

## Supplementary material

Supplement to: Paul, R., Nandi, S., and Rashmi, R. (2025). Examining the Heterogeneity in Under-five Mortality Risk by Household Generations and Structure in Nepal from 1970-2022. *Vienna Yearbook of Population Research*, 23. <https://doi.org/10.1553/p-d6a3-acn8>

**Table S.1** Sample distribution of births by background characteristics in Nepal 1970-2022

<b>Characteristic</b>	<b>Weighted N = 196,801,015<sup>1</sup></b>	<b>Unweighted N = 163,544<sup>2</sup></b>
<b>Generations in household</b>		
3+ generations	40.0%	64,146 (39.2%)
1-2 generations	60.0%	99,398 (60.8%)
<b>Household structure</b>		
Extended	51.9%	84,003 (51.4%)
Nuclear	48.1%	79,541 (48.6%)
<b>Preceding birth interval (in months)</b>		
24 and more months	49.0%	79,896 (48.9%)
18-23 months	11.8%	19,155 (11.7%)
Less than 18 months	8.0%	13,173 (8.1%)
First order births	31.3%	51,320 (31.4%)
<b>Birth cohort of index child</b>		
2010 and above	11.1%	20,579 (12.6%)
2000-2009	23.1%	41,303 (25.3%)
1990-1999	35.5%	56,327 (34.4%)
1980-1989	22.7%	34,328 (21.0%)
1970-1979	7.6%	11,007 (6.7%)
<b>Birth order</b>		
1-2	56.4%	92,629 (56.6%)
3	17.3%	28,282 (17.3%)
4	11.0%	17,997 (11.0%)
5 and more	15.3%	24,636 (15.1%)
<b>Sex of child</b>		
Female	48.8%	79,707 (48.7%)
Male	51.2%	83,837 (51.3%)
<b>Season during birth</b>		
Summer/pre-monsoon	35.0%	57,242 (35.0%)
Monsoon	25.7%	41,574 (25.4%)
Winter/post-monsoon	39.3%	64,728 (39.6%)
<b>Mother's age at child birth (in years)</b>		
Above 29 years	14.7%	23,857 (14.6%)
25-29 years	23.1%	37,824 (23.1%)
20-24 years	38.4%	62,818 (38.4%)
Below 20 years	23.8%	39,045 (23.9%)
<b>Mother's education</b>		
Secondary or higher	13.8%	23,668 (14.5%)
Up to Primary	15.5%	25,996 (15.9%)
No formal schooling	70.7%	113,880 (69.6%)
<b>Father's education</b>		
Secondary or higher	36.1%	60,191 (36.8%)
Up to primary	27.9%	47,654 (29.1%)
No formal schooling	36.0%	55,699 (34.1%)

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<b>Characteristic</b>	<b>Weighted N = 196,801,015<sup>1</sup></b>	<b>Unweighted N = 163,544<sup>2</sup></b>
<b>Religion of the household</b>		
Hinduism	84.8%	140,470 (85.9%)
Buddhism	6.8%	10,740 (6.6%)
Others	8.4%	12,334 (7.5%)
<b>Native language of the household</b>		
Nepali	46.5%	84,190 (51.5%)
Maithili	15.3%	18,491 (11.3%)
Bhojpuri	8.2%	10,335 (6.3%)
Others	29.9%	50,528 (30.9%)
<b>Wealth index quintile</b>		
Richest	16.1%	25,263 (15.4%)
Richer	19.0%	29,320 (17.9%)
Middle	20.7%	31,635 (19.3%)
Poorer	20.9%	33,318 (20.4%)
Poorest	23.3%	44,008 (26.9%)
<b>Place of residence</b>		
Urban	24.3%	47,721 (29.2%)
Rural	75.7%	115,823 (70.8%)
<b>Ecological region</b>		
Mountain region	7.3%	21,762 (13.3%)
Hill region	40.0%	65,754 (40.2%)
Terai region	52.7%	76,028 (46.5%)

<sup>1</sup>% = Column percentage (weighted);

<sup>2</sup>n (%) = Distribution and column percentage (unweighted)

**Table S.2** Multivariable association of under-five mortality with generations in household and other independent variables among children in Nepal 1996, 2001 and 2006

Characteristic	Nepal DHS 1996			Nepal DHS 2001			Nepal DHS 2006		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
<b>Generations in household</b>									
3+ generations	—	—		—	—		—	—	
1-2 generations	1.13	1.04, 1.22	<b>0.003</b>	1.13	1.03, 1.23	<b>0.010</b>	1.27	1.14, 1.40	<b>&lt;0.001</b>
<b>Preceding birth interval (in months)</b>									
24 and more months	—	—		—	—		—	—	
18-23 months	1.57	1.42, 1.74	<b>&lt;0.001</b>	1.74	1.56, 1.95	<b>&lt;0.001</b>	1.82	1.56, 2.13	<b>&lt;0.001</b>
Less than 18 months	2.46	2.17, 2.78	<b>&lt;0.001</b>	2.75	2.43, 3.11	<b>&lt;0.001</b>	2.60	2.12, 3.18	<b>&lt;0.001</b>
First order births	1.29	1.15, 1.44	<b>&lt;0.001</b>	1.42	1.25, 1.61	<b>&lt;0.001</b>	1.46	1.27, 1.69	<b>&lt;0.001</b>
<b>year of birth</b>	0.95	0.94, 0.95	<b>&lt;0.001</b>	0.95	0.95, 0.96	<b>&lt;0.001</b>	0.94	0.94, 0.95	<b>&lt;0.001</b>
<b>Birth order</b>									
1-2	—	—		—	—		—	—	
3	1.13	1.00, 1.27	<b>0.044</b>	1.10	0.97, 1.26	0.15	1.19	1.04, 1.36	<b>0.010</b>
4	1.16	1.02, 1.32	<b>0.021</b>	1.28	1.10, 1.49	<b>0.002</b>	1.38	1.15, 1.64	<b>&lt;0.001</b>
5 and more	1.43	1.24, 1.65	<b>&lt;0.001</b>	1.36	1.18, 1.58	<b>&lt;0.001</b>	1.76	1.45, 2.13	<b>&lt;0.001</b>
<b>Sex of child</b>									
Female	—	—		—	—		—	—	
Male	0.99	0.93, 1.06	0.8	0.99	0.92, 1.07	0.8	1.09	0.98, 1.21	0.11
<b>Season during birth</b>									
Summer/pre-monsoon	—	—		—	—		—	—	
Monsoon	0.97	0.88, 1.06	0.5	1.01	0.91, 1.12	0.8	1.15	1.01, 1.31	<b>0.030</b>
Winter/post-monsoon	1.00	0.93, 1.09	>0.9	1.03	0.95, 1.12	0.4	0.99	0.89, 1.10	0.9
<b>Mother's age at child birth (in years)</b>									
Above 29 years	—	—		—	—		—	—	
25-29 years	1.05	0.93, 1.19	0.4	1.03	0.90, 1.18	0.6	1.09	0.92, 1.29	0.3
20-24 years	1.14	0.98, 1.32	0.10	1.24	1.05, 1.48	<b>0.014</b>	1.25	1.02, 1.52	<b>0.030</b>
Below 20 years	1.54	1.28, 1.84	<b>&lt;0.001</b>	1.61	1.33, 1.95	<b>&lt;0.001</b>	1.86	1.52, 2.28	<b>&lt;0.001</b>
<b>Mother's education</b>									
Secondary or higher	—	—		—	—		—	—	
Up to Primary	1.41	1.03, 1.93	<b>0.035</b>	1.18	0.86, 1.61	0.3	1.41	1.10, 1.80	<b>0.006</b>
No formal schooling	1.72	1.34, 2.21	<b>&lt;0.001</b>	1.66	1.30, 2.13	<b>&lt;0.001</b>	1.73	1.35, 2.21	<b>&lt;0.001</b>
<b>Father's education</b>									
Secondary or higher	—	—		—	—		—	—	

