Necessary and Sufficient Conditions for Quasi-Transitivity and Transitivity of Pareto-Inclusive Non-Minority Rules

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## Abstract

It is shown that (i) for every Pareto-inclusive non-minority rule a necessary and sufficient condition for quasi-transitivity is that limited agreement or Latin Square unique value restriction holds over every triple of alternatives (ii) for every special Pareto-inclusive non-minority rule a necessary and sufficient condition for transitivity is that strong value restriction or absence of unique extremal value holds over every triple of alternatives (iii) for simple Pareto-inclusive non-minority rule a necessary and sufficient condition for transitivity is that strongly echoic preferences or strong value restriction or absence of unique extremal value is satisfied over every triple of alternatives.