low CSMFA
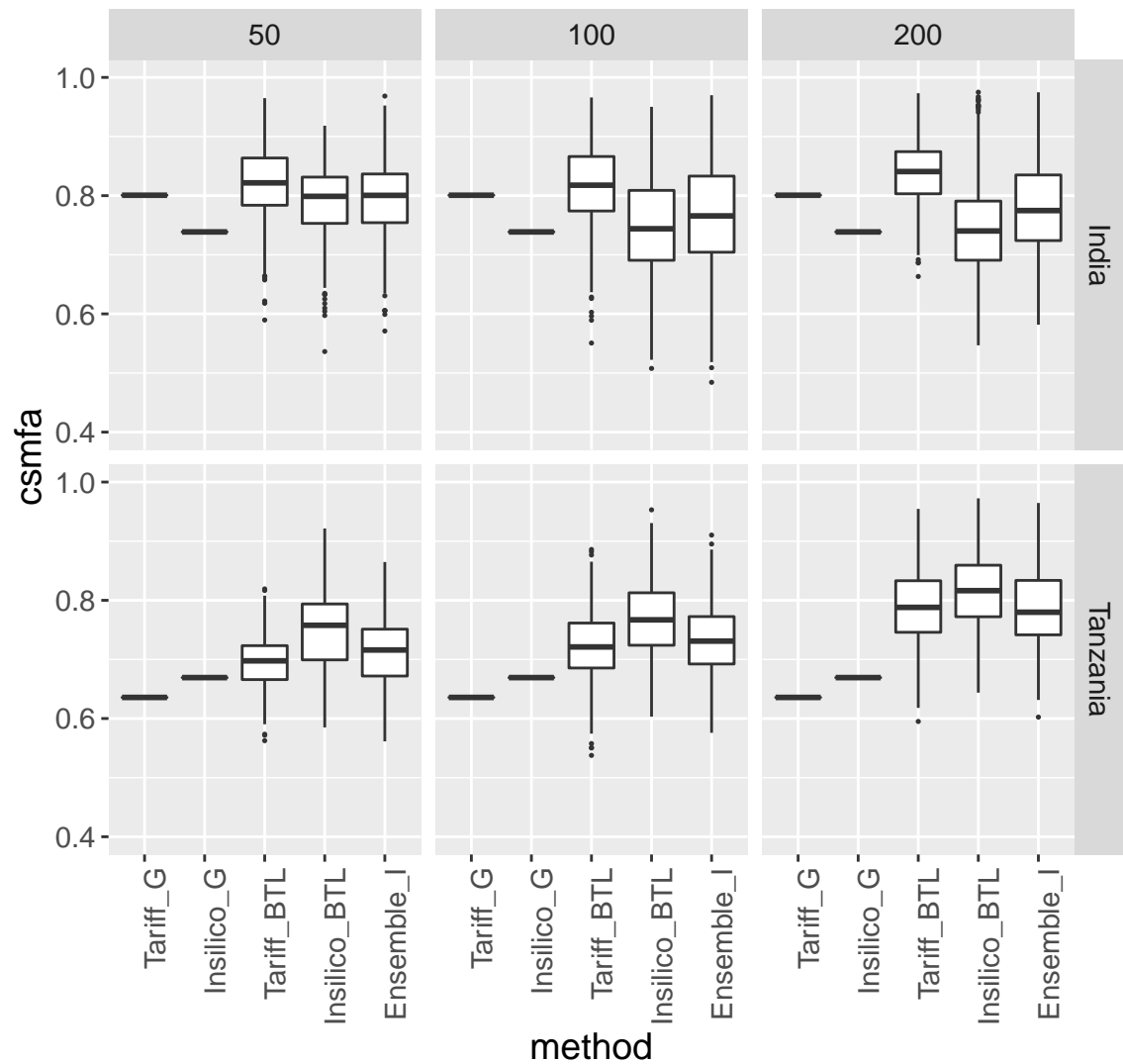
representative CSMFA