

Review of: "Weathering changes – livelihood adaptation to weather shocks in rural India by disadvantaged social groups"

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Potential competing interests: No potential competing interests to declare.

Reviewed comments on the manuscript entitled "**Weathering changes – livelihood adaptation to weather shocks in rural India by disadvantaged social groups**" submitted to "Qeios" for publication.

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I have gone through the manuscript carefully and with high interest. As a reviewer, my comments are as follows:

General comments: Throughout the manuscript, I noticed some typo-mistake and grammatical errors. Authors should give more attention to the arrangement of the manuscript carefully. Overall, I found the manuscript time demanding.

1. Title: I recommend the title should be "**Weather change – livelihood adaptation to shocks by the disadvantaged social groups in rural India**".

Abstract: Throughout the manuscript I have seen the word 'in India'. No need to mention it repeatedly. This word is well fitted in the title. "Our results indicate that in India, major changes in dryness do significantly increase migration" Rewrite the sentence providing some data.

Rewrite the abstract carefully.

2. Introduction:

- Its effect can be seen all over the world as extreme weather events have become more frequent and severe (Christensen et al., 2007; Masson-Delmotte et al., 2018). Use a comma (,).
- This has important consequences in developing countries where the population is often dependent on agriculture and other climate-sensitive natural resources for their livelihood and they also lack sufficient financial and technical capacity to mitigate such risks (Dell, Jones, and Olken 2014; Harrington et al., 2016; Millock 2015; Skoufias, Rabassa, and Olivieri 2011). Change the highlighted word. Use a comma (,). Rewrite very carefully.
- However, such adaptation is often difficult for disadvantaged groups ~~in these countries~~, as they are more likely to be exposed to such conditions, having limited resources to mitigate ~~those conditions~~. Rewrite accordingly.
- In this paper, we focus on the adaptation to climate change among disadvantaged social groups ~~in India~~. Rewrite accordingly.

- A recent study (A. Mohanty 2020) documents. Check it.
- In 2018, India was ranked the fifth most climate-vulnerable country in the world (Eckstein et al., 2019). Use a comma (,).
- This is especially relevant as approximately 70% of poor households are concentrated in rural areas (World Bank, 2012). (Update the data).
- According to the 2011 Census, SCs and STs comprised 16.2 and 8.2 percent of the population, respectively yet accounted for 40.6 percent of the poor in the 2004/2005 household expenditure survey. Use a comma (,).
- For example, Garg, Jagnani, and Taraz (2020) observed. Check it.
- Under such conditions, the inability to diversify livelihoods spatially or in sectors that are not sensitive, possibly through migration, is a cause of concern (Adger and Adams, 2013; Warner, 2010; Renaud et al., 2007; Black et al., 2011). Rewrite.
- . For disadvantaged social groups In India, migration takes special importance as other avenues like switching crops, investment in irrigation, etc. are not pertinent for they are often landless or with very little landholding (Government of India 2015; B.B. Mohanty 2001). Rewrite.
- The bulk of the movement is within the same district followed by those within the states, with around a tenth of the migration being interstate (Bell et al., 2015). The sentence is not clear. Rewrite.
- As a result, they often decide on profitable opportunities (Kanbur, 1979; A.V. Banerjee and Newman 1991). Check it.
- In India, migrants are less likely to be members of Scheduled groups (Hnatkovska and Lahiri, 2015; Bhattacharya, 2002; Deshingkar and Start, 2003; Mosse 2010). Is it Ok?
- Iversen et al., (2014) show SCs do better in villages than they are in the majority.
- There are numerous studies on the increase in migration probability due to extreme heat or lack of precipitation (Feng, Krueger, and Oppenheimer, 2010; Gray and Mueller, 2012a, 2012b; Gray and Bilsborrow 2013; Jessoe, Manning, and Taylor 2018). Check it.
- Yet others note that climate shocks can also decrease migration due to the adverse effect they have on the resources required to finance migration journeys (Cattaneo et al., 2019). It is often the case that those who are most vulnerable to climate change are most constrained to move and smooth consumption over time (Black et al., 2013). Rewrite.
- This effect is stronger in agricultural states. Sedova and Kalkuhl (2020) using household survey data show that adverse weather shocks decrease rural-rural and international migration and push people into cities. Check it.

3. Research Questions:

Rearrange the research question numerically so that readers can understand it easily.

- Fussell, Hunter, and Gray (2014) review highlighted that migratory responses to slow-onset climate change differ from rapid onset ones as in the former labor migration is more likely to be a livelihood diversification strategy. Check it.
- A usual substitute is informal insurance provided by others within their social network (Rosenzweig and Stark, 1989; Townsend, 1994; Munshi and Rosenzweig 2016). Check it.

4. Methodology: Introduce the methodology section taking data and analytical techniques.

5. Data:

Avoid discussion in the data section. Transfer it to the results section.

- We use TS4.04 data for monthly gridded precipitation and potential evapotranspiration for 1970-2010 from the Climate Research Unit of the University of East Anglia (Harris et al., 2020) to construct SPEI. Check it.
- Defrance, Delesalle, and Gubert (2020) also use SPEI in studying migration in Mali. Check it.

6. Analytical strategy:

- As our climate variable is at the district level and we are primarily interested in measuring cross-level interactions, for estimation purposes, we use multilevel modeling using a random intercept at the district level (Aguinis, Gottfredson, and Culpepper 2013; Gelman and Hill 2006; Mathieu et al., 2012). Check it.
- As is common in a similar analysis, we do not control for crop yields, wages, income, etc, even though they are important in determining migration changes. It has been argued that such controls may lead to overcontrolling as they are affected by climate (Beine and Jeusette, 2019; Cattaneo et al., 2019). Check it.

7. Regression Results:

Rewrite the results section using some numerical value (mention significant level).

8. Conclusion:

Separate the discussion part from conclusion.