

Proposed structure

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5/27/2020

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Introduction and research question

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Key findings

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Clustering process

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- clustering on the data
- why clustering

The data

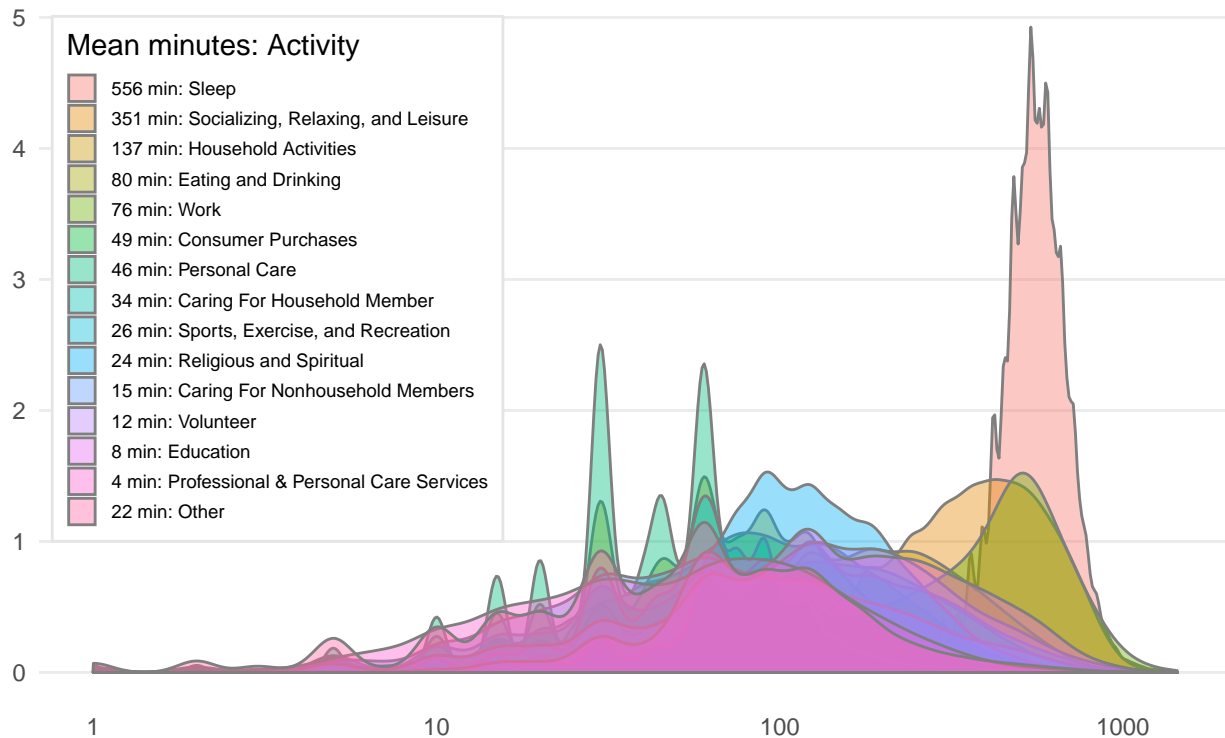
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key points - weekend only - going to examine a weighted sample of 25k

| Activity | Type | Mean | Participation rate |
|---------------------------------------|------------|------|--------------------|
| Sleep | Continuous | 556 | 1 |
| Socializing, Relaxing, and Leisure | Continuous | 351 | 0.96 |
| Household Activities | Continuous | 137 | 0.8 |
| Eating and Drinking | Continuous | 80 | 0.95 |
| Work | Continuous | 76 | 0.23 |
| Consumer Purchases | Continuous | 49 | 0.45 |
| Personal Care | Continuous | 46 | 0.76 |
| Caring For Household Member | Continuous | 34 | 0.26 |
| Sports, Exercise, and Recreation | Continuous | 26 | 0.18 |
| Religious and Spiritual | Continuous | 24 | 0.17 |
| Other | Continuous | 22 | 0.28 |
| Caring For Nonhousehold Members | Continuous | 15 | 0.14 |
| Volunteer | Continuous | 12 | 0.07 |
| Education | Continuous | 8 | 0.04 |
| Professional & Personal Care Services | Continuous | 4 | 0.04 |
| Total | - | 1440 | - |

