Referee report on "Two principles for two-person social choice"

This paper mainly analyses two axioms related to social choice correspondences in contexts of two agents. First, the axiom of Minimal Rawlsianism (MR) that requires that all chosen alternatives should be in the upper half of both agents' rankings. Second, the axiom of Minimal Dispersion (MD) that requires that at least one chosen alternative should be Pareto efficient and has minimal dispersion among the efficient alternatives.

The paper has many results related to these properties and other axioms that are variants of MR and MD. The main result of the paper in my opinion shows that MR and MD are incompatible when there are 7 or more than 8 alternatives (Theorem 4) because in those cases there are preference profiles in which all Pareto efficient alternatives with minimal dispersion appears in the bottom half of the ranking of at least one agent (Lemma 5). The remaining results are focused in particular social choice correspondences in the literature and show if each of them satisfies the axioms or not.

I consider that this impossibility is interesting and could be the first result of a paper analysing these axioms that could be accepted in a journal like Social Choice and Welfare. However, the remaining of the results of this version of the paper are not sufficiently relevant in my opinion to complete the paper to deserve publication in a journal like Social Choice and Welfare. I would have preferred to complete the paper with some characterizations of, on one hand, correspondences that satisfies MR and other additional intuitive axioms and, on the other hand, correspondences that satisfies MD and other intuitive axioms. The authors acknowledge in Footnote 9 that they cannot obtain characterizations using only the axioms analysed in this paper. However, I suggest them to try to add new axioms to obtain characterizations. Ideally, I would like to see a set of axioms that, combined with MR, leads to some correspondences and, combined with MD, leads to other correspondences.

I have an additional comment: k-strict Rawlsianism is weaker the bigger k is. Since MR corresponds with k-strict Rawlsianism when k equals m/2 rounded down, and MR is incompatible with MD, a question that arises is which is the lowest value of k such that k-strict Rawlsianism is compatible with MD? A similar question can be done with k-Rawlsianism.

I finish with some typos and minor comments:

a) When defining [[p, q]], it is stated that it is the intersection between the closed interval [p, q] and the set of natural numbers. However, given that \lambda_P(x) could be 0, I think that [[p, q]] should be the intersection between [p, q] and the set of integers.

b) I suggest to add that H(P) equals U(P, k) when k is m/2 rounded down.

c) In the formal definitions of the VR correspondence, it is stated that it selects among alternatives in H(P) the ones with the highest Borda scores. However, in the text it is said that each individual vetoes her worst (m-1)/2 rounded down alternatives before selecting the alternatives with the highest Borda scores. And, if I am not wrong, this is not equivalent when m is even.

d) Similarly, in the formal definitions of the SL correspondence, it is stated that it selects among alternatives in H(P) the ones that are maximal for each individual. However, in the text it is said that the selected alternatives are the best ones for each agent that are not among the worst (m-1)/2 rounded down alternatives of the other agent. Again, I think that this is not equivalent when m is even.