



Data Glacier

Your Deep Learning Partner

Data Analysis

Customer Segmentation

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Team members

Joseph Antony

- Email: joeanton719@gmail.com
- Country: Turkey
- Company: UrbanStat

Melisa Gözet

- Email: mgozet@gmail.com
- Country: Turkey
- University: Ankara University

Dilem Ünal

- Email: diilemunal@gmail.com
- Country: Turkey
- University: Istanbul Aydın University

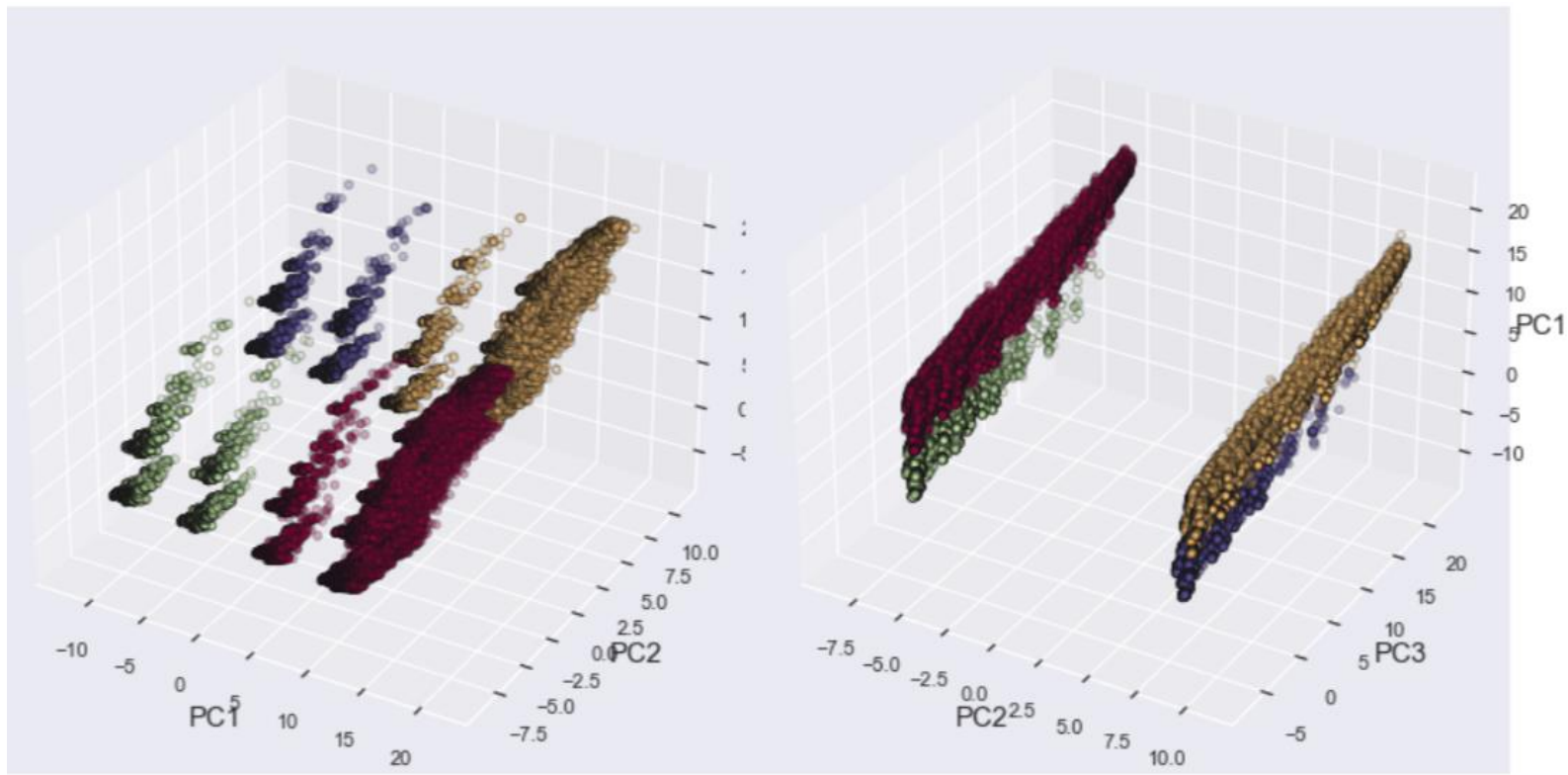
Aynur Cemre Aka

- Email: cemreaka@gmail.com
- Country: Turkey
- University: Yaşar University

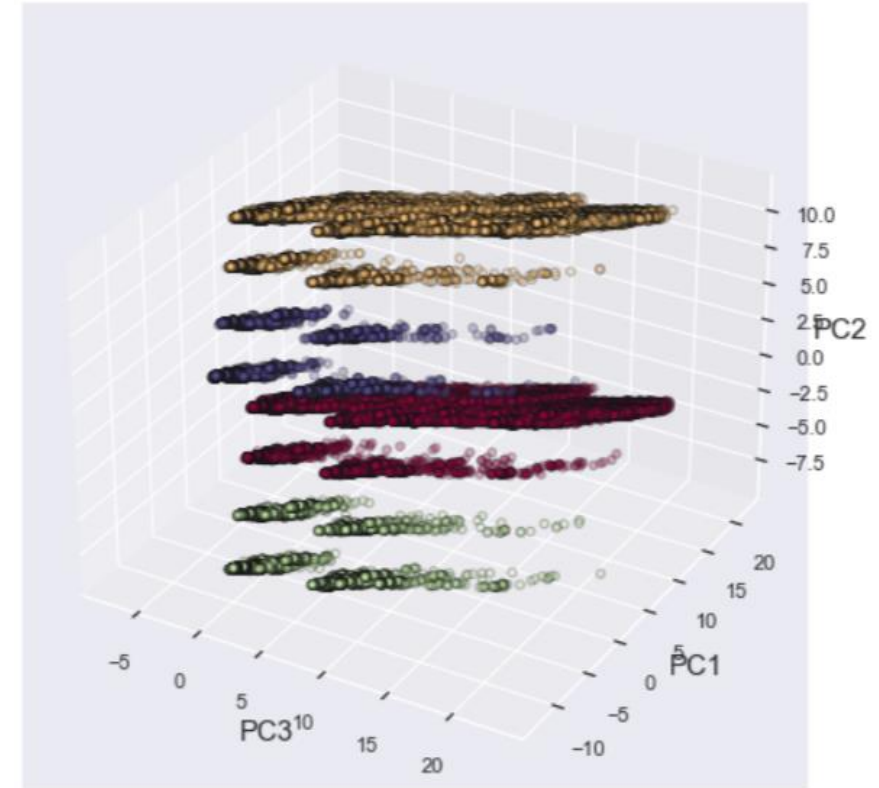
- Internship Batch: LISUM02
- Specialization: Data Science
- Group Name: Data Explorers
- GitHub link:
<https://github.com/joeanton719/Customer-Segmentation-Project>