Weekend Time use activities

Non-zero values only



Demographics of the respondents

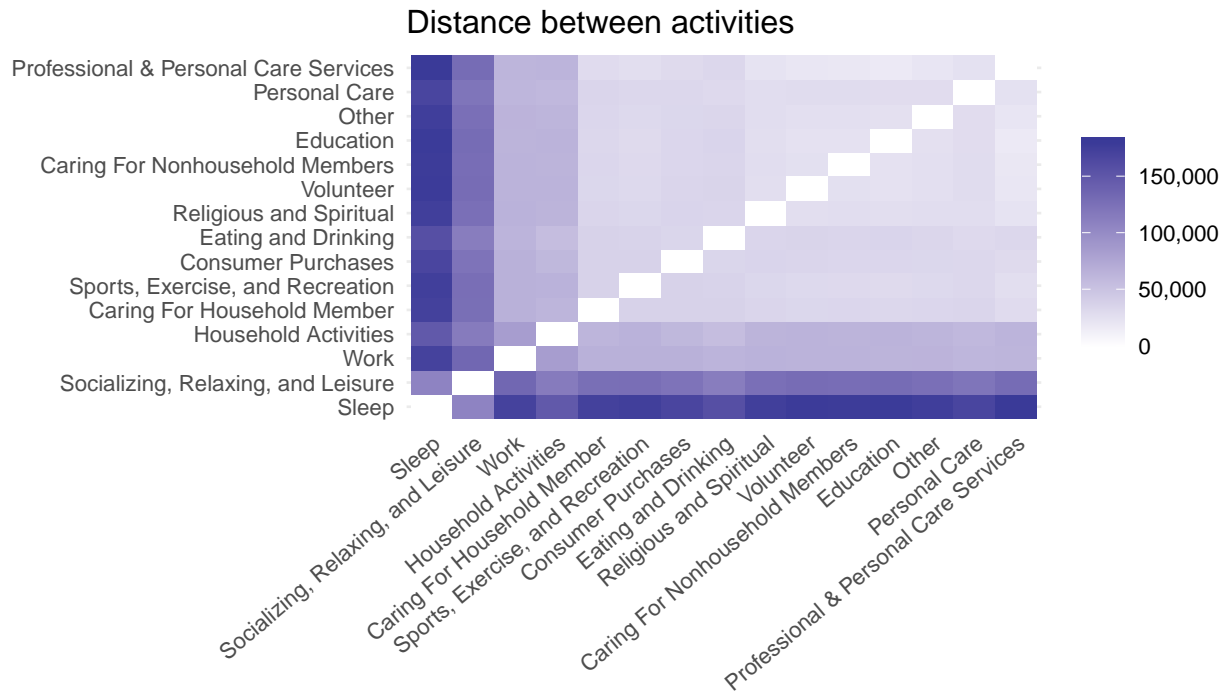
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drop race

Clustering

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Process - hierarchial - discuss but don't show: kmeans - discuss but don't show: c(g) and silhouette metrics - no need for transformations / scaling



