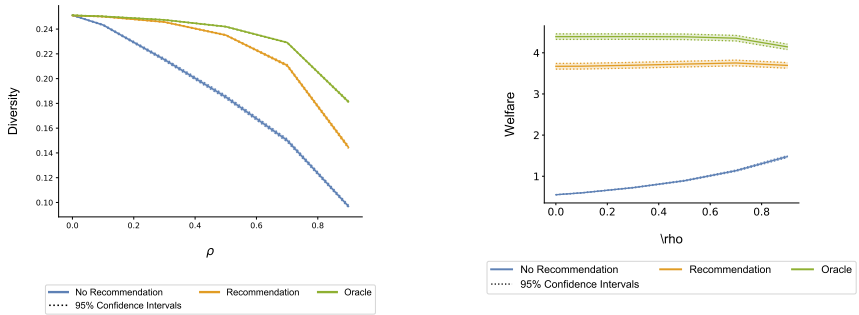
Appendix For Deconstructing the Filter Bubble: Consumer Decision-Making and Recommender Systems

1 OMITTED FIGURES

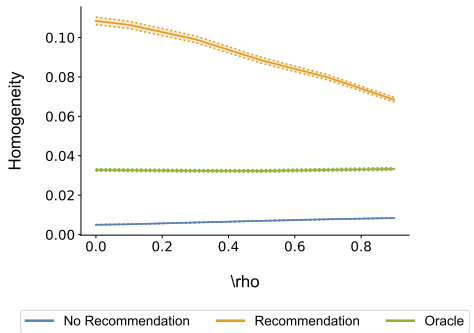
This section contains figures that were omitted from the main text due to space constraints. Thus, the figures in this section are computed utilizing the same parameter values described in the main text for $N = 200$.

Fig. 1. Relationship between User Welfare and Diversity, varying ρ



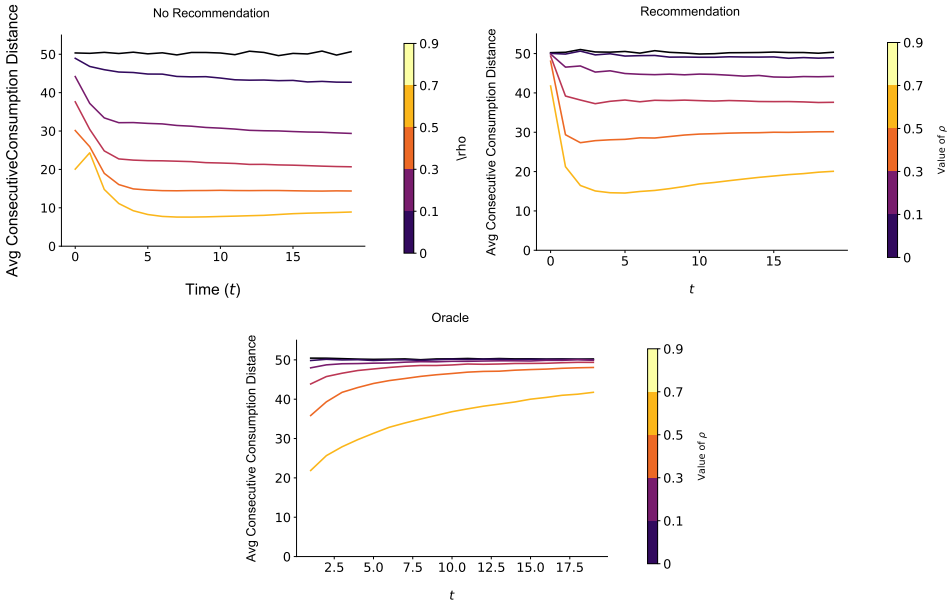
Notes: The figure on the left displays the relationship between rho, the correlation between valuations of items, and overall consumed product diversity. The figure on the right displays the relationship between ρ and overall welfare.