Segmentation method

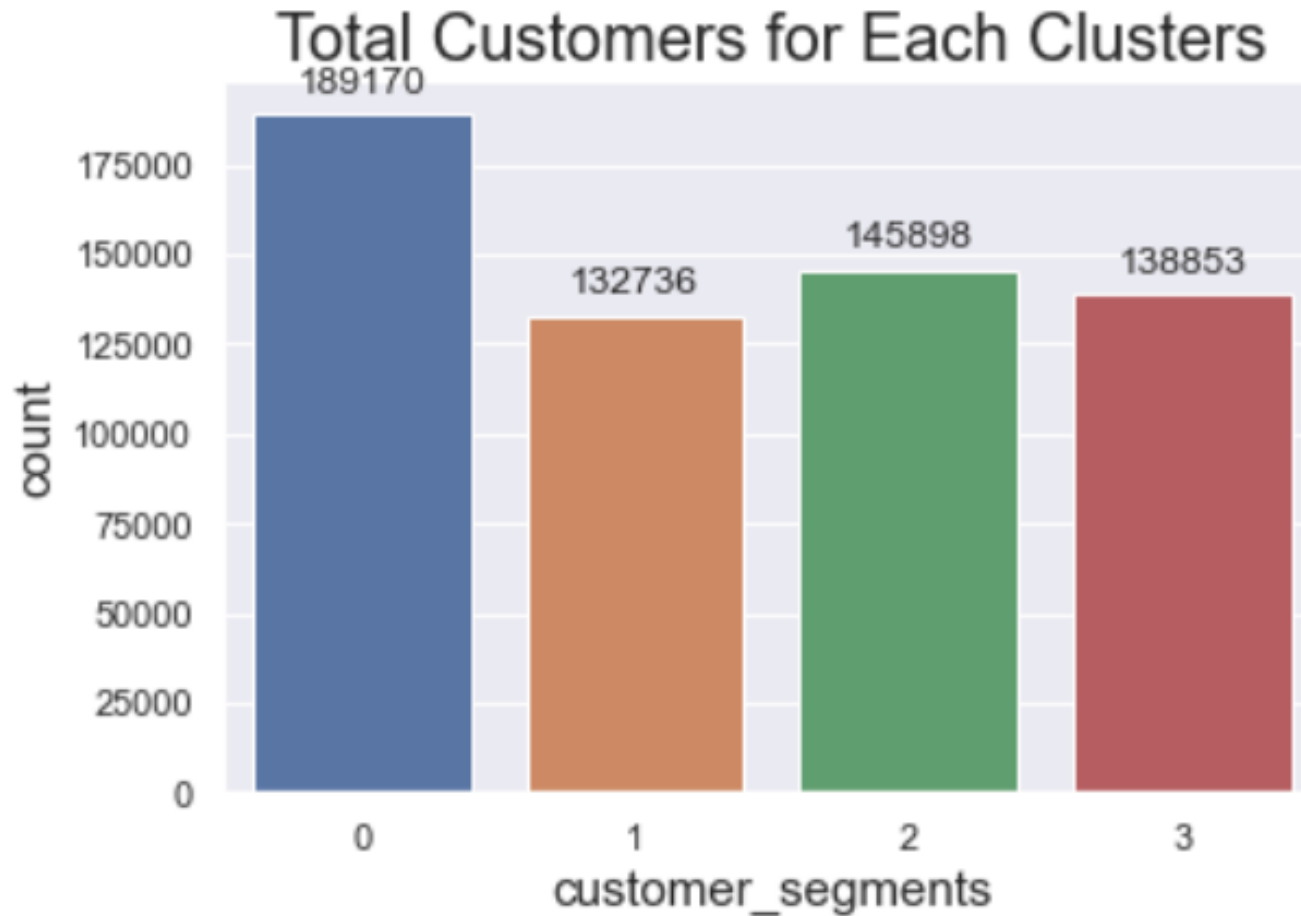
- We applied dimensionality reduction to the dataset in the form of PCA and try various clustering algorithms and compare their performances.
- From the results we obtained, although kmeans had slightly higher silhouette score, Gaussian Mixture model had a better Davies Bouldin score and had a better visualization compared to all other models. Hence we chose Gaussian Mixture model with 4 segments.



- The above plot shows well distinct clusters that does not seem to overlap with other clusters. In this presentation, you will see the analysis of the characteristics of the identified clusters.