Characteristic	Nepal DHS 1996			Nepal DHS 2001			Nepal DHS 2006		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
Up to primary	1.11	0.98, 1.26	0.088	1.20	1.06, 1.36	<b>0.005</b>	1.03	0.89, 1.19	0.7
No formal schooling	1.31	1.18, 1.45	<b>&lt;0.001</b>	1.38	1.21, 1.58	<b>&lt;0.001</b>	1.03	0.91, 1.16	0.7
<b>Religion of the household</b>									
Hinduism	—	—	—	—	—	—	—	—	—
Buddhism	0.88	0.72, 1.08	0.2	0.85	0.67, 1.08	0.2	0.87	0.68, 1.10	0.2
Others	1.01	0.82, 1.24	>0.9	0.79	0.67, 0.93	<b>0.005</b>	1.09	0.91, 1.31	0.4
<b>Native language of the household</b>									
Nepali	—	—	—	—	—	—	—	—	—
Maithili	1.09	0.93, 1.28	0.3	1.40	1.19, 1.66	<b>&lt;0.001</b>	1.08	0.89, 1.31	0.4
Bhojpuri	1.25	1.10, 1.42	<b>&lt;0.001</b>	1.47	1.14, 1.89	<b>0.004</b>	1.14	0.89, 1.45	0.3
Others	1.14	1.01, 1.30	<b>0.035</b>	1.31	1.14, 1.50	<b>&lt;0.001</b>	1.17	1.04, 1.32	<b>0.008</b>
<b>Wealth index quintile</b>									
Richest	—	—	—	—	—	—	—	—	—
Richer	1.38	1.15, 1.66	<b>&lt;0.001</b>	1.19	0.99, 1.43	0.059	1.15	0.92, 1.45	0.2
Middle	1.65	1.39, 1.96	<b>&lt;0.001</b>	1.22	1.01, 1.48	<b>0.043</b>	1.37	1.07, 1.76	<b>0.013</b>
Poorer	1.64	1.38, 1.96	<b>&lt;0.001</b>	1.46	1.20, 1.77	<b>&lt;0.001</b>	1.50	1.18, 1.91	<b>0.001</b>
Poorest	1.59	1.33, 1.90	<b>&lt;0.001</b>	1.56	1.27, 1.91	<b>&lt;0.001</b>	1.77	1.36, 2.30	<b>&lt;0.001</b>
<b>Place of residence</b>									
Urban	—	—	—	—	—	—	—	—	—
Rural	1.17	1.02, 1.35	<b>0.023</b>	1.12	0.87, 1.43	0.4	1.26	1.06, 1.49	<b>0.008</b>
<b>Ecological region</b>									
Mountain region	—	—	—	—	—	—	—	—	—
Hill region	0.61	0.54, 0.70	<b>&lt;0.001</b>	0.58	0.50, 0.67	<b>&lt;0.001</b>	0.63	0.52, 0.77	<b>&lt;0.001</b>
Terai region	0.61	0.53, 0.71	<b>&lt;0.001</b>	0.60	0.51, 0.71	<b>&lt;0.001</b>	0.76	0.62, 0.92	<b>0.006</b>
No. Obs.	28,043			28,852			26,393		
AIC	23,623			21,706			17,394		
BIC	23,857			21,929			17,612		

<sup>1</sup>OR = Odds Ratio, CI = Confidence Interval

**Table S.3** Multivariable association of under-five mortality with generations in household and other independent variables among children in Nepal 2011, 2016 and 2022

Characteristic	Nepal DHS 2011			Nepal DHS 2016			Nepal DHS 2022		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
<b>Generations in household</b>									
3+ generations	—	—		—	—		—	—	
1-2 generations	1.02	0.91, 1.14	0.7	1.09	0.98, 1.22	0.12	1.02	0.91, 1.16	0.7
<b>Preceding birth interval (in months)</b>									
24 and more months	—	—		—	—		—	—	
18-23 months	1.74	1.45, 2.08	<0.001	1.92	1.59, 2.31	<0.001	1.55	1.26, 1.91	<0.001
Less than 18 months	2.98	2.48, 3.58	<0.001	2.76	2.26, 3.38	<0.001	2.75	2.23, 3.41	<0.001
First order births	1.53	1.29, 1.81	<0.001	1.64	1.37, 1.97	<0.001	1.47	1.22, 1.78	<0.001
<b>year of birth</b>	0.95	0.95, 0.96	<0.001	0.95	0.94, 0.96	<0.001	0.96	0.95, 0.97	<0.001
<b>Birth order</b>									
1-2	—	—		—	—		—	—	
3	1.07	0.91, 1.27	0.4	0.99	0.82, 1.18	0.9	1.12	0.91, 1.38	0.3
4	1.04	0.81, 1.34	0.8	1.15	0.92, 1.45	0.2	1.29	0.98, 1.69	0.074
5 and more	1.36	1.02, 1.83	<b>0.039</b>	1.47	1.09, 1.98	<b>0.013</b>	1.54	1.12, 2.13	<b>0.008</b>
<b>Sex of child</b>									
Female	—	—		—	—		—	—	
Male	1.07	0.98, 1.16	0.14	1.25	1.10, 1.42	<0.001	1.14	1.02, 1.27	<b>0.017</b>
<b>Season during birth</b>									
Summer/pre-monsoon	—	—		—	—		—	—	
Monsoon	0.91	0.80, 1.03	0.14	1.13	0.98, 1.30	0.088	1.11	0.97, 1.27	0.14
Winter/post-monsoon	0.89	0.79, 1.01	0.078	1.04	0.92, 1.17	0.5	1.07	0.93, 1.22	0.4
<b>Mother's age at child birth (in years)</b>									
Above 29 years	—	—		—	—		—	—	
25-29 years	1.09	0.84, 1.40	0.5	1.14	0.88, 1.47	0.3	0.88	0.66, 1.17	0.4
20-24 years	1.14	0.85, 1.53	0.4	1.29	0.96, 1.73	0.087	0.99	0.72, 1.36	>0.9
Below 20 years	1.56	1.10, 2.21	<b>0.013</b>	1.67	1.20, 2.34	<b>0.003</b>	1.32	0.93, 1.87	0.12
<b>Mother's education</b>									
Secondary or higher	—	—		—	—		—	—	
Up to Primary	1.14	0.88, 1.47	0.3	1.16	0.92, 1.46	0.2	1.39	1.07, 1.82	<b>0.014</b>
No formal schooling	1.37	1.08, 1.73	<b>0.010</b>	1.56	1.27, 1.92	<0.001	1.58	1.19, 2.10	<b>0.002</b>
<b>Father's education</b>									
Secondary or higher	—	—		—	—		—	—	

Characteristic	Nepal DHS 2011			Nepal DHS 2016			Nepal DHS 2022		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
Up to primary	1.10	0.96, 1.26	0.2	1.10	0.95, 1.28	0.2	1.12	0.93, 1.34	0.2
No formal schooling	1.41	1.19, 1.67	<b>&lt;0.001</b>	1.24	1.07, 1.45	<b>0.005</b>	1.15	0.93, 1.42	0.2
<b>Religion of the household</b>									
Hinduism	—	—	—	—	—	—	—	—	—
Buddhism	0.84	0.67, 1.04	0.12	0.76	0.57, 1.02	0.072	1.03	0.76, 1.38	0.9
Others	0.74	0.58, 0.95	<b>0.017</b>	0.75	0.58, 0.97	<b>0.028</b>	0.91	0.73, 1.14	0.4
<b>Native language of the household</b>									
Nepali	—	—	—	—	—	—	—	—	—
Maithili	1.07	0.88, 1.28	0.5	1.13	0.91, 1.40	0.3	1.00	0.81, 1.23	>0.9
Bhojpuri	1.15	0.80, 1.67	0.4	1.53	1.16, 2.00	<b>0.002</b>	0.99	0.76, 1.29	>0.9
Others	1.21	1.05, 1.40	<b>0.008</b>	1.26	1.08, 1.47	<b>0.004</b>	1.12	0.95, 1.31	0.2
<b>Wealth index quintile</b>									
Richest	—	—	—	—	—	—	—	—	—
Richer	1.30	0.99, 1.70	0.057	1.15	0.88, 1.51	0.3	1.22	0.89, 1.68	0.2
Middle	1.54	1.16, 2.03	<b>0.003</b>	1.37	1.09, 1.72	<b>0.008</b>	1.30	0.95, 1.80	0.10
Poorer	1.71	1.29, 2.27	<b>&lt;0.001</b>	1.61	1.29, 2.01	<b>&lt;0.001</b>	1.58	1.17, 2.13	<b>0.003</b>
Poorest	2.19	1.66, 2.89	<b>&lt;0.001</b>	2.07	1.61, 2.66	<b>&lt;0.001</b>	2.02	1.49, 2.73	<b>&lt;0.001</b>
<b>Place of residence</b>									
Urban	—	—	—	—	—	—	—	—	—
Rural	0.99	0.83, 1.18	>0.9	1.11	0.96, 1.28	0.2	1.16	1.03, 1.32	<b>0.017</b>
<b>Ecological region</b>									
Mountain region	—	—	—	—	—	—	—	—	—
Hill region	0.76	0.65, 0.90	<b>0.001</b>	0.74	0.57, 0.95	<b>0.021</b>	0.77	0.64, 0.93	<b>0.008</b>
Terai region	0.79	0.67, 0.94	<b>0.008</b>	0.92	0.70, 1.19	0.5	0.97	0.77, 1.22	0.8
No. Obs.	26,615			26,028			27,613		
AIC	14,817			12,415			11,254		
BIC	15,031			12,642			11,488		