Fig. 2. Relationship between ρ and Homogeneity, $N = 200$



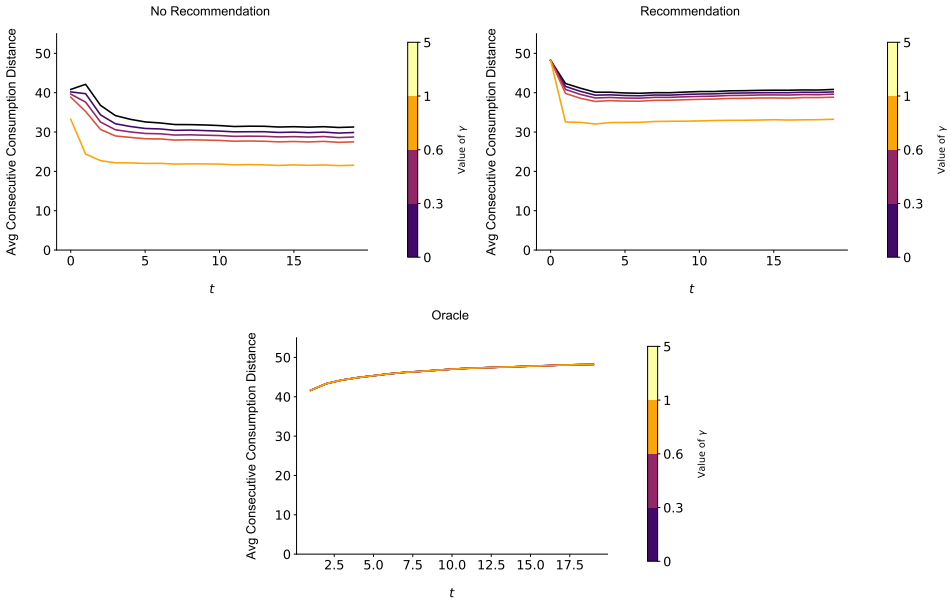
Notes: Notes: This figure displays the value of the homogeneity measure as we vary the inherent correlation between the valuation of the items, ρ. Each line represents this plot for a single recommendation regime.

Fig. 3. Relationship between Local Consumption and ρ, $N = 200$



Notes: Each figure plots the average consecutive consumption distance across time as the inherent correlation between the valuation of the items, ρ. The top left displays the no recommendation regime, the top right displays the recommendation regime, and the bottom displays the oracle regime.

Fig. 4. Relationship between Local Consumption and γ, $N = 200$

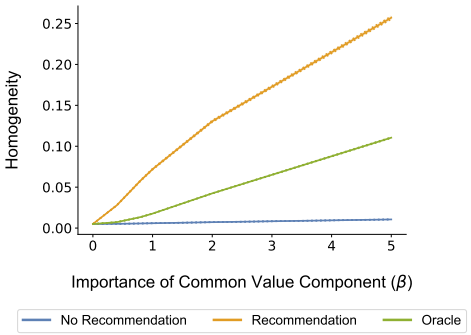


Notes: Each figure plots the average consecutive consumption distance across time as the risk aversion level of users, γ, varies. The top left displays the no recommendation regime, the top right displays the recommendation regime, and the bottom displays the oracle regime.

2 N = 100

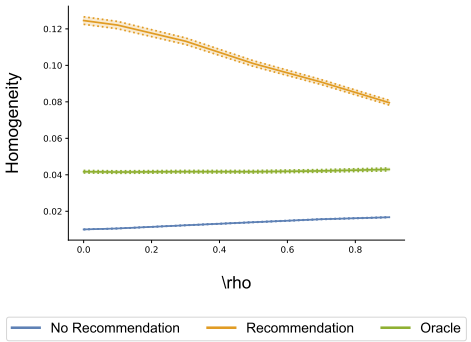
This section contains the same figures as reported in the main text and appendix, but for $N = 100$ instead of $N = 200$.

