COST Action IC1205 on Computational Social Choice: STSM Report

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The main purpose of the visit was to study kindergarten allocation mechanisms in Estonia using two municipalities as examples. During my visit I worked with Péter Biró analysing the current practices in those municipalities, highlighting simple changes that can improve the allocation procedure and also drafted potential designs for future affirmative action policies.

In Estonia most municipalities have a centralised data collection of parents' preferences and also do a centralised allocation. The allocation is organised as a discussion among the heads of kindergartens, trying to take into account parents preferences and other information regarding prioritisation that the heads of kindergartens might have. We highlighted that this procedure does not scale well and might create inefficiencies in the allocation. Straightforward enhancements would be to create a classical two-sided market with [unlimited] parents preferences and clear priorities from local municipalities and use Child Optimal Deferred-Acceptance for allocation.

Furthermore we proposed several policy structures for affirmative action requirements from local municipalities. For example children should be given priority in kindergartens where they have siblings, but not always, so this requires setting reserves on this priority class. Or when prioritising by distance some small differences might create bigger differences in allocation, so a zone based approach with lottery might be a better alternative. Altogether we designed six policies that we started to evaluate based on current preference data from municipalities. Collaboration on full comparison of policies and utility function estimation for families is still work in progress.

Additionally we investigated efficiency in decentralised matchings using better and *noisy* best response dynamics. The first is a well-known dynamic where blocking pairs in a matching are satisfied randomly. The second is an alteration of best response dynamic where proposing agents don't always make proposals to their best blocking pair, but might act noisily and might select some other blocking pair. The investigation will continue with evaluating maximal and stable matchings compared to the best and better response dynamics.