<sup>1</sup>OR = Odds Ratio, CI = Confidence Interval

**Table S.4** Multivariable association of under-five mortality with household structure and other independent variables among children in Nepal 1996, 2001 and 2006

Characteristic	Nepal DHS 1996			Nepal DHS 2001			Nepal DHS 2006		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
<b>Household structure</b>									
Extended	—	—		—	—		—	—	
Nuclear	1.08	1.00, 1.17	<b>0.050</b>	1.05	0.96, 1.15	0.3	1.16	1.04, 1.29	<b>0.007</b>
<b>Preceding birth interval (in months)</b>									
24 and more months	—	—		—	—		—	—	
18-23 months	1.57	1.42, 1.74	<b>&lt;0.001</b>	1.74	1.56, 1.95	<b>&lt;0.001</b>	1.82	1.57, 2.13	<b>&lt;0.001</b>
Less than 18 months	2.46	2.18, 2.78	<b>&lt;0.001</b>	2.76	2.44, 3.13	<b>&lt;0.001</b>	2.61	2.13, 3.19	<b>&lt;0.001</b>
First order births	1.29	1.15, 1.44	<b>&lt;0.001</b>	1.42	1.25, 1.61	<b>&lt;0.001</b>	1.47	1.27, 1.69	<b>&lt;0.001</b>
<b>year of birth</b>	0.95	0.94, 0.95	<b>&lt;0.001</b>	0.95	0.95, 0.96	<b>&lt;0.001</b>	0.94	0.94, 0.95	<b>&lt;0.001</b>
<b>Birth order</b>									
1-2	—	—		—	—		—	—	
3	1.13	1.00, 1.27	<b>0.044</b>	1.10	0.97, 1.26	0.14	1.19	1.04, 1.35	<b>0.011</b>
4	1.16	1.02, 1.32	<b>0.022</b>	1.28	1.10, 1.49	<b>0.002</b>	1.37	1.15, 1.63	<b>&lt;0.001</b>
5 and more	1.43	1.23, 1.65	<b>&lt;0.001</b>	1.36	1.17, 1.57	<b>&lt;0.001</b>	1.74	1.43, 2.11	<b>&lt;0.001</b>
<b>Sex of child</b>									
Female	—	—		—	—		—	—	
Male	0.99	0.93, 1.06	0.8	0.99	0.92, 1.07	0.8	1.09	0.98, 1.21	0.10
<b>Season during birth</b>									
Summer/pre-monsoon	—	—		—	—		—	—	
Monsoon	0.97	0.88, 1.07	0.5	1.01	0.91, 1.12	0.8	1.15	1.02, 1.31	<b>0.028</b>
Winter/post-monsoon	1.01	0.93, 1.09	0.9	1.03	0.95, 1.12	0.4	0.99	0.89, 1.10	0.9
<b>Mother's age at child birth (in years)</b>									
Above 29 years	—	—		—	—		—	—	
25-29 years	1.05	0.92, 1.19	0.5	1.03	0.90, 1.18	0.7	1.08	0.91, 1.28	0.4
20-24 years	1.13	0.97, 1.31	0.11	1.24	1.04, 1.47	<b>0.017</b>	1.23	1.01, 1.49	<b>0.043</b>
Below 20 years	1.52	1.27, 1.83	<b>&lt;0.001</b>	1.60	1.32, 1.93	<b>&lt;0.001</b>	1.81	1.48, 2.22	<b>&lt;0.001</b>
<b>Mother's education</b>									
Secondary or higher	—	—		—	—		—	—	
Up to Primary	1.40	1.02, 1.92	<b>0.036</b>	1.18	0.87, 1.61	0.3	1.40	1.10, 1.79	<b>0.008</b>
No formal schooling	1.71	1.33, 2.20	<b>&lt;0.001</b>	1.66	1.30, 2.13	<b>&lt;0.001</b>	1.71	1.33, 2.19	<b>&lt;0.001</b>
<b>Father's education</b>									
Secondary or higher	—	—		—	—		—	—	

Characteristic	Nepal DHS 1996			Nepal DHS 2001			Nepal DHS 2006		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
Up to primary	1.12	0.99, 1.26	0.079	1.20	1.06, 1.37	<b>0.005</b>	1.04	0.90, 1.20	0.6
No formal schooling	1.31	1.19, 1.46	<b>&lt;0.001</b>	1.39	1.22, 1.60	<b>&lt;0.001</b>	1.04	0.92, 1.18	0.5
<b>Religion of the household</b>									
Hinduism	—	—	—	—	—	—	—	—	—
Buddhism	0.89	0.73, 1.09	0.3	0.86	0.67, 1.09	0.2	0.88	0.69, 1.12	0.3
Others	1.01	0.83, 1.25	0.9	0.80	0.68, 0.94	<b>0.007</b>	1.10	0.91, 1.32	0.3
<b>Native language of the household</b>									
Nepali	—	—	—	—	—	—	—	—	—
Maithili	1.08	0.92, 1.27	0.3	1.38	1.17, 1.64	<b>&lt;0.001</b>	1.07	0.88, 1.30	0.5
Bhojpuri	1.24	1.09, 1.40	<b>0.001</b>	1.45	1.12, 1.88	<b>0.005</b>	1.13	0.88, 1.45	0.3
Others	1.14	1.00, 1.29	<b>0.045</b>	1.30	1.13, 1.49	<b>&lt;0.001</b>	1.16	1.03, 1.31	<b>0.015</b>
<b>Wealth index quintile</b>									
Richest	—	—	—	—	—	—	—	—	—
Richer	1.38	1.15, 1.66	<b>&lt;0.001</b>	1.19	1.00, 1.43	0.056	1.14	0.91, 1.44	0.3
Middle	1.65	1.39, 1.96	<b>&lt;0.001</b>	1.22	1.01, 1.48	<b>0.042</b>	1.35	1.05, 1.73	<b>0.018</b>
Poorer	1.65	1.39, 1.97	<b>&lt;0.001</b>	1.46	1.21, 1.77	<b>&lt;0.001</b>	1.48	1.16, 1.89	<b>0.002</b>
Poorest	1.60	1.34, 1.91	<b>&lt;0.001</b>	1.57	1.29, 1.92	<b>&lt;0.001</b>	1.76	1.36, 2.29	<b>&lt;0.001</b>
<b>Place of residence</b>									
Urban	—	—	—	—	—	—	—	—	—
Rural	1.17	1.02, 1.34	<b>0.024</b>	1.10	0.86, 1.41	0.4	1.25	1.06, 1.47	<b>0.010</b>
<b>Ecological region</b>									
Mountain region	—	—	—	—	—	—	—	—	—
Hill region	0.61	0.53, 0.70	<b>&lt;0.001</b>	0.58	0.50, 0.66	<b>&lt;0.001</b>	0.63	0.52, 0.77	<b>&lt;0.001</b>
Terai region	0.61	0.53, 0.71	<b>&lt;0.001</b>	0.60	0.51, 0.71	<b>&lt;0.001</b>	0.75	0.62, 0.92	<b>0.006</b>
No. Obs.	28,043			28,852			26,393		
AIC	23,629			21,715			17,414		
BIC	23,863			21,937			17,630		

