journal of Labor Economics, Journal of Public Economics, Review of Economics and Statistics, Economic Journal, Journal of the European Economic Association, Journal of Urban Economics, and Journal of Human Resources. We included all years available in the search tool.

[37] Our review criteria did not turn up studies of drought, although a related literature studies the impact of drought and other shocks on migration (Halliday, 2006, Strobl and Valfort, 2015). Ligon (2023) shows that shocks including droughts, floods, and pests increase a consumption aggregate in rural Uganda, arguing that effects operate through local prices. Two additional papers evaluated impacts on firms using microdata (De Mel, McKenzie and Woodruff, 2012, Pelli et al., 2023).

[38] Criteria 1, 2, and 3 jointly exclude the vast majority of papers. Many papers turned up in this search used natural disasters as a shock to study asset pricing or business cycles, but did not measure impacts on affected households. The majority of this literature also focuses on high-income countries.

[39] The findings in Caruso (2017) suggest that including the displaced population should mitigate estimated negative disaster impacts, in contrast to our results. However, disaster displacement and prior voluntary migration are not distinguishable in census data.

sites include the large Nametsi landslide in 2010, an equally destructive event in Bumwalukani parish in 2012, and two more recent events: the 2019 landslides in Bushika and Buwali sub-counties, which together killed close to 100 residents and displaced more than 1,000. The two sites outside Bududa are a 2018 landslide in the Kaato sub-county of Manafwa and a 2017 landslide in the Bufupa parish of Sironko. These leaders shared lists of households that resided in villages in or near these sites at the time of the event. These lists form our study sample.

For each of these landslide sites, we established the extent of the survey perimeter by identifying directly hit villages and neighboring villages that could serve as control areas. We largely limited the scope of the survey to the villages on the slopes where the landslide occurred, to have an *ex-ante* homogenous population of affected and unaffected households. Specifically, we asked local experts to identify the full set of villages impacted by the set of landslides we were studying, plus any villages on the same slopes to serve as a comparison. Our main estimates do not apply any screening rules to the sample identified by these experts, and the good degree of balance and the robustness of our findings to various sample cuts suggest that this sampling rule succeeded at identifying a suitable control group. Note that there is relatively little clustering of dwellings, as farmers in this region work the fields directly surrounding their homestead, rather than living closely together in a village surrounded by fields. This increases the risk that some households will be hit by a landslide compared to clustering of dwellings in stable locations. Villages in this setting are relatively small: the average village size in our data is 26 households.

In our analysis, we rely on village identifiers for four purposes: defining displacement (as being forced outside of one's origin village) and return, measuring average pre-landslide education at the location level, constructing our instrumental variable using village-level landslide destruction, and as a proxy for indirect landslide effects. The identifiers we use are self-reported by respondents in surveys.

After identifying study villages, we worked with our local contacts to collect information on the households living in these study villages before the landslide events. For this purpose, they accessed past registers of households living in the villages, available at the offices of local village leaders. We could therefore attempt a survey of the full population which lived in these affected and neighboring villages before the landslide event.

For households still living in their original dwelling, coordinates were recorded by the survey team during interviews. For households who had moved, the coordinates at the pre-landslide location were recorded during subsequent field visits with assistance from local contacts. In cases where the original site was not safely accessible, staff were instructed to take a GPS reading as close to the original location as safely possible.

E Additional Details on the Landslide Risk Model and Variables

Our regressions and balance tables include data provided to us by the corresponding author of Claessens et al. (2007). These include a 10-meter-by-10-meter Digital Elevation Model (DEM) and soil physical parameters—a grid of topographic variables. These variables comprise the input to the Claessens et al. (2007) landslide risk model, called LAPSUS-LS:[40] elevation, slope, distance to the watershed, direction, and soil type. The output of the model, which we also obtained, is a risk measure based on these features. It determines a critical rainfall threshold at which the plot would become unstable, risking a shallow landslide which is typical in the region.

The statistical relationship between topographic features and landslide risk is determined by a calibration of the model to 81 earlier landslides in the same region. Historical rainfall also enters the calibration, to determine the critical threshold. The authors find that landslides are likelier at a relatively high distance from the watershed, and at the transition between steeper and gentler slope sections.

The critical rainfall value represents the risk that a specific grid point becomes unstable. However, households residing at this point are also at risk from landslides originating farther upslope. To measure this risk, we develop statistics for the upslope area of each grid point. Based on the DEM, we use the QGIS/SAGA "Upslope Area" tool to calculate the size of the upslope area as well as the size and percentage of the upslope area which is classified as "stable" in the LAPSUS-LS model.

[40] LArge Particle Simulation of Urban avalancheS - LandSlide. This is an adaptation of the more general LAPSUS model appropriate to our specific context.