Fig. 5. Relationship between β and Homogeneity, $N = 100$



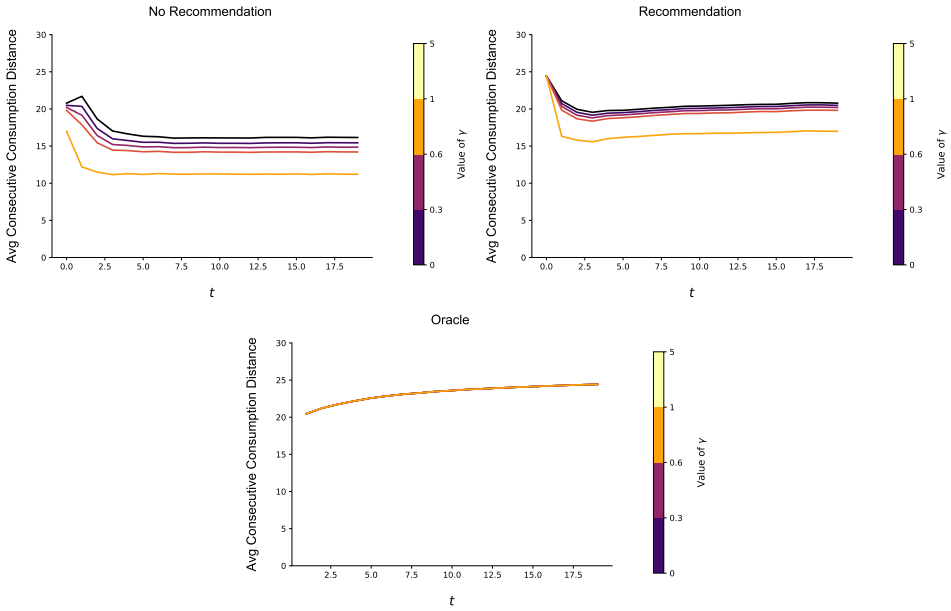
Notes: This figure displays the value of the homogeneity measure as we vary the weight of the common value component, β. Each line represents this plot for a single recommendation regime.

Fig. 6. Relationship between ρ and Homogeneity, $N = 100$



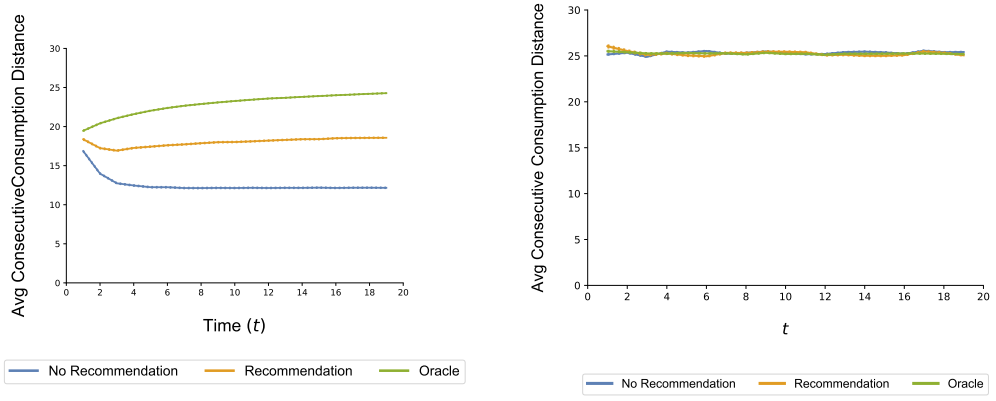
Notes: Notes: This figure displays the value of the homogeneity measure as we vary the inherent correlation between the valuation of the items, ρ. Each line represents this plot for a single recommendation regime.

Fig. 7. Relationship between Local Consumption and γ, $N = 100$



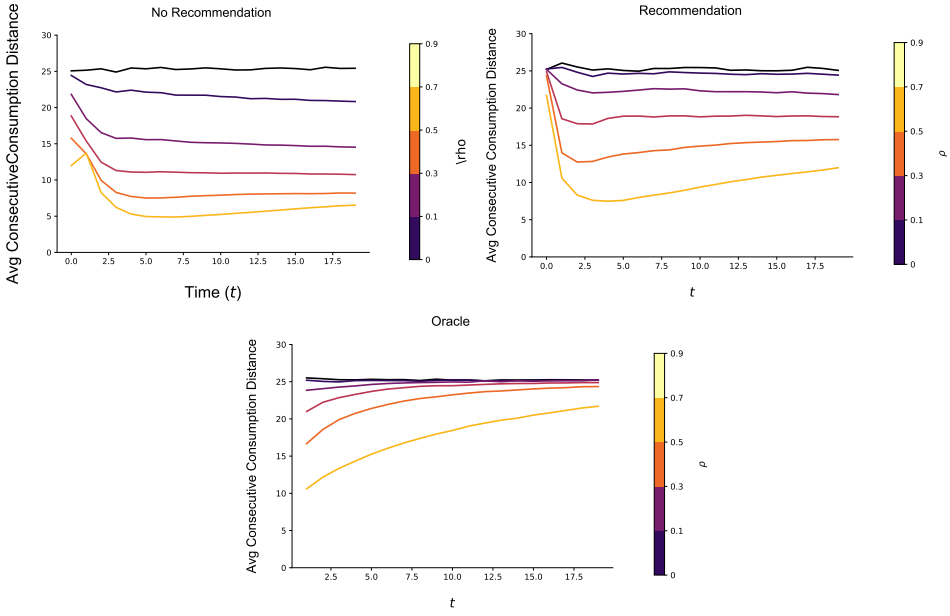
Notes: Each figure plots the average consecutive consumption distance across time as the risk aversion level of users, γ, varies. The top left displays the no recommendation regime, the top right displays the recommendation regime, and the bottom displays the oracle regime.