<sup>1</sup>OR = Odds Ratio, CI = Confidence Interval

**Table S.5** Multivariable association of under-five mortality with household structure and other independent variables among children in Nepal 2011, 2016 and 2022

Characteristic	Nepal DHS 2011			Nepal DHS 2016			Nepal DHS 2022		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
<b>Household structure</b>									
Extended	—	—		—	—		—	—	
Nuclear	0.93	0.82, 1.04	0.2	1.01	0.90, 1.13	0.8	0.98	0.86, 1.11	0.7
<b>Preceding birth interval (in months)</b>									
24 and more months	—	—		—	—		—	—	
18-23 months	1.74	1.45, 2.09	<0.001	1.92	1.59, 2.31	<0.001	1.55	1.26, 1.91	<0.001
Less than 18 months	2.99	2.49, 3.59	<0.001	2.76	2.26, 3.37	<0.001	2.75	2.23, 3.40	<0.001
First order births	1.53	1.29, 1.81	<0.001	1.64	1.36, 1.97	<0.001	1.47	1.22, 1.78	<0.001
<b>year of birth</b>	0.95	0.95, 0.96	<0.001	0.95	0.94, 0.96	<0.001	0.96	0.95, 0.97	<0.001
<b>Birth order</b>									
1-2	—	—		—	—		—	—	
3	1.07	0.91, 1.26	0.4	0.99	0.82, 1.18	0.9	1.12	0.91, 1.38	0.3
4	1.04	0.81, 1.34	0.8	1.15	0.92, 1.44	0.2	1.28	0.97, 1.69	0.076
5 and more	1.35	1.01, 1.82	<b>0.045</b>	1.46	1.08, 1.97	<b>0.014</b>	1.54	1.11, 2.12	<b>0.009</b>
<b>Sex of child</b>									
Female	—	—		—	—		—	—	
Male	1.07	0.98, 1.16	0.15	1.25	1.10, 1.42	<0.001	1.14	1.02, 1.27	<b>0.017</b>
<b>Season during birth</b>									
Summer/pre-monsoon	—	—		—	—		—	—	
Monsoon	0.91	0.80, 1.03	0.14	1.13	0.98, 1.30	0.087	1.11	0.96, 1.27	0.15
Winter/post-monsoon	0.89	0.78, 1.01	0.077	1.04	0.92, 1.17	0.5	1.07	0.93, 1.22	0.4
<b>Mother's age at child birth (in years)</b>									
Above 29 years	—	—		—	—		—	—	
25-29 years	1.09	0.84, 1.40	0.5	1.13	0.88, 1.46	0.3	0.88	0.66, 1.17	0.4
20-24 years	1.13	0.84, 1.52	0.4	1.28	0.96, 1.72	0.10	0.99	0.72, 1.36	>0.9
Below 20 years	1.55	1.09, 2.19	<b>0.014</b>	1.66	1.19, 2.32	<b>0.003</b>	1.31	0.93, 1.85	0.12
<b>Mother's education</b>									
Secondary or higher	—	—		—	—		—	—	
Up to Primary	1.14	0.88, 1.47	0.3	1.16	0.93, 1.46	0.2	1.40	1.07, 1.82	<b>0.014</b>
No formal schooling	1.37	1.08, 1.74	<b>0.010</b>	1.56	1.27, 1.92	<0.001	1.58	1.19, 2.11	<b>0.002</b>
<b>Father's education</b>									
Secondary or higher	—	—		—	—		—	—	

Characteristic	Nepal DHS 2011			Nepal DHS 2016			Nepal DHS 2022		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
Up to primary	1.11	0.97, 1.27	0.14	1.10	0.95, 1.28	0.2	1.12	0.94, 1.34	0.2
No formal schooling	1.41	1.19, 1.68	<b>&lt;0.001</b>	1.25	1.08, 1.46	<b>0.004</b>	1.15	0.93, 1.42	0.2
<b>Religion of the household</b>									
Hinduism	—	—	—	—	—	—	—	—	—
Buddhism	0.84	0.68, 1.05	0.12	0.77	0.57, 1.03	0.076	1.03	0.77, 1.40	0.8
Others	0.74	0.58, 0.96	<b>0.021</b>	0.75	0.58, 0.97	<b>0.027</b>	0.91	0.73, 1.14	0.4
<b>Native language of the household</b>									
Nepali	—	—	—	—	—	—	—	—	—
Maithili	1.06	0.88, 1.27	0.6	1.11	0.90, 1.38	0.3	0.99	0.81, 1.22	>0.9
Bhojpuri	1.15	0.80, 1.66	0.5	1.52	1.15, 1.99	<b>0.003</b>	0.98	0.75, 1.28	0.9
Others	1.21	1.05, 1.40	<b>0.010</b>	1.25	1.08, 1.46	<b>0.004</b>	1.11	0.95, 1.31	0.2
<b>Wealth index quintile</b>									
Richest	—	—	—	—	—	—	—	—	—
Richer	1.29	0.98, 1.69	0.065	1.15	0.87, 1.50	0.3	1.22	0.89, 1.68	0.2
Middle	1.52	1.15, 2.01	<b>0.003</b>	1.36	1.09, 1.71	<b>0.008</b>	1.31	0.95, 1.80	0.10
Poorer	1.71	1.29, 2.28	<b>&lt;0.001</b>	1.61	1.29, 2.01	<b>&lt;0.001</b>	1.58	1.18, 2.13	<b>0.002</b>
Poorest	2.22	1.68, 2.92	<b>&lt;0.001</b>	2.07	1.61, 2.65	<b>&lt;0.001</b>	2.02	1.49, 2.74	<b>&lt;0.001</b>
<b>Place of residence</b>									
Urban	—	—	—	—	—	—	—	—	—
Rural	0.98	0.82, 1.17	0.8	1.11	0.96, 1.28	0.2	1.16	1.03, 1.32	<b>0.017</b>
<b>Ecological region</b>									
Mountain region	—	—	—	—	—	—	—	—	—
Hill region	0.76	0.65, 0.90	<b>0.001</b>	0.74	0.57, 0.95	<b>0.019</b>	0.77	0.64, 0.93	<b>0.008</b>
Terai region	0.79	0.67, 0.94	<b>0.008</b>	0.91	0.70, 1.18	0.5	0.97	0.77, 1.22	0.8
No. Obs.	26,615			26,028			27,613		
AIC	14,815			12,418			11,255		
BIC	15,028			12,645			11,488		

<sup>1</sup>OR = Odds Ratio, CI = Confidence Interval

**Table S.6** Multivariate decomposition of difference in under-five mortality among children by the generations in household in Nepal 1996

<b>Difference in under-5 mortality by generations in household</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00283	(-0.00340, 0.00226)	<0.001	-12.9
Birth cohort of index child	0.00380	(0.00331, 0.00428)	<0.001	17.3
Birth order	0.00358	(0.00278, 0.00438)	<0.001	16.3
Sex of child	0.00000	(-0.00002, 0.00003)	0.748	0.0
Season during birth	0.00005	(-0.00005, 0.00015)	0.323	0.2
Mother's age at child birth (in years)	-0.00418	(-0.00553, 0.00283)	<0.001	-19.1
Mother's education	0.00154	(0.00081, 0.00228)	<0.001	7.0
Father's education	0.00487	(0.00333, 0.00642)	<0.001	22.2
Religion of the household	-0.00011	(-0.00045, 0.00023)	0.525	-0.5
Native language of the household	-0.00182	(-0.00301, 0.00063)	0.003	-8.3
Wealth index quintile	0.00412	(0.00248, 0.00577)	<0.001	18.8
Place of residence	-0.00048	(-0.00070, 0.00026)	<0.001	-2.2
Ecological region	0.00227	(0.00085, 0.00368)	0.002	10.3
<b>Explained difference (E)</b>	<b>0.01082</b>	<b>(0.00812, 0.01353)</b>	<b>&lt;0.001</b>	<b>49.4</b>
<b>Unexplained difference (U)</b>	<b>0.01111</b>	<b>(0.00213, 0.02009)</b>	<b>0.015</b>	<b>50.6</b>
<b>Total difference (T)</b>	<b>0.02193</b>	<b>(0.01320, 0.03067)</b>	<b>&lt;0.001</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval

