Predicting group performance using group indices: A new proposal

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This research is focused on the influence of different psychological variables over group performance. Specifically, personality measures, the Skew-symmetry index Φ [1], and generalized/dyadic measurements of reciprocity of the Social Relations Model [2] were analyzed. The objective was to examine whether personality measures, Φ values or generalize/dyadic (or both) reciprocity measurements in interpersonal perceptions could explain group performance (following a round robin paradigm).

Method

In order to carry out the study, a sample of 64 participants was gathered forming 16 groups of four people. Each group was enrolled in a laboratory task consisting two sessions of 60 minutes each. During the first session, they were given the "Foundation Task" [3] to get accustomed to the methodology of the task and they answered the personality questionnaire NEO-FFI [4]. In the second session, the instruction was to reach as many agreements as they could in a set of problem solving tasks. Due to the characteristics of this kind of tasks (without a unique valid solution) participants were forced to interact during the session to reach solutions. Interaction allowed them to form interpersonal perceptions about how members of the group collaborated to achieve the target. At the end of this session, participants filed in a questionnaire in which they had to rate each partner (round robin rating). The scores reflected participants' perception about the contribution of their partners to reach the maximum number of agreements. The Skew symmetry index and general/dyadic reciprocity measures were calculated from the answers to this questionnaire. The number of agreements in the second session was taken as an indicator of group performance. A discrepancy index between the scores in NEO-FFI was developed and computed as an index of groups' personality.

Results

Our results show moderate negative correlations between the number of agreements and phi value of item 1 (*She/He profits from time to solve the task*), generalized reciprocity of interpersonal perceptions of item 6 (*Her/His dialog result helpful to solve the task*), and discrepancy index of Neuroticism, r= -.560 (p= .24), r= -.504 (p=.047) and r= -.555 (p=.026), respectively. The regression analysis shows that the Φ value for item 1, generalized reciprocity measure of item 6 and personality discrepancy in Neuroticism explain together 70.4% (p = .002) of groups performance variance. Φ value of item 1 accounts for 31.4% of this variance and including generalized reciprocity measure of item 6 and discrepancy in Neuroticism this percentage increases 25.7% and 13.3% respectively.

Conclusions

These results partially support that group measures can be useful to predict groups' performance in social environments. In our research, results showed that a discrepancy in perceptions relating to a useful dialog, the profit of time and scores in Neuroticism is related to the number of agreements. These results show that group measures predict more percentage of variance than those reported by some authors [5,6] with predictions between -.06 and .22.

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