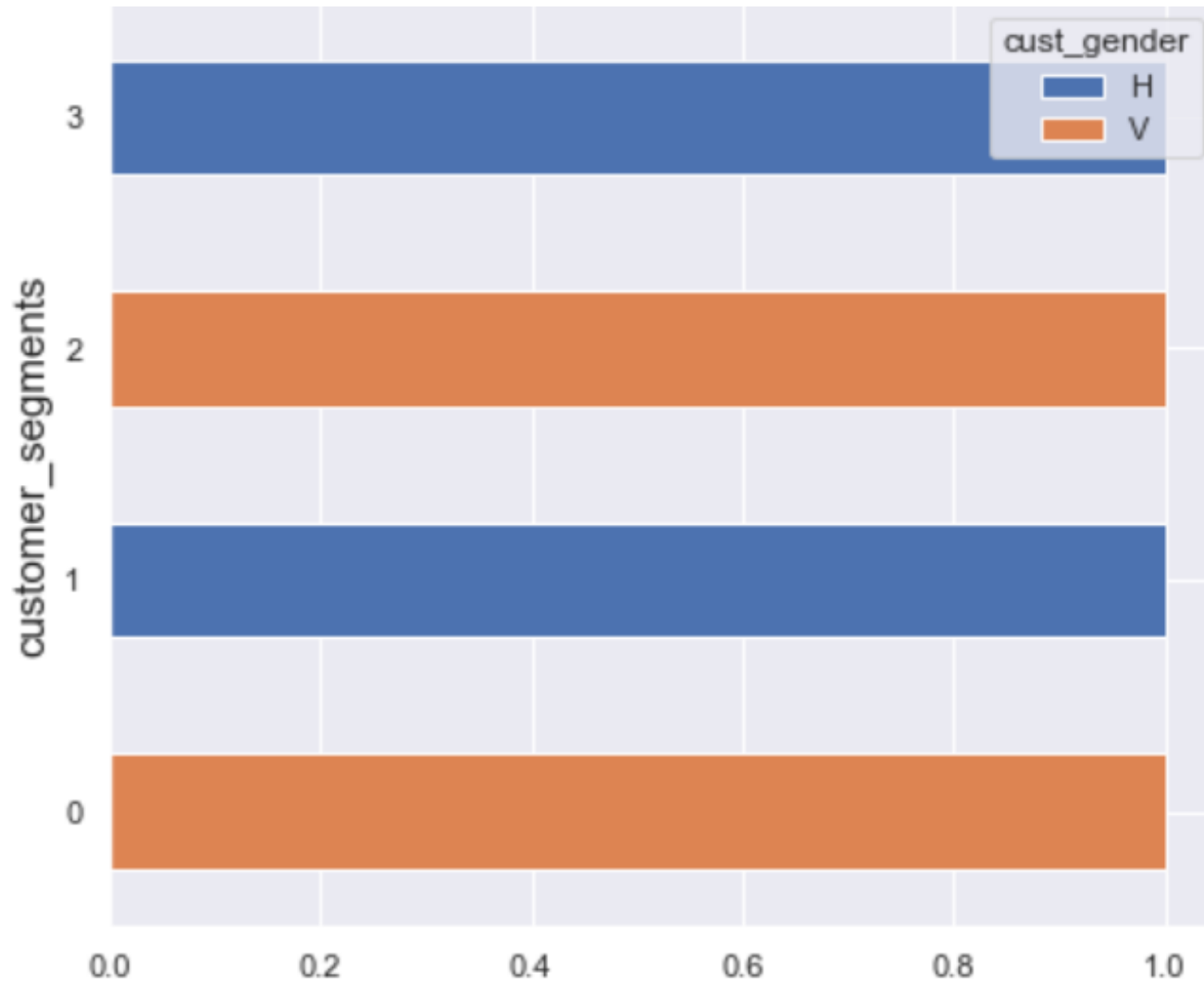


Total customers for each segment



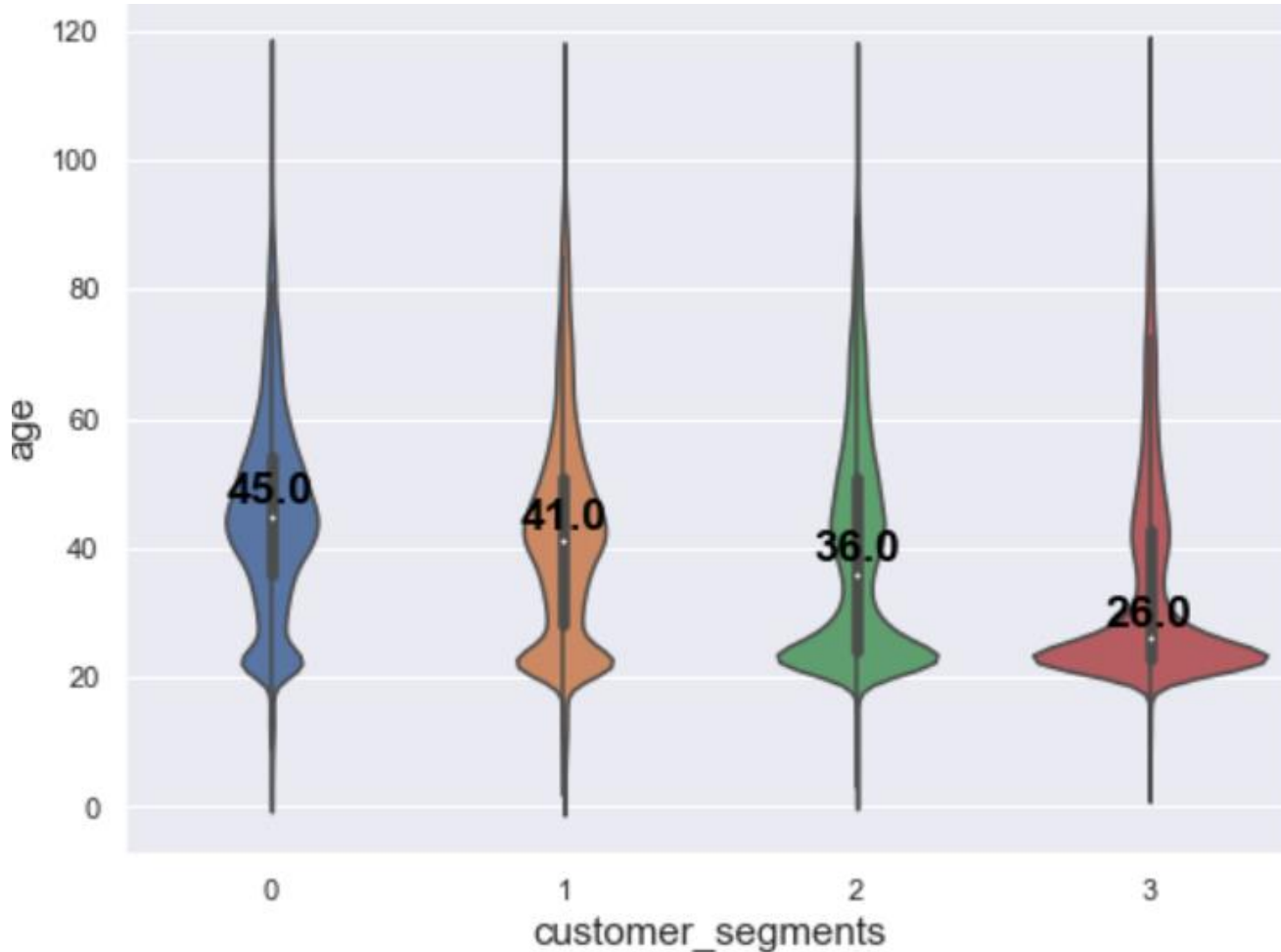
- Segment 0 has more customers than the others with number of 189.170 .
- The number of customers in other segments is between 132.000 and 150.000.