**Table S.7** Multivariate decomposition of difference in under-five mortality among children by the generations in household in Nepal 2001

<b>Difference in under-5 mortality by generations in household</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00279	(-0.00339, 0.00219)	<0.001	-16.0
Birth cohort of index child	0.00168	(0.00148, 0.00188)	<0.001	9.6
Birth order	0.00403	(0.00314, 0.00492)	<0.001	23.1
Sex of child	-0.00003	(-0.00006, 0.00001)	0.158	-0.1
Season during birth	0.00003	(-0.00002, 0.00008)	0.283	0.2
Mother's age at child birth (in years)	-0.00445	(-0.00589, 0.00300)	<0.001	-25.4
Mother's education	0.00179	(0.00110, 0.00248)	<0.001	10.2
Father's education	0.00440	(0.00316, 0.00565)	<0.001	25.2
Religion of the household	-0.00051	(-0.00089, 0.00012)	0.010	-2.9
Native language of the household	-0.00186	(-0.00269, 0.00103)	<0.001	-10.6
Wealth index quintile	0.00303	(0.00196, 0.00411)	<0.001	17.4
Place of residence	-0.00013	(-0.00039, 0.00012)	0.304	-0.8
Ecological region	0.00273	(0.00149, 0.00396)	<0.001	15.6
<b>Explained difference (E)</b>	0.00792	(0.00558, 0.01026)	<0.001	45.3
<b>Unexplained difference (U)</b>	0.00956	(0.00137, 0.01775)	0.022	54.7
<b>Total difference (T)</b>	0.01748	(0.00948, 0.02549)	<0.001	100.0

<sup>1</sup>CI = Confidence Interval

**Table S.8** Multivariate decomposition of difference in under-five mortality among children by the generations in household in Nepal 2006

<b>Difference in under-5 mortality by generations in household</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00081	(-0.00203, 0.00041)	0.191	-5.1
Birth cohort of index child	0.00079	(-0.00036, 0.00194)	0.177	4.9
Birth order	0.00096	(-0.00042, 0.00234)	0.172	6.0
Sex of child	-0.00004	(-0.00011, 0.00002)	0.221	-0.3
Season during birth	0.00000	(-0.00001, 0.00002)	0.541	0.0
Mother's age at child birth (in years)	-0.00160	(-0.00385, 0.00064)	0.161	-10.0
Mother's education	0.00058	(-0.00025, 0.00141)	0.173	3.6
Father's education	0.00030	(-0.00030, 0.00091)	0.324	1.9
Religion of the household	0.00000	(0.00000, 0.00000)	0.961	0.0
Native language of the household	-0.00007	(-0.00021, 0.00006)	0.277	-0.5
Wealth index quintile	0.00121	(-0.00078, 0.00320)	0.234	7.6
Place of residence	-0.00009	(-0.00022, 0.00004)	0.186	-0.6
Ecological region	-0.00019	(-0.00056, 0.00017)	0.301	-1.2
<b>Explained difference (E)</b>	0.00103	(-0.00106, 0.00313)	0.333	6.5
<b>Unexplained difference (U)</b>	0.01495	(0.00713, 0.02276)	<0.001	93.5
<b>Total difference (T)</b>	0.01598	(0.00840, 0.02357)	<0.001	100.0

<sup>1</sup>CI = Confidence Interval

**Table S.9** Multivariate decomposition of difference in under-five mortality among children by the generations in household in Nepal 2011

<b>Difference in under-5 mortality by generations in household</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00161	(-0.00214, 0.00109)	<0.001	-14.0
Birth cohort of index child	0.00298	(0.00252, 0.00344)	<0.001	25.9
Birth order	0.00140	(0.00098, 0.00182)	<0.001	12.2
Sex of child	-0.00010	(-0.00018, 0.00002)	0.018	-0.8
Season during birth	0.00000	(-0.00001, 0.00001)	0.406	-0.0
Mother's age at child birth (in years)	-0.00179	(-0.00244, 0.00115)	<0.001	-15.6
Mother's education	0.00057	(0.00000, 0.00114)	0.051	4.9
Father's education	0.00115	(0.00068, 0.00163)	<0.001	10.0
Religion of the household	-0.00043	(-0.00069, 0.00018)	0.001	-3.8
Native language of the household	-0.00046	(-0.00077, 0.00015)	0.003	-4.0
Wealth index quintile	0.00138	(0.00090, 0.00185)	<0.001	12.0
Place of residence	-0.00006	(-0.00043, 0.00030)	0.728	-0.6
Ecological region	0.00040	(-0.00007, 0.00086)	0.093	3.5
<b>Explained difference (E)</b>	<b>0.00341</b>	<b>(0.00215, 0.00467)</b>	<b>&lt;0.001</b>	<b>29.7</b>
<b>Unexplained difference (U)</b>	<b>0.00809</b>	<b>(0.00112, 0.01506)</b>	<b>0.023</b>	<b>70.3</b>
<b>Total difference (T)</b>	<b>0.01150</b>	<b>(0.00454, 0.01845)</b>	<b>0.001</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval

**Table S.10** Multivariate decomposition of difference in under-five mortality among children by the generations in household in Nepal 2016

<b>Difference in under-5 mortality by generations in household</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00212	(-0.00276, 0.00149)	<0.001	-21.0
Birth cohort of index child	0.00414	(0.00349, 0.00479)	<0.001	41.0
Birth order	0.00092	(0.00059, 0.00125)	<0.001	9.1
Sex of child	0.00009	(0.00004, 0.00015)	0.001	0.9
Season during birth	0.00002	(-0.00002, 0.00006)	0.391	0.2
Mother's age at child birth (in years)	-0.00186	(-0.00255, 0.00116)	<0.001	-18.4
Mother's education	0.00173	(0.00101, 0.00245)	<0.001	17.1
Father's education	0.00101	(0.00032, 0.00170)	0.004	10.0
Religion of the household	0.00015	(0.00003, 0.00026)	0.012	1.5
Native language of the household	-0.00044	(-0.00085, 0.00004)	0.031	-4.4
Wealth index quintile	0.00170	(0.00102, 0.00238)	<0.001	16.8
Place of residence	-0.00019	(-0.00038, 0.00000)	0.044	-1.9
Ecological region	0.00047	(-0.00052, 0.00147)	0.351	4.7
<b>Explained difference (E)</b>	0.00562	(0.00426, 0.00697)	<0.001	55.6
<b>Unexplained difference (U)</b>	0.00449	(-0.00174, 0.01072)	0.158	44.4
<b>Total difference (T)</b>	0.01011	(0.00384, 0.01638)	0.002	100.0

<sup>1</sup>CI = Confidence Interval

**Table S.11** Multivariate decomposition of difference in under-five mortality among children by the generations in household in Nepal 2022

