

Author's response to reviews

Title: An Average / Deprivation / Inequality (ADI) Analysis of Chronic Disease Outcomes and Risk Factors in Argentina

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Response to reviewers' comments (round 2)

We appreciate the comments from the reviewers and we're pleased to read that reviewer 1 has accepted our revisions. In response to the outstanding issues from reviewer 2, below we provide models with various treatments of the income variable. Our preferred approach remains the treatment presented in the paper; that is, we prefer to treat income in these models as a continuous variable. We believe this is statistically appropriate and substantively useful in this article, as it fits nicely with our use of Long and Freese's technique for plotting predicted probabilities from the model. This also complements our ADI framework of analysis.

Alternative treatments of income as a categorical measure do not produce meaningful differences in (a) our interpretations of the income – health relationships, or (b) the predictive power of other variables in the models. For example, consider the following results using self-reported health status as our outcome:

Table 1: (replicating results from Step A1 on page 30 of the paper)

	OR	95% CI
Household income (100s pesos / month, centred at mean)	0.92	(0.91 – 0.94)

An OR indicative of the well-documented social gradient in health; as income increases the probability of poor health decreases. This is consistent with a large body of literature and with our bivariate analyses of the ENFR data.

Table 2: (alternative treatment #1: income categorized in three groups)

	OR	95% CI
Low (0 – 600 pesos / month)	1.00	-
Medium (601 – 1500 pesos / month)	0.43	(0.38 – 0.48)
High (1501 + pesos / month)	0.24	(0.20 – 0.29)

Treating income in three categories produces a substantially similar interpretation; as income increases the probability of poor health decreases.

Table 3: (alternative treatment #2: income categorized in 18 groups)

	OR	95% CI
Reference: less than 100 pesos / month	1.00	-
101 to 200	0.71	(0.48 – 1.06)
201 to 300	0.70	(0.48 – 1.02)
301 to 400	0.61	(0.42 – 0.89)
401 to 500	0.45	(0.31 – 0.66)
501 to 600	0.50	(0.34 – 0.74)

601 to 700	0.38	(0.25 – 0.56)
701 to 800	0.30	(0.19 – 0.45)
801 to 900	0.25	(0.16 – 0.40)
901 to 1000	0.24	(0.16 – 0.36)
1001 to 1250	0.21	(0.13 – 0.32)
1251 to 1500	0.18	(0.11 – 0.28)
1501 to 1750	0.21	(0.12 – 0.36)
1751 to 2000	0.15	(0.09 – 0.24)
2001 to 3000	0.11	(0.07 – 0.19)
3001 to 4000	0.16	(0.07 – 0.28)
4001 to 5000	0.10	(0.04 – 0.30)
5001 and greater	0.08	(0.03 – 0.21)

And finally, using finer income groups (table 3, above) produces a substantially similar interpretation. There is, as may be expected some fluctuation, but the overall trend is linear-like and shows a decreased OR for poor health as income increases.

Similar results are produced with our other outcome measures (e.g., unhealthy diet) and after adjusting for other independent variables.

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