Proportion of gender per segment



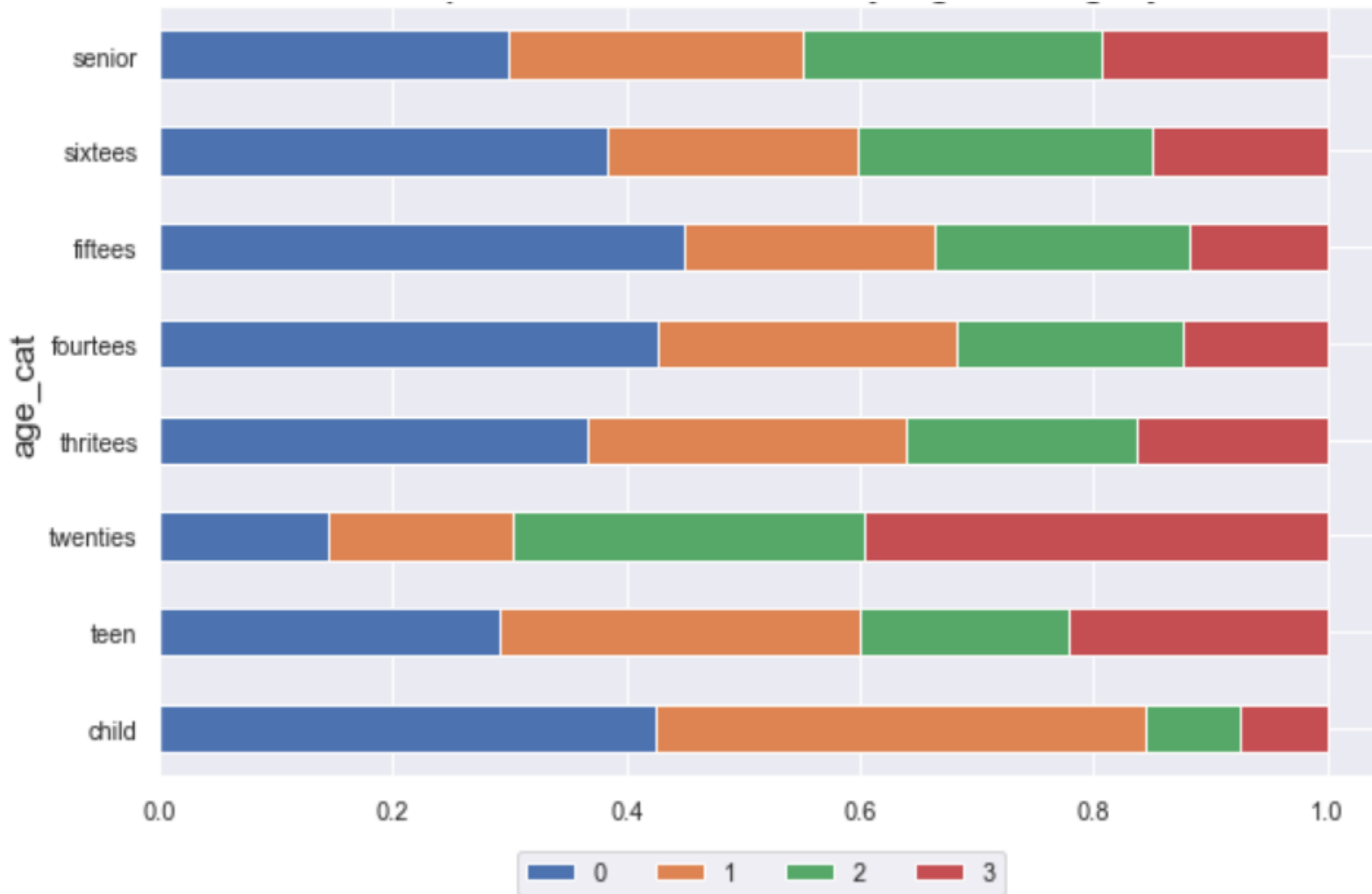
- As can be seen, segment 0 and 2 has only 'V' gender, while the segment 1 and 3 have only 'H' gender.