Fig. 8. Local Consumption and Correlation, $N = 100$



Notes: The figure shows the consecutive consumption path difference between the no recommendation, recommendation, and oracle regime. The figure on the left displays the average consecutive consumption distance aggregating over simulations where $\rho = 0$ and the figure on the right displays the average consecutive consumption distance aggregating over simulations where $\rho > 0$

Fig. 9. Relationship between Local Consumption and ρ, $N = 100$

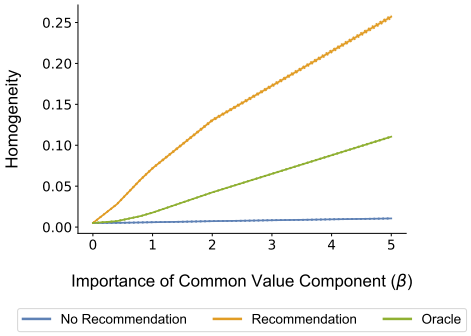


Notes: Each figure plots the average consecutive consumption distance across time as the inherent correlation between the valuation of the items, ρ. The top left displays the no recommendation regime, the top right displays the recommendation regime, and the bottom displays the oracle regime.

3 N = 500

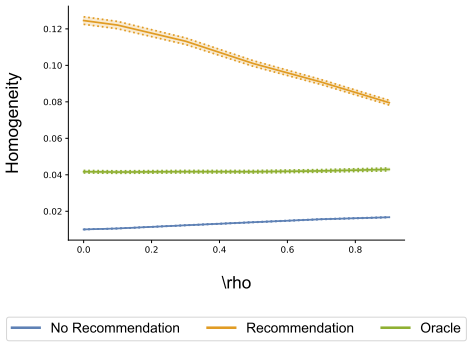
This section contains the same figures as reported in the main text and appendix, but for $N = 500$ instead of $N = 200$.

Fig. 11. Relationship between β and Homogeneity, $N = 500$



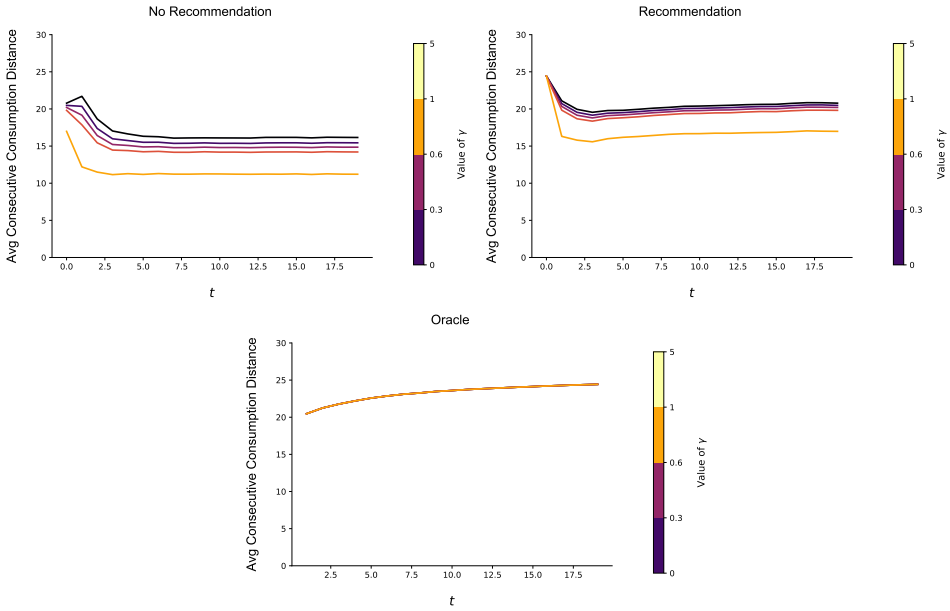
Notes: This figure displays the value of the homogeneity measure as we vary the weight of the common value component, β. Each line represents this plot for a single recommendation regime.