<b>Difference in under-5 mortality by generations in household</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00175	(-0.00231, 0.00118)	<0.001	-28.8
Birth cohort of index child	0.00145	(0.00107, 0.00183)	<0.001	23.9
Birth order	0.00051	(0.00032, 0.00070)	<0.001	8.4
Sex of child	-0.00003	(-0.00004, 0.00001)	0.002	-0.4
Season during birth	-0.00001	(-0.00010, 0.00007)	0.738	-0.2
Mother's age at child birth (in years)	-0.00056	(-0.00098, 0.00015)	0.007	-9.3
Mother's education	0.00179	(0.00108, 0.00250)	<0.001	29.5
Father's education	0.00031	(-0.00008, 0.00071)	0.122	5.2
Religion of the household	0.00000	(-0.00001, 0.00001)	0.446	-0.0
Native language of the household	-0.00027	(-0.00063, 0.00009)	0.140	-4.5
Wealth index quintile	0.00095	(0.00047, 0.00142)	<0.001	15.6
Place of residence	0.00005	(0.00000, 0.00010)	0.044	0.8
Ecological region	0.00044	(-0.00024, 0.00113)	0.205	7.3
<b>Explained difference (E)</b>	<b>0.00287</b>	<b>(0.00188, 0.00386)</b>	<b>&lt;0.001</b>	<b>47.4</b>
<b>Unexplained difference (U)</b>	<b>0.00319</b>	<b>(-0.00239, 0.00877)</b>	<b>0.263</b>	<b>52.6</b>
<b>Total difference (T)</b>	<b>0.00606</b>	<b>(0.00046, 0.01167)</b>	<b>0.034</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval

**Table S.12** Multivariate decomposition of difference in under-five mortality among children by household structure in Nepal 1996

<b>Difference in under-5 mortality by household structure</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00166	(-0.00222, 0.00109)	<0.001	-17.3
Birth cohort of index child	-0.00050	(-0.00060, 0.00039)	<0.001	-5.2
Birth order	0.00168	(0.00116, 0.00220)	<0.001	17.5
Sex of child	-0.00002	(-0.00007, 0.00003)	0.486	-0.2
Season during birth	0.00004	(-0.00003, 0.00010)	0.270	0.4
Mother's age at child birth (in years)	-0.00184	(-0.00268, 0.00100)	<0.001	-19.2
Mother's education	0.00165	(0.00092, 0.00237)	<0.001	17.2
Father's education	0.00259	(0.00140, 0.00377)	<0.001	27.0
Religion of the household	-0.00010	(-0.00034, 0.00015)	0.448	-1.0
Native language of the household	-0.00081	(-0.00154, 0.00008)	0.030	-8.4
Wealth index quintile	0.00289	(0.00135, 0.00444)	<0.001	30.2
Place of residence	-0.00025	(-0.00040, 0.00010)	0.001	-2.6
Ecological region	0.00067	(-0.00037, 0.00171)	0.206	7.0
<b>Explained difference (E)</b>	<b>0.00435</b>	<b>(0.00185, 0.00684)</b>	<b>0.001</b>	<b>45.4</b>
<b>Unexplained difference (U)</b>	<b>0.00523</b>	<b>(-0.00361, 0.01406)</b>	<b>0.246</b>	<b>54.6</b>
<b>Total difference (T)</b>	<b>0.00957</b>	<b>(0.00099, 0.01816)</b>	<b>0.029</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval

**Table S.13** Multivariate decomposition of difference in under-five mortality among children by household structure in Nepal 2001

<b>Difference in under-5 mortality by household structure</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	0.00019	(-0.00221, 0.00259)	0.875	5.1
Birth cohort of index child	0.00023	(-0.00267, 0.00313)	0.876	6.1
Birth order	-0.00025	(-0.00340, 0.00290)	0.876	-6.6
Sex of child	0.00001	(-0.00014, 0.00017)	0.877	0.3
Season during birth	0.00000	(-0.00001, 0.00001)	0.878	-0.0
Mother's age at child birth (in years)	0.00032	(-0.00373, 0.00438)	0.876	8.5
Mother's education	-0.00016	(-0.00213, 0.00182)	0.875	-4.2
Father's education	-0.00033	(-0.00445, 0.00379)	0.875	-8.8
Religion of the household	0.00004	(-0.00047, 0.00055)	0.877	1.1
Native language of the household	0.00017	(-0.00197, 0.00230)	0.877	4.5
Wealth index quintile	-0.00025	(-0.00337, 0.00287)	0.874	-6.7
Place of residence	0.00000	(-0.00002, 0.00002)	0.881	-0.0
Ecological region	-0.00019	(-0.00249, 0.00212)	0.874	-5.0
<b>Explained difference (E)</b>	-0.00022	(-0.00276, 0.00233)	0.868	-5.7
<b>Unexplained difference (U)</b>	0.00399	(-0.00425, 0.01223)	0.343	105.7
<b>Total difference (T)</b>	0.00377	(-0.00410, 0.01165)	0.348	100.0

<sup>1</sup>CI = Confidence Interval

**Table S.14** Multivariate decomposition of difference in under-five mortality among children by household structure in Nepal 2006

<b>Difference in under-5 mortality by household structure</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00003	(-0.00133, 0.00127)	0.962	-0.4
Birth cohort of index child	-0.00002	(-0.00088, 0.00084)	0.962	-0.2
Birth order	0.00004	(-0.00173, 0.00182)	0.962	0.5
Sex of child	-0.00001	(-0.00025, 0.00024)	0.962	-0.1
Season during birth	0.00000	(-0.00001, 0.00001)	0.963	0.0
Mother's age at child birth (in years)	-0.00007	(-0.00279, 0.00265)	0.962	-0.8
Mother's education	0.00004	(-0.00154, 0.00161)	0.962	0.4
Father's education	0.00000	(-0.00006, 0.00006)	0.965	0.0
Religion of the household	0.00000	(-0.00002, 0.00002)	0.963	0.0
Native language of the household	0.00000	(-0.00009, 0.00009)	0.962	-0.0
Wealth index quintile	0.00011	(-0.00432, 0.00453)	0.963	1.2
Place of residence	0.00000	(-0.00003, 0.00003)	0.962	0.0
Ecological region	-0.00001	(-0.00025, 0.00024)	0.961	-0.1
<b>Explained difference (E)</b>	0.00006	(-0.00237, 0.00249)	0.963	0.7
<b>Unexplained difference (U)</b>	0.00852	(0.00064, 0.01639)	0.034	99.3
<b>Total difference (T)</b>	0.00857	(0.00103, 0.01612)	0.026	100.0

<sup>1</sup>CI = Confidence Interval

**Table S.15** Multivariate decomposition of difference in under-five mortality among children by household structure in Nepal 2011

<b>Difference in under-5 mortality by household structure</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00152	(-0.00205, 0.00098)	<0.001	-27.8
Birth cohort of index child	0.00059	(0.00049, 0.00068)	<0.001	10.7
Birth order	0.00146	(0.00098, 0.00193)	<0.001	26.7
Sex of child	-0.00018	(-0.00031, 0.00004)	0.010	-3.3
Season during birth	0.00001	(-0.00001, 0.00003)	0.383	0.2
Mother's age at child birth (in years)	-0.00161	(-0.00226, 0.00097)	<0.001	-29.6
Mother's education	0.00062	(-0.00011, 0.00135)	0.096	11.4
Father's education	0.00172	(0.00097, 0.00248)	<0.001	31.6
Religion of the household	-0.00030	(-0.00050, 0.00009)	0.004	-5.4
Native language of the household	-0.00035	(-0.00056, 0.00014)	0.001	-6.4
Wealth index quintile	0.00404	(0.00246, 0.00561)	<0.001	74.1
Place of residence	0.00002	(-0.00005, 0.00008)	0.621	0.3
Ecological region	0.00052	(-0.00010, 0.00113)	0.098	9.5
<b>Explained difference (E)</b>	<b>0.00501</b>	<b>(0.00341, 0.00661)</b>	<b>&lt;0.001</b>	<b>92.1</b>
<b>Unexplained difference (U)</b>	<b>0.00043</b>	<b>(-0.00636, 0.00723)</b>	<b>0.901</b>	<b>7.9</b>
<b>Total difference (T)</b>	<b>0.00545</b>	<b>(-0.00134, 0.01223)</b>	<b>0.116</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval

**Table S.16** Multivariate decomposition of difference in under-five mortality among children by household structure in Nepal 2016