Age distribution for each segment



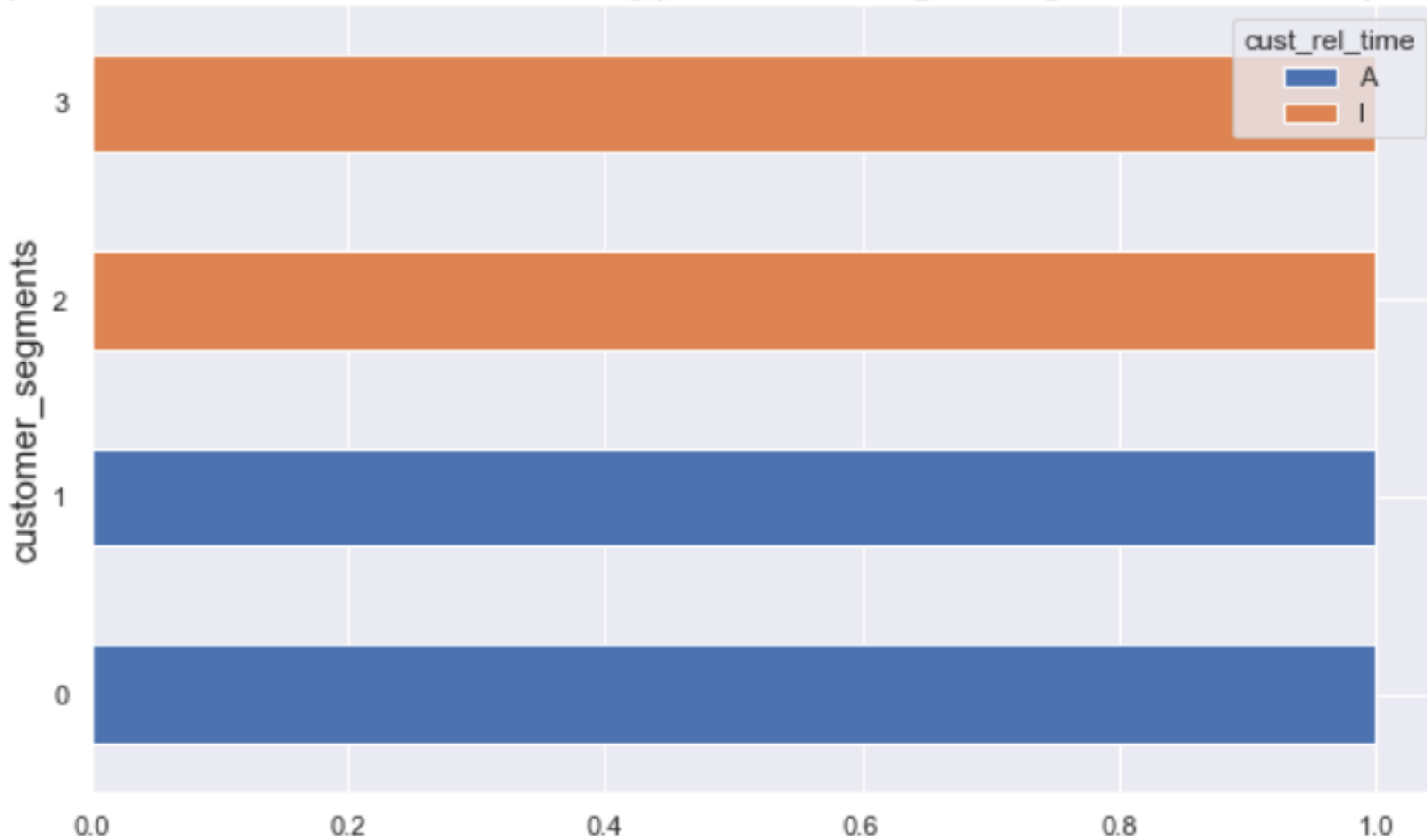
- Segment 3 has the youngest median age of 26, followed by segment 2 which has median age of 36.
- The average age of the segment 0 and 1 is higher with 45 and 41.

