

In the context of what we call "Subset Voting" we attempt to connect four choice paradigms, namely "Approval Voting" from the political science literature, "Random Utility Models" from the econometrics literature, the "Weak Utility Model" from the mathematical psychology literature, and "Social Welfare Orderings" from the social choice literature. Subset voting denotes a choice situation where one fixed set of choice alternatives (candidates, products) is offered to a group of decision makers, each of whom is requested to pick a subset containing any number of alternatives. We propose a class of "Random Utility Models", built upon the notion that each decision maker has a personal ranking of the alternatives, with the random utilities being defined by a probability distribution on the set of all rankings. Using a variant of Sen's (1966) theorem about value restriction, and considerably extending related ideas found in the Feld and Grofman (1986), we derive conditions for the random utility model to satisfy the "Weak Utility Model" and thus to yield a "Social Welfare Ordering". We thereby link axiomatic concepts such as "Social Welfare Ordering" and "Condorcet Candidate" to an empirically testable random utility model of choice behavior. In contrast to the negative and discouraging results generated by various impossibility theorems and improbability results in axiomatic social choice theory, we demonstrate on several real data sets from the subset voting literature that in each case the random utility model holds and yields transitive majorities. Furthermore evidence is gathered that approval voting would have resulted in the election of a Condorcet candidate in each of the 6 votes studied.