In the study, we presented a new experiment paradigm, Multi-Items Rearrangement task, for measuring similarity matrix between of items. The Multi-Items Rearrangement task requires less time than traditional method. In the Multi-Items Rearrangement task, multiple items are presented in a single trials, and participants respond the similarity between the items by rearranging the distance between items. Two experiments were conducted to test the reliability and the validity of the Multi-Items Rearrangement task with either discrete material from multiple dimensions or continuous material from single dimension. The results shown that the Multi-Items Rearrangement task was two times faster than Paired-Comparison task, and the Multi-Items Rearrangement task was as reliable and valid as the Paired-Comparison task.