<b>Difference in under-5 mortality by household structure</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00131	(-0.00187, 0.00076)	<0.001	-32.0
Birth cohort of index child	0.00164	(0.00133, 0.00196)	<0.001	40.0
Birth order	0.00069	(0.00043, 0.00094)	<0.001	16.7
Sex of child	-0.00009	(-0.00013, 0.00004)	<0.001	-2.1
Season during birth	0.00000	(-0.00001, 0.00001)	0.680	0.1
Mother's age at child birth (in years)	-0.00137	(-0.00190, 0.00084)	<0.001	-33.2
Mother's education	0.00155	(0.00089, 0.00221)	<0.001	37.7
Father's education	0.00052	(0.00002, 0.00103)	0.042	12.7
Religion of the household	0.00004	(0.00000, 0.00007)	0.046	0.9
Native language of the household	-0.00030	(-0.00059, 0.00000)	0.048	-7.2
Wealth index quintile	0.00183	(0.00086, 0.00280)	<0.001	44.5
Place of residence	0.00003	(-0.00001, 0.00006)	0.114	0.6
Ecological region	0.00046	(-0.00022, 0.00114)	0.185	11.2
<b>Explained difference (E)</b>	<b>0.00370</b>	<b>(0.00236, 0.00503)</b>	<b>&lt;0.001</b>	<b>90.0</b>
<b>Unexplained difference (U)</b>	<b>0.00041</b>	<b>(-0.00582, 0.00664)</b>	<b>0.897</b>	<b>10.0</b>
<b>Total difference (T)</b>	<b>0.00411</b>	<b>(-0.00214, 0.01036)</b>	<b>0.198</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval

**Table S.17** Multivariate decomposition of difference in under-five mortality among children by household structure in Nepal 2022

<b>Difference in under-5 mortality by household structure</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00114	(-0.00170, 0.00058)	<0.001	-74.4
Birth cohort of index child	0.00027	(0.00020, 0.00034)	<0.001	17.7
Birth order	0.00044	(0.00024, 0.00065)	<0.001	28.8
Sex of child	-0.00007	(-0.00012, 0.00002)	0.011	-4.5
Season during birth	-0.00002	(-0.00006, 0.00003)	0.470	-1.1
Mother's age at child birth (in years)	-0.00050	(-0.00090, 0.00011)	0.013	-33.0
Mother's education	0.00144	(0.00069, 0.00219)	<0.001	94.4
Father's education	0.00016	(-0.00014, 0.00045)	0.301	10.2
Religion of the household	-0.00002	(-0.00004, 0.00001)	0.263	-1.0
Native language of the household	-0.00016	(-0.00036, 0.00005)	0.138	-10.2
Wealth index quintile	0.00123	(0.00045, 0.00201)	0.002	80.6
Place of residence	0.00006	(-0.00003, 0.00015)	0.168	4.2
Ecological region	0.00031	(-0.00021, 0.00082)	0.246	20.0
<b>Explained difference (E)</b>	<b>0.00202</b>	<b>(0.00089, 0.00314)</b>	<b>&lt;0.001</b>	<b>131.9</b>
<b>Unexplained difference (U)</b>	<b>-0.00049</b>	<b>(-0.00608, 0.00511)</b>	<b>0.864</b>	<b>-31.9</b>
<b>Total difference (T)</b>	<b>0.00153</b>	<b>(-0.00405, 0.00711)</b>	<b>0.592</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval

**Table S.18** Multivariable association of under-five mortality and generations in household among sample of all children and children born in last 5 years from each survey in Nepal

Characteristic	Model of all births			Model of births in last 5 years		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
<b>Generations in household</b>						
3+ generations	—	—		—	—	
1-2 generations	1.12	1.07, 1.16	<0.001	1.39	1.24, 1.54	<0.001
<b>Preceding birth interval (in months)</b>						
24 and more months	—	—		—	—	
18-23 months	1.71	1.61, 1.81	<0.001	1.51	1.29, 1.76	<0.001
Less than 18 months	2.67	2.50, 2.86	<0.001	2.53	2.17, 2.96	<0.001
First order births	1.44	1.36, 1.53	<0.001	1.74	1.47, 2.06	<0.001
<b>Child's year of birth</b>	0.95	0.95, 0.95	<0.001	0.96	0.95, 0.97	<0.001
<b>Birth order</b>						
1-2	—	—		—	—	
3	1.11	1.04, 1.18	<0.001	1.25	1.05, 1.48	0.012
4	1.21	1.13, 1.30	<0.001	1.18	0.96, 1.44	0.11
5 and more	1.44	1.33, 1.57	<0.001	1.54	1.23, 1.92	<0.001
<b>Sex of child</b>						
Female	—	—		—	—	
Male	1.05	1.01, 1.09	0.008	1.03	0.93, 1.14	0.5
<b>Season during birth</b>						
Summer/pre-monsoon	—	—		—	—	
Monsoon	1.03	0.98, 1.08	0.3	1.04	0.91, 1.19	0.5
Winter/post-monsoon	1.00	0.96, 1.05	0.8	0.91	0.81, 1.02	0.090
<b>Mother's age at child birth (in years)</b>						
Above 29 years	—	—		—	—	
25-29 years	1.06	0.98, 1.13	0.13	1.10	0.92, 1.32	0.3
20-24 years	1.19	1.09, 1.29	<0.001	1.18	0.96, 1.46	0.11
Below 20 years	1.59	1.45, 1.76	<0.001	1.73	1.35, 2.22	<0.001
<b>Mother's education</b>						
Secondary or higher	—	—		—	—	
Up to Primary	1.26	1.13, 1.40	<0.001	1.30	1.05, 1.62	0.016
No formal schooling	1.57	1.43, 1.72	<0.001	1.50	1.23, 1.83	<0.001
<b>Father's education</b>						
Secondary or higher	—	—		—	—	

Characteristic	Model of all births			Model of births in last 5 years		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
Up to primary	1.13	1.07, 1.20	<0.001	1.13	0.99, 1.29	0.070
No formal schooling	1.28	1.21, 1.36	<0.001	1.22	1.05, 1.41	0.008
<b>Religion of the household</b>						
Hinduism	—	—	—	—	—	—
Buddhism	0.87	0.78, 0.96	0.007	0.74	0.60, 0.92	0.006
Others	0.88	0.81, 0.97	0.006	0.90	0.73, 1.10	0.3
<b>Native language of the household</b>						
Nepali	—	—	—	—	—	—
Maithili	1.16	1.07, 1.25	<0.001	1.21	1.00, 1.46	0.050
Bhojpuri	1.28	1.16, 1.42	<0.001	1.38	1.07, 1.77	0.012
Others	1.20	1.13, 1.27	<0.001	1.20	1.05, 1.37	0.009
<b>Wealth index quintile</b>						
Richest	—	—	—	—	—	—
Richer	1.27	1.16, 1.39	<0.001	1.19	0.94, 1.52	0.2
Middle	1.44	1.31, 1.57	<0.001	1.49	1.16, 1.92	0.002
Poorer	1.58	1.45, 1.73	<0.001	1.28	1.00, 1.63	0.047
Poorest	1.76	1.61, 1.93	<0.001	1.33	1.04, 1.71	0.023
<b>Place of residence</b>						
Urban	—	—	—	—	—	—
Rural	1.09	1.02, 1.16	0.009	1.06	0.90, 1.26	0.5
<b>Ecological region</b>						
Mountain region	—	—	—	—	—	—
Hill region	0.64	0.60, 0.69	<0.001	0.64	0.56, 0.73	<0.001
Terai region	0.69	0.64, 0.75	<0.001	0.62	0.53, 0.72	<0.001
No. Obs.	163,544			36,318		
AIC	103,658			15,648		
BIC	103,931			15,894		

<sup>1</sup>OR = Odds Ratio, CI = Confidence Interval

**Table S.19** Multivariable association of under-five mortality and household structure among sample of all children and children born in last 5 years from each survey in Nepal