Proportion of customer segment by age categories



- Segment 0 has a lot of customers who are at their 50s.
- Lot of customers in segment 1 are in the children's category.
- The majority of customers in the segment 2 and 3 are in their 20s.

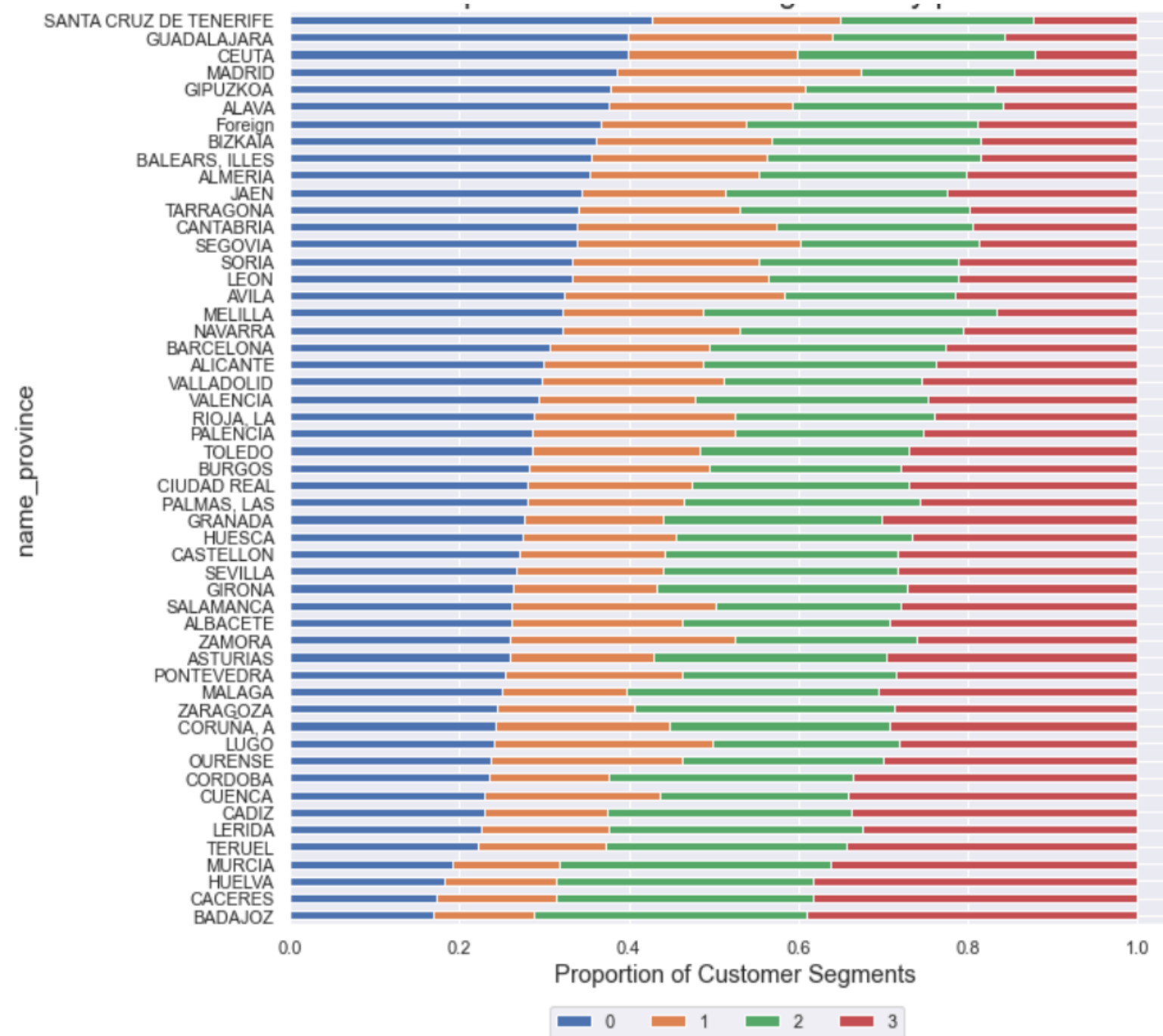
Customer relation type per segment



