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3. Large group = 8 users

d. No. of Recommendations per user = 50

3.7 Result

The results of the evaluation of the *GRS* that we built in this research can be seen in Table 7 and Table 8. We evaluated the three methods (*AF*, *BF*, *WBF*) by randomly creating 50 groups, where one member could be included in many groups.

Table 7. Precision

Methods	Small Group (K=3)	Medium Group (K=5)	Large Group (K=10)
AF	1	0.5	0.944
BF	1	0.333	1
WBF	1	0.333	1

Table 8. Recall

Methods	Small Group (K=3)	Medium Group (K=5)	Large Group (K=10)
AF	0.0019	0.0044	0.0076
BF	0.0019	0.0009	0.0063
WBF	0.0019	0.0009	0.0087

Table 7 and Table 8 show the results of the precision and recall of each approach for small, medium and large groups. All three approaches have the same precision and recall for small groups. The conclusion from the evaluation results is that these three approaches are suitable for small groups in the goodbooks-10k dataset. We can also see that the AF approach is better than the BF and WBF approaches for the medium group. This can be seen in the precision and recall in Table 7 and Table 8. The WBF approach is also the most effective one for large groups. Based on Table 7, we get good precision results. One of the things that can happen is because the GRS built in this research uses a quality dataset after preprocessing data.

4. CONCLUSION

This research builds a group recommender system for the book domain using the Collaborative Filtering paradigm with the Matrix Factorization method. The dataset used in this research is sourced from *goodbooks-10k*. We use three approaches, such as AF, BF, and WBF to be applied to three different categories of groups. The three categories of groups have many different members, where small groups consist of three users, medium groups consist of five users, and large groups consist of ten users. The approach methods are compared to find out the best approach method for each group category. The GRS that we have developed can be applied to any dataset that includes user_id, item_id, and rating features. Nevertheless, it is important to note that the research outcomes may vary. The specific findings of our research are based on the goodbooks-10k dataset, which has been subjected to preprocessing techniques in order to enhance the accuracy of the GRS that we have constructed. As future work, we propose that further research can build a *GRS* by utilizing the method we apply to handle more features, such as genre, price, reading time, etc.

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