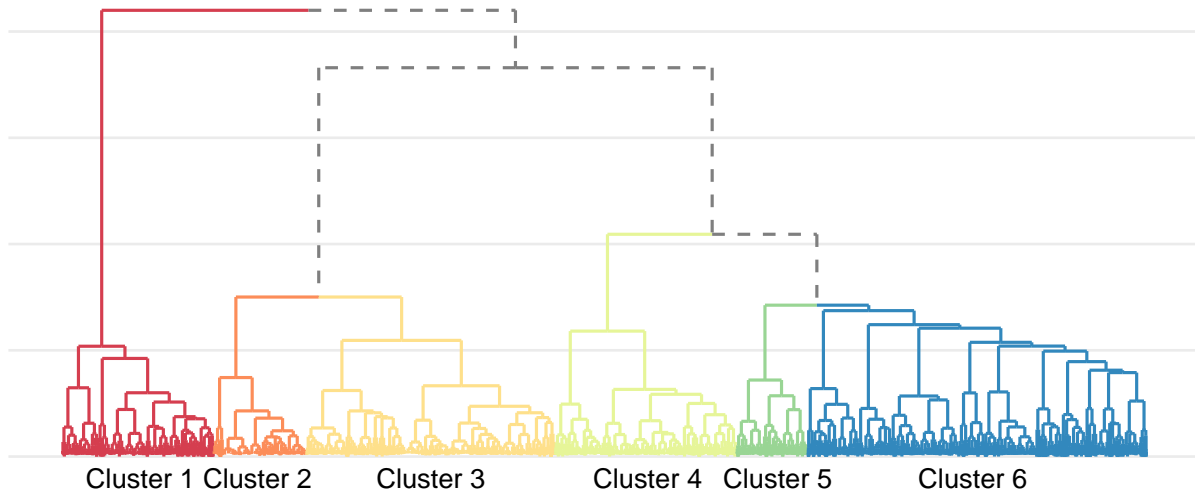
| | PC1 | PC2 | PC3 | PC4 | PC5 | PC6 |
|-------------------------------|-------|-------|-------|-------|-------|-------|
| Standard deviation | 238.7 | 188.7 | 151.9 | 113.6 | 85.37 | 80.97 |
| Proportion of Variance | 0.33 | 0.21 | 0.14 | 0.08 | 0.04 | 0.04 |
| Cumulative Proportion | 0.33 | 0.54 | 0.68 | 0.75 | 0.8 | 0.84 |

