One Land, Many Promises: Neighborhood Recommendation in The Face of Heterogeneity

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A growing body of literature finds that childhood locations have a significant and long-lasting effect on outcomes at adulthood (see Chyn and Katz, 2021, for a review). This line of research has led governments and scholars to deliberate on whether and how to incorporate these insights in existing public housing policies, e.g. by restricting public housing locations or providing housing voucher recipients with recommendations on where to move (Bergman et al., 2019). However, this line of research has focused entirely on policies that assume a unique ladder of location effects, namely, that every location has a constant effect across all individuals, an assumption that is at odds with empirical evidence.[2] This raises the concern that the currently promoted policies, which do not take disparities into account, could be misguided and result with some families experiencing negative effects. Alas, the first-best of restricting access to public housing by group characteristics, or offering different recommendations to different populations is not viable due to ethical, political, and horizontal equity concerns. This gives rise to a constraint on the applicable policies.

In this work, we study the heterogeneity in childhood location effects in the ethnically diverse Israeli context. Building on the identification strategy of Chetty and Hendren (2018), we find that different ethnic and immigration groups gain differently from growing up in different neighborhoods, suggesting that there is not only one "promised land". In an effort to characterise what drives disparities, we correlate group effects and gaps with locations characteristics. We find that the correlation of diversity, municipality characteristics, and social capital variables is different for different groups, and stronger for immigrants and Jews whose family immigrated from Asia or Africa (*Mizrahim*). We also don't find strong correlation between group shares and effects, as would be suggested by a Roy model of selection on gains.

Then we turn into our main normative analysis and evaluate how a housing agency could form housing policy, such as location recommendation to housing voucher recipients. We consider policies that are aware of group heterogeneity but unable/unwilling to condition on observed ethnic characteristics. To do so, we build a decision theoretic model and explore policies with different levels of pessimism regarding the unknown compliance pattern. Specifically, we consider a class of maximin lower-bound policies, that are robust to any future compliance patter, and avoid harm as much as possible. In a preliminary analysis using a toy model of public housing, we find that the mostly harmless locations are more likely to be geographically diverse and positively correlated with social capital indicators such as vote rate and census response rate in 1995 census. We also show that the ranking location based on the maximin welfare function minimizes the share of households that would experience a negative effect compared to the counterfactual of being randomly assigned to a location.

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[2]In the US, Chetty et al. (2018) find that the correlations in mean earnings between Whites, Blacks, and Hispanics across tracts conditional on having parents at the 25th percentile are approximately 0.6.

In the next step of the paper we plan to turn into a more realistic model, similar to the settings in Bergman et al. (2019), and build a housing recommendation policy for housing voucher recipients. We will allow an unrestricted relationship between recommendations and compliance behaviour and between location effect and preferences. We will also compare each maximin policy to the first best that gives targeted recommendations, and to a "restricted first-best" that allows targeted recommendations but with some restriction to group shares to avoid segregation.

Employing a recommendation policy for public housing recipients would generate a positive effect only if families do comply with the policy, and if they do so in a way that is actually beneficial. Evidence in favor of the first point were the main research question in the Bergman et al. (2019) were they find in an experiment of housing voucher recipients in Seattle that families did comply with recommendations and didn't seem to make sacrifice on other observable dimensions.

The second point in the argument, that compliance with the recommendations is beneficial, was raised in Andrews et al. (2019) and Mogstad et al. (2020). Specifically, they cast doubt on whether approaches such as in Bergman et al. (2019) of selecting the top neighborhoods could generate positive effects. This line of research focus mostly on inference, emphasizing the ramifications of ranking locations based on noisy estimates rather than their true values. In Mogstad et al. (2020), they suggest to recommend a location only if the probability of wrongly ranking that place compared to *all* the locations together is bounded, paralleling policy decision to multiple hypothesis testing controlling for Family Wide Error Rate (FWER). However, such a cautious point of view leads to excessively choosing the status quo, implying an extreme form of risk aversion that is difficult to defend. As noted in Kline (2022), while the analogy between policy selection and multiple testing can be helpful for building intuition, forming a policy requires a careful contemplation of societal objectives.

Abstracting from a binary hypothesis testing model doesn't imply our policy recommendation doesn't avoid doing harm. Similar to Mogstad et al. (2020) we are concern about about the consequences of unknown compliance patterns. Under heterogeneous location effects with a unified treatment, such concern is amplified as results depend on whether the individuals who comply with the recommendation are the ones who benefit from it. Unknown compliance patterns could arise either because current policy efforts are not based on location choices estimates, or due to barriers to market clearing such as information frictions and biased beliefs (Bergman et al., 2020), discrimination (Turner et al., 2016; Cunningham et al., 2018; Christensen and Timmins, 2021), and consideration sets.

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