Fig. 12. Relationship between ρ and Homogeneity, $N = 500$



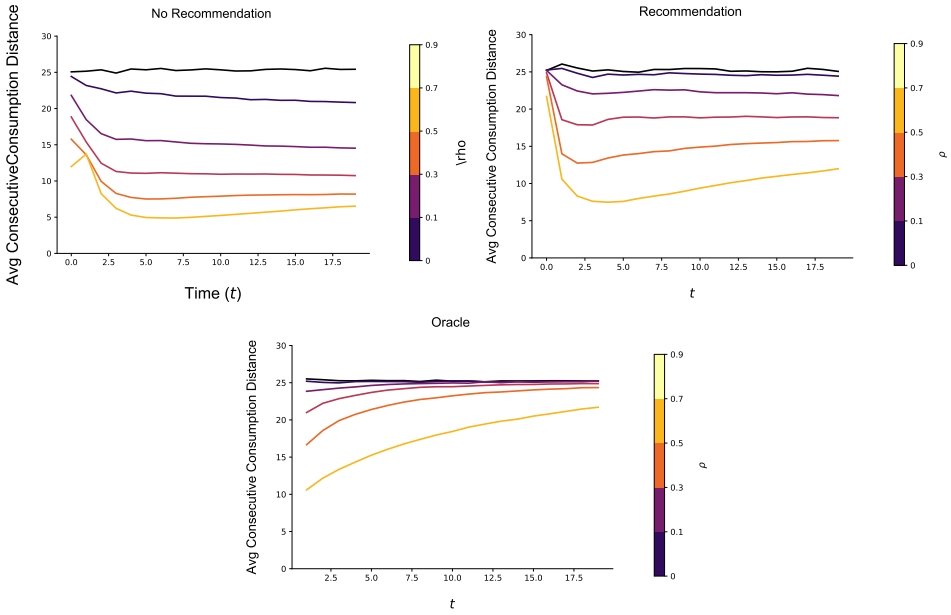
Notes: Notes: This figure displays the value of the homogeneity measure as we vary the inherent correlation between the valuation of the items, ρ. Each line represents this plot for a single recommendation regime.

Fig. 13. Relationship between Local Consumption and γ, $N = 500$



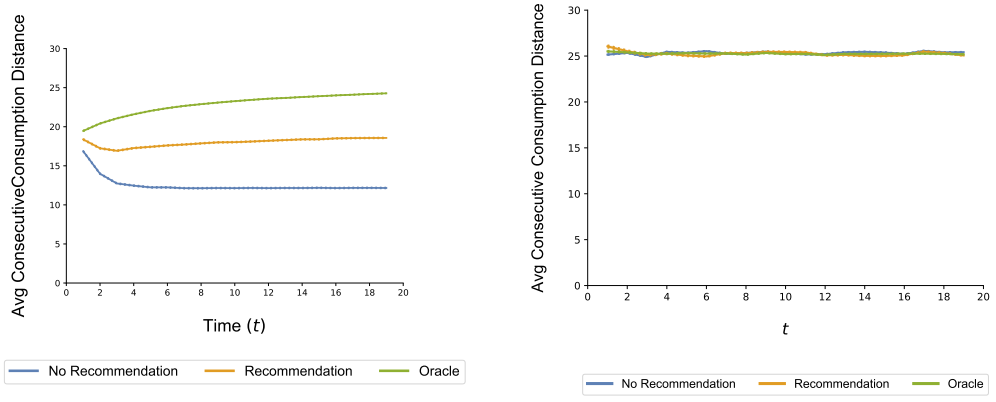
Notes: Each figure plots the average consecutive consumption distance across time as the risk aversion level of users, γ, varies. The top left displays the no recommendation regime, the top right displays the recommendation regime, and the bottom displays the oracle regime.

Fig. 14. Relationship between Local Consumption and ρ, $N = 500$



Notes: Each figure plots the average consecutive consumption distance across time as the inherent correlation between the valuation of the items, ρ. The top left displays the no recommendation regime, the top right displays the recommendation regime, and the bottom displays the oracle regime.

Fig. 15. Local Consumption and Correlation, $N = 500$



Notes: The figure shows the consecutive consumption path difference between the no recommendation, recommendation, and oracle regime. The figure on the left displays the average consecutive consumption distance aggregating over simulations where $\rho = 0$ and the figure on the right displays the average consecutive consumption distance aggregating over simulations where $\rho > 0$