Discuss dendrogram

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Ward (D2) linkage

6 cluster solution

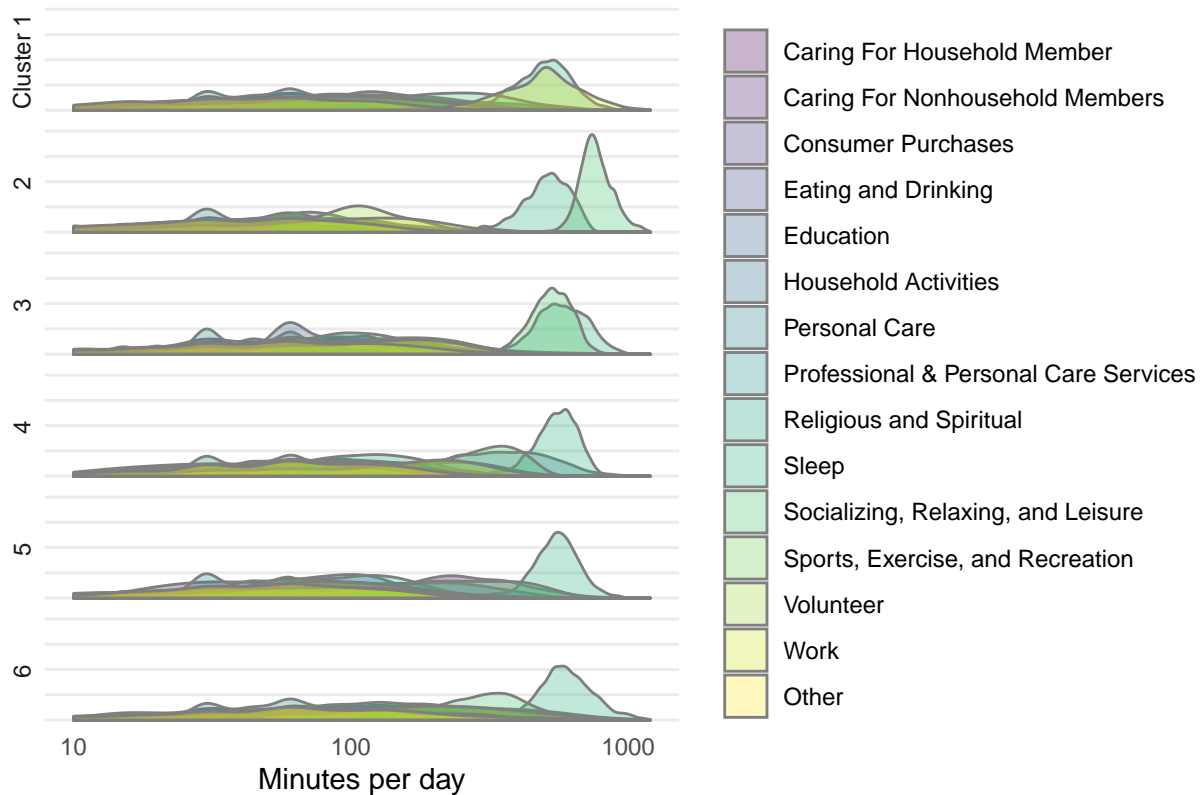


Breaking down the clusters

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- Cluster 1:
- Cluster 2
- Cluster 3
- Cluster 4
- Cluster 5
- Cluster 6: Catch all 'Other'

Weekend activities split by cluster

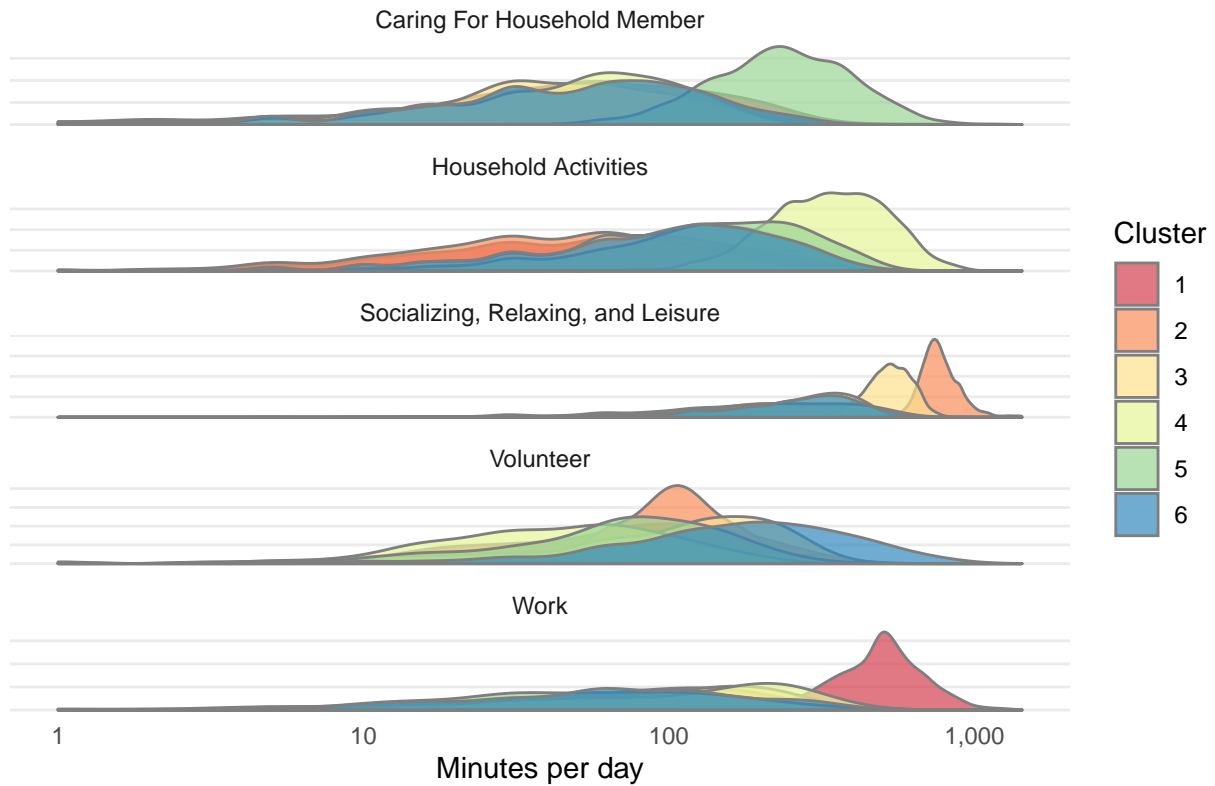


Zoom on on specific activities

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Discuss how this cluster split this activities the most