Characteristic	Model of all births			Model of births in last 5 years		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
<b>Household structure</b>						
Extended	—	—		—	—	
Nuclear	1.05	1.00, 1.09	<b>0.039</b>	1.03	0.93, 1.14	0.6
<b>Preceding birth interval (in months)</b>						
24 and more months	—	—		—	—	
18-23 months	1.71	1.61, 1.81	<b>&lt;0.001</b>	1.50	1.28, 1.75	<b>&lt;0.001</b>
Less than 18 months	2.67	2.50, 2.86	<b>&lt;0.001</b>	2.53	2.17, 2.95	<b>&lt;0.001</b>
First order births	1.44	1.36, 1.53	<b>&lt;0.001</b>	1.70	1.43, 2.01	<b>&lt;0.001</b>
<b>Child's year of birth</b>	0.95	0.95, 0.95	<b>&lt;0.001</b>	0.96	0.95, 0.97	<b>&lt;0.001</b>
<b>Birth order</b>						
1-2	—	—		—	—	
3	1.11	1.04, 1.18	<b>&lt;0.001</b>	1.26	1.06, 1.50	<b>0.007</b>
4	1.21	1.13, 1.30	<b>&lt;0.001</b>	1.21	0.99, 1.48	<b>0.058</b>
5 and more	1.44	1.33, 1.56	<b>&lt;0.001</b>	1.60	1.27, 2.00	<b>&lt;0.001</b>
<b>Sex of child</b>						
Female	—	—		—	—	
Male	1.05	1.01, 1.09	<b>0.008</b>	1.03	0.93, 1.14	0.5
<b>Season during birth</b>						
Summer/pre-monsoon	—	—		—	—	
Monsoon	1.03	0.98, 1.08	0.3	1.04	0.91, 1.18	0.6
Winter/post-monsoon	1.00	0.96, 1.05	0.8	0.90	0.81, 1.01	<b>0.079</b>
<b>Mother's age at child birth (in years)</b>						
Above 29 years	—	—		—	—	
25-29 years	1.05	0.98, 1.13	0.2	1.08	0.91, 1.30	0.4
20-24 years	1.18	1.08, 1.28	<b>&lt;0.001</b>	1.15	0.93, 1.42	0.2
Below 20 years	1.58	1.43, 1.74	<b>&lt;0.001</b>	1.66	1.30, 2.13	<b>&lt;0.001</b>
<b>Mother's education</b>						
Secondary or higher	—	—		—	—	
Up to Primary	1.26	1.13, 1.40	<b>&lt;0.001</b>	1.30	1.05, 1.61	<b>0.016</b>
No formal schooling	1.57	1.43, 1.72	<b>&lt;0.001</b>	1.49	1.23, 1.82	<b>&lt;0.001</b>
<b>Father's education</b>						
Secondary or higher	—	—		—	—	

Characteristic	Model of all births			Model of births in last 5 years		
	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value	OR <sup>1</sup>	95% CI <sup>1</sup>	p-value
Up to primary	1.13	1.07, 1.20	<0.001	1.16	1.01, 1.33	0.030
No formal schooling	1.29	1.22, 1.37	<0.001	1.27	1.10, 1.47	0.001
<b>Religion of the household</b>						
Hinduism	—	—	—	—	—	—
Buddhism	0.87	0.79, 0.97	0.011	0.76	0.62, 0.95	0.014
Others	0.89	0.81, 0.97	0.008	0.90	0.73, 1.11	0.3
<b>Native language of the household</b>						
Nepali	—	—	—	—	—	—
Maithili	1.15	1.06, 1.24	<0.001	1.17	0.97, 1.42	0.10
Bhojpuri	1.27	1.15, 1.41	<0.001	1.33	1.03, 1.71	0.027
Others	1.19	1.12, 1.26	<0.001	1.16	1.02, 1.33	0.028
<b>Wealth index quintile</b>						
Richest	—	—	—	—	—	—
Richer	1.27	1.16, 1.38	<0.001	1.18	0.93, 1.50	0.2
Middle	1.43	1.31, 1.57	<0.001	1.47	1.15, 1.89	0.002
Poorer	1.59	1.45, 1.73	<0.001	1.29	1.02, 1.65	0.037
Poorest	1.77	1.61, 1.94	<0.001	1.36	1.06, 1.74	0.015
<b>Place of residence</b>						
Urban	—	—	—	—	—	—
Rural	1.08	1.02, 1.15	0.012	1.04	0.88, 1.22	0.7
<b>Ecological region</b>						
Mountain region	—	—	—	—	—	—
Hill region	0.64	0.60, 0.69	<0.001	0.64	0.56, 0.73	<0.001
Terai region	0.69	0.64, 0.74	<0.001	0.61	0.52, 0.72	<0.001
No. Obs.	163,544			36,318		
AIC	103,693			15,693		
BIC	103,965			15,939		

<sup>1</sup>OR = Odds Ratio, CI = Confidence Interval

**Table S.20** Multivariate decomposition of difference in under-five mortality among births in last 5 years by the generations in household in Nepal 1970-2022

<b>Difference in under-5 mortality by generations in household</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00075	(-0.04203, 0.04053)	0.972	-3.9
Child's year of birth	0.00029	(-0.01596, 0.01655)	0.972	1.5
Birth order	0.00050	(-0.02715, 0.02815)	0.972	2.6
Sex of child	0.00000	(-0.00014, 0.00013)	0.972	-0.0
Season during birth	0.00000	(-0.00001, 0.00001)	0.972	0.0
Mother's age at child birth (in years)	-0.00033	(-0.01830, 0.01764)	0.972	-1.7
Mother's education	0.00014	(-0.00734, 0.00761)	0.972	0.7
Father's education	0.00010	(-0.00519, 0.00538)	0.972	0.5
Religion of the household	-0.00001	(-0.00068, 0.00065)	0.972	-0.1
Native language of the household	-0.00005	(-0.00268, 0.00259)	0.972	-0.2
Wealth index quintile	0.00010	(-0.00519, 0.00538)	0.972	0.5
Place of residence	0.00002	(-0.00090, 0.00093)	0.971	0.1
Ecological region	0.00005	(-0.00254, 0.00263)	0.972	0.2
<b>Explained difference (E)</b>	0.00005	(-0.00274, 0.00283)	0.973	0.2
<b>Unexplained difference (U)</b>	0.01927	(0.01369, 0.02484)	<0.001	99.8
<b>Total difference (T)</b>	0.01932	(0.01448, 0.02415)	<0.001	100.0

<sup>1</sup>CI = Confidence Interval

**Table S.21** Multivariate decomposition of difference in under-five mortality among births in last 5 years by the household structure in Nepal 1970-2022

<b>Difference in under-5 mortality by household structure</b>				
<b>Characteristics</b>	<b>Coefficient</b>	<b>95% CI<sup>1</sup></b>	<b>p-value</b>	<b>Percent</b>
Preceding birth interval (in months)	-0.00859	(-0.01075, 0.00643)	<0.001	-165.6
Child's year of birth	0.00406	(0.00295, 0.00517)	<0.001	78.3
Birth order	0.00701	(0.00390, 0.01013)	<0.001	135.3
Sex of child	-0.00001	(-0.00004, 0.00001)	0.236	-0.3
Season during birth	0.00000	(-0.00003, 0.00003)	0.894	-0.0
Mother's age at child birth (in years)	-0.00361	(-0.00620, 0.00103)	0.006	-69.6
Mother's education	0.00253	(0.00083, 0.00423)	0.004	48.8
Father's education	0.00165	(-0.00001, 0.00331)	0.051	31.8
Religion of the household	-0.00016	(-0.00034, 0.00003)	0.095	-3.0
Native language of the household	-0.00049	(-0.00085, 0.00014)	0.007	-9.5
Wealth index quintile	0.00159	(0.00026, 0.00292)	0.019	30.7
Place of residence	0.00002	(-0.00047, 0.00050)	0.950	0.3
Ecological region	0.00059	(-0.00024, 0.00141)	0.163	11.3
<b>Explained difference (E)</b>	<b>0.00458</b>	<b>(0.00167, 0.00749)</b>	<b>0.002</b>	<b>88.4</b>
<b>Unexplained difference (U)</b>	<b>0.00060</b>	<b>(-0.00497, 0.00618)</b>	<b>0.832</b>	<b>11.6</b>
<b>Total difference (T)</b>	<b>0.00519</b>	<b>(0.00021, 0.01016)</b>	<b>0.041</b>	<b>100.0</b>

<sup>1</sup>CI = Confidence Interval