F Corrections for Spatial Correlation

By nature, the destruction caused by landslides is spatially clustered and so may give rise to spatial correlation in regression residuals. Table F1 presents Moran tests for spatial correlation in residuals for all of our household destruction, displacement, and welfare outcomes presented in Table 2. These Moran tests suggest the presence of modest spatial correlation overall. Out of 14 variables, we reject the null hypothesis of independent and identically distributed error terms at the 10% level for seven when we include no controls except a landslide fixed effect. Adding the control vector X from (1) in estimation reduces the number of null rejections to two out of 14. Table F2 presents standard errors adjusted for three-dimensional spatial correlation using the method of Conley (1999), applying a cutoff of 1 kilometer. These adjusted standard errors are very similar to their unadjusted versions. Table F3 presents standard errors adjusted for three-dimension spatial correlation using the spatial correlation principal components method described in Müller and Watson (2022). Again, these adjusted standard errors are very similar to their unadjusted versions.

Table F1: Moran Tests for Spatial Correlation in Residuals

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land/Crops Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Moran p-Value (No Controls)	0.31	0.21	0.07	0.00	0.43	0.01	0.13
Moran p-Value (All Controls)	0.37	0.14	0.16	0.00	0.84	0.11	0.58
Observations	625	625	625	625	625	625	625
Panel B: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Moran p-Value (No Controls)	0.00	0.13	0.03	0.51	0.01	0.83	0.05
Moran p-Value (All Controls)	0.10	0.48	0.18	0.28	0.02	0.24	0.20
Observations	608	608	625	625	625	625	625

Notes: An observation is a household (based on pre-landslide structure). Moran p-values estimated from regressions controlling for a landslide-event fixed effect (with or without the control vector X) using Stata command *estat moran* using an inverse-distance weighting matrix with 1-kilometer truncation.

Table F2: Conley-adjusted standard errors are similar to unadjusted versions.

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.33	0.21	0.16	0.40	275	0.50	0.26
	(0.05)	(0.05)	(0.04)	(0.05)	(67)	(0.07)	(0.07)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Observations	625	625	625	625	625	625	625
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.11	0.11	0.01	0.08	0.08	0.00	-0.06
	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.02)	(0.04)
	[0.01]	[0.00]	[0.64]	[0.04]	[0.01]	[0.81]	[0.11]
Observations	625	1,814	1,814	1,814	1,814	1,814	1,814
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.12	-0.17	-0.22	-0.29	-0.22	-0.20	-0.36
	(0.07)	(0.06)	(0.12)	(0.11)	(0.09)	(0.07)	(0.09)
	[0.07]	[0.00]	[0.07]	[0.01]	[0.02]	[0.01]	[0.00]
Observations	1,814	625	625	625	625	625	625

Standard errors and *p*-values adjusted for three-dimensional spatial correlation using the method of Conley (1999), estimated using the Stata command *x_ols2*, applying a cutoff of 0.01 degrees (approximately 1 kilometer). All regressions include a landslide-event fixed effect. Two-sided *p*-values in brackets.

Table F3: Standard errors adjusted using Müller and Watson (2022) are similar to unadjusted versions.

Panel A: Household Destruction and Displacement	House Damaged	Casualty	Land Damaged	Any Other Damage	Spending on Repairs	Household Displaced	Returned to Origin
Landslide	0.33	0.21	0.16	0.40	275	0.50	0.26
	(0.03)	(0.06)	(0.03)	(0.03)	(51)	(0.11)	(0.07)
	[0.00]	[0.02]	[0.00]	[0.00]	[0.00]	[0.00]	[0.01]
Observations	625	625	625	625	625	625	625
Panel B: Individual Migration and Employment	Migrated Anywhere	Migrated to City	Migrated to Big City	Current Migrant	Remained in City	Remained in Big City	Economically Active
Landslide	0.11	0.11	0.01	0.08	0.08	0.00	-0.06
	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.03)	(0.03)
	[0.03]	[0.04]	[0.73]	[0.10]	[0.10]	[0.87]	[0.08]
Observations	1,814	1,814	1,814	1,814	1,814	1,814	1,814
Panel C: Household Welfare Measures	Can Afford Basic Expenses	Satisfied With Life	Financial Health Index	Mental Health Index	Local Amenity Index	Income Index	Overall Welfare Index
Landslide	-0.12	-0.17	-0.22	-0.29	-0.22	-0.20	-0.36
	(0.10)	(0.02)	(0.08)	(0.07)	(0.09)	(0.08)	(0.04)
	[0.31]	[0.00]	[0.05]	[0.01]	[0.06]	[0.06]	[0.00]
Observations	608	608	625	625	625	625	625

Standard errors and p-values adjusted for three-dimensional spatial correlation using the method of Müller and Watson (2022), estimated using the Stata package *scpc*. All regressions include a landslide-event fixed effect. Standard errors in parentheses are heteroskedasticity-robust in Panels A and C and clustered at the household level in Panel B. Two-sided p-values in brackets.