Least similar activities after cut by cluster

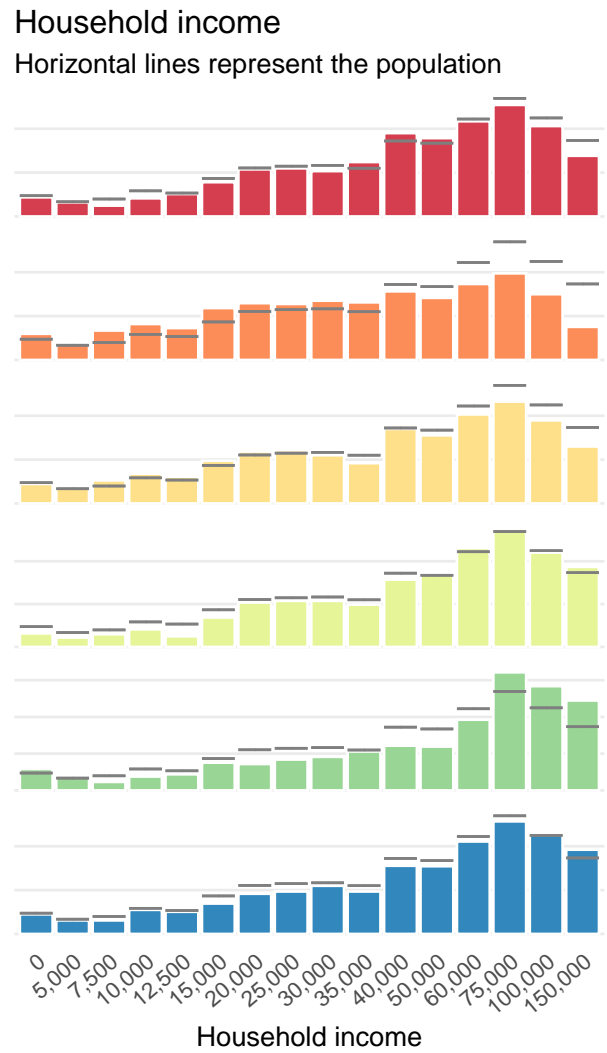
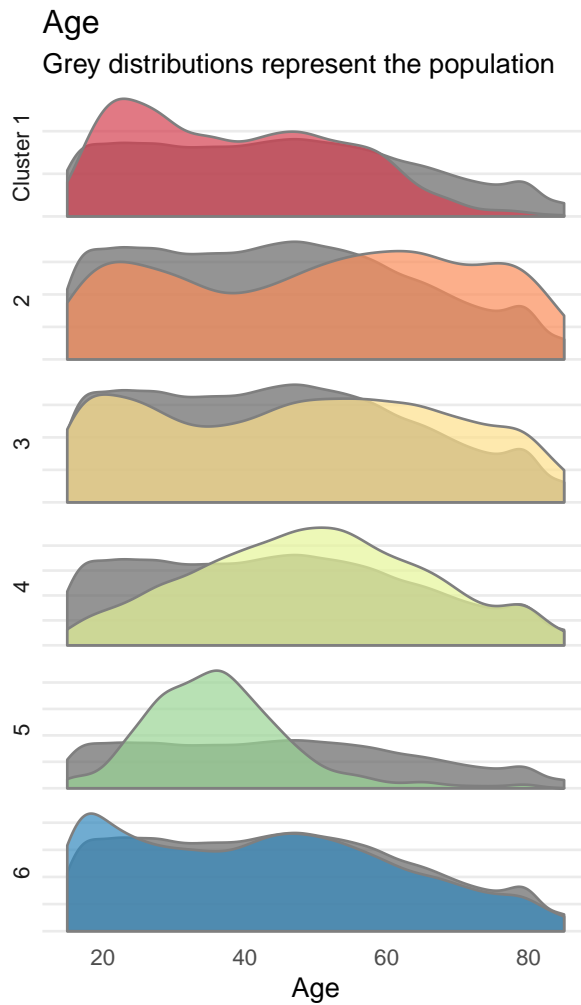


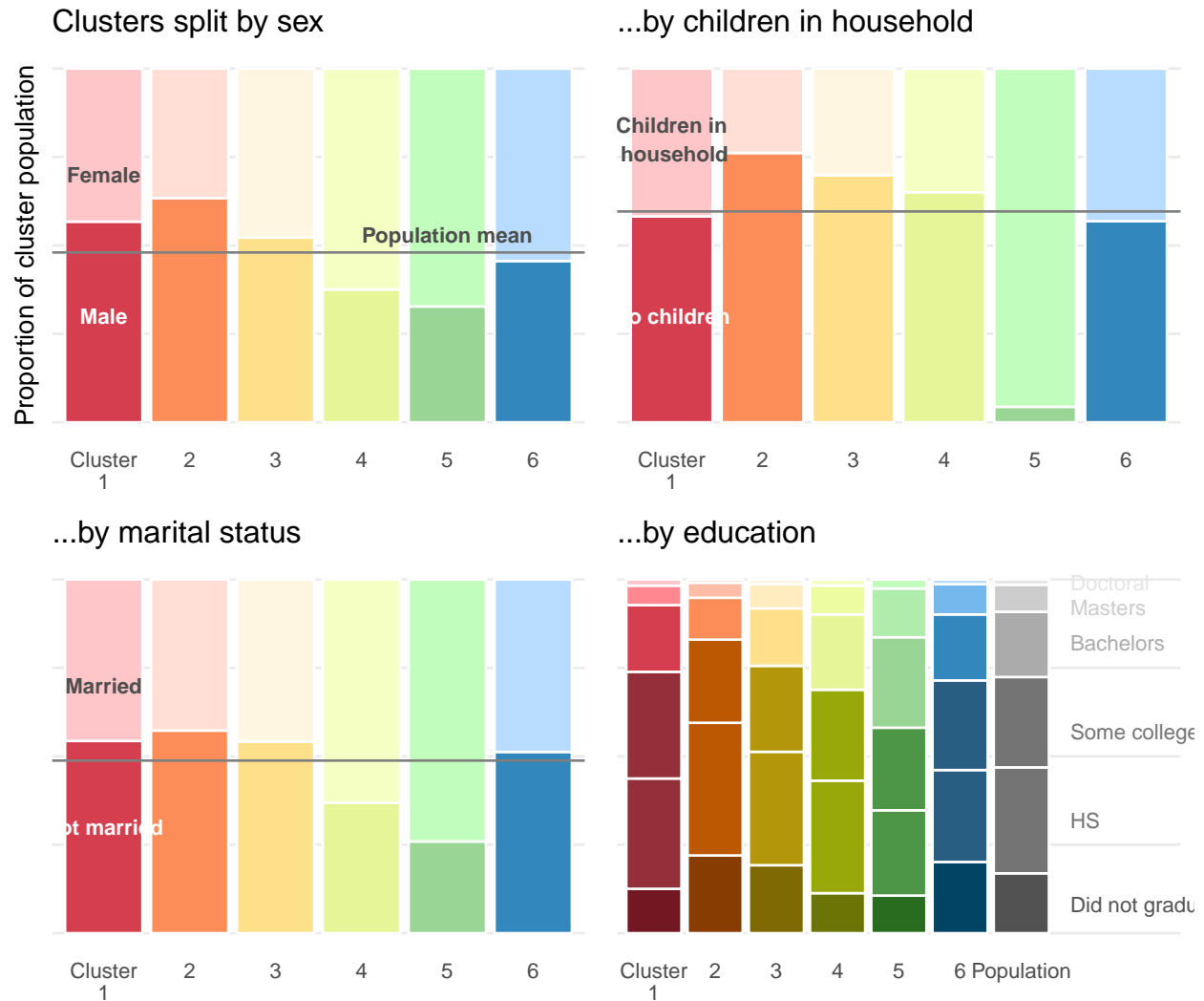
Discuss demographics

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discuss how some of the cluster difference are associated with different demographics

Age, income, married, child, educate, gender





Conclusion

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