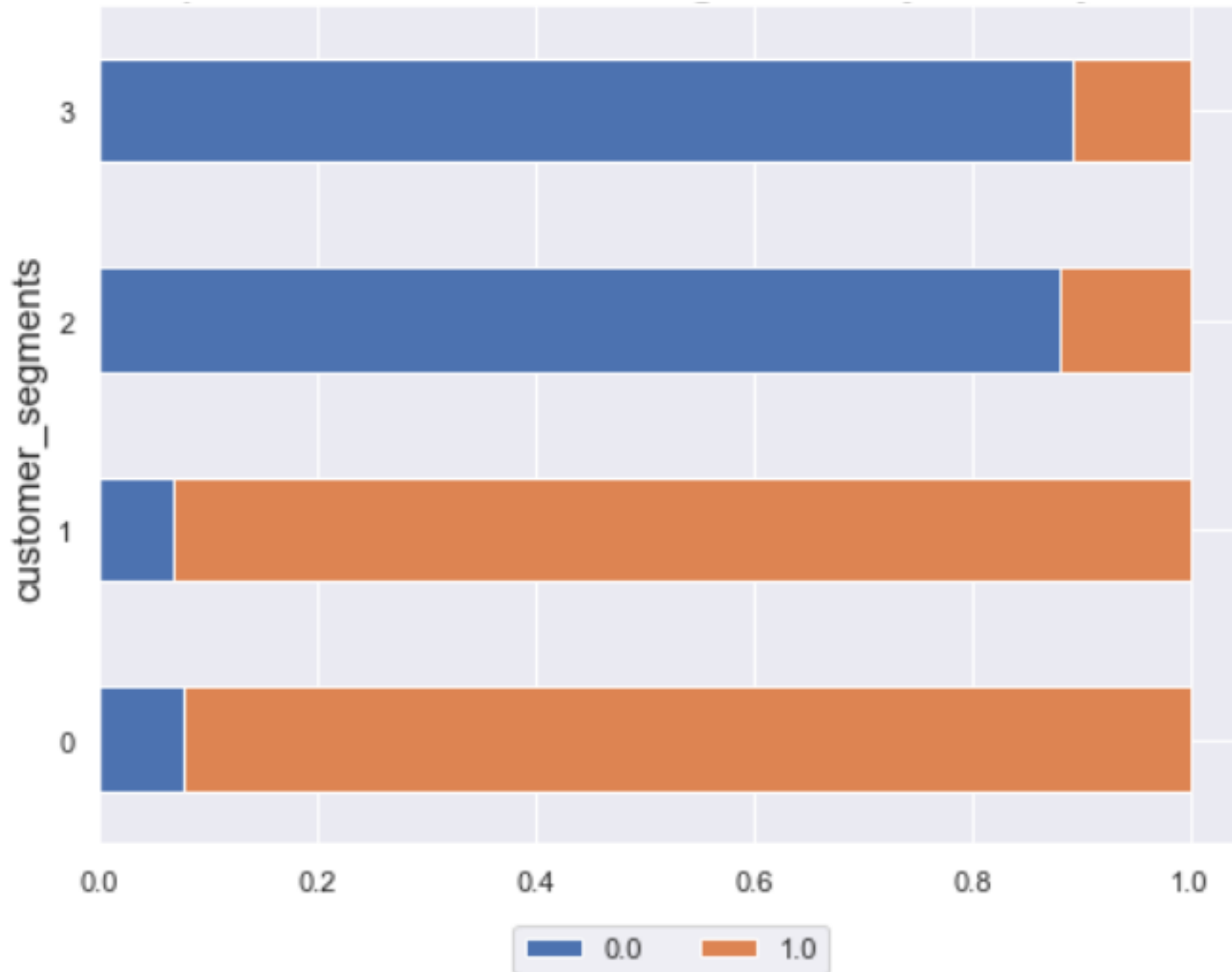
- Segment 1 and 0 consist of active concustomers only, while segment 2 and 3 are inactive customers.

Proportion of customer segments by province

- Segment 0 has lot of customers from Santa Cruz De Tenerife, whereas segment 1 has from Madrid, segment 2 from Melilla, segment 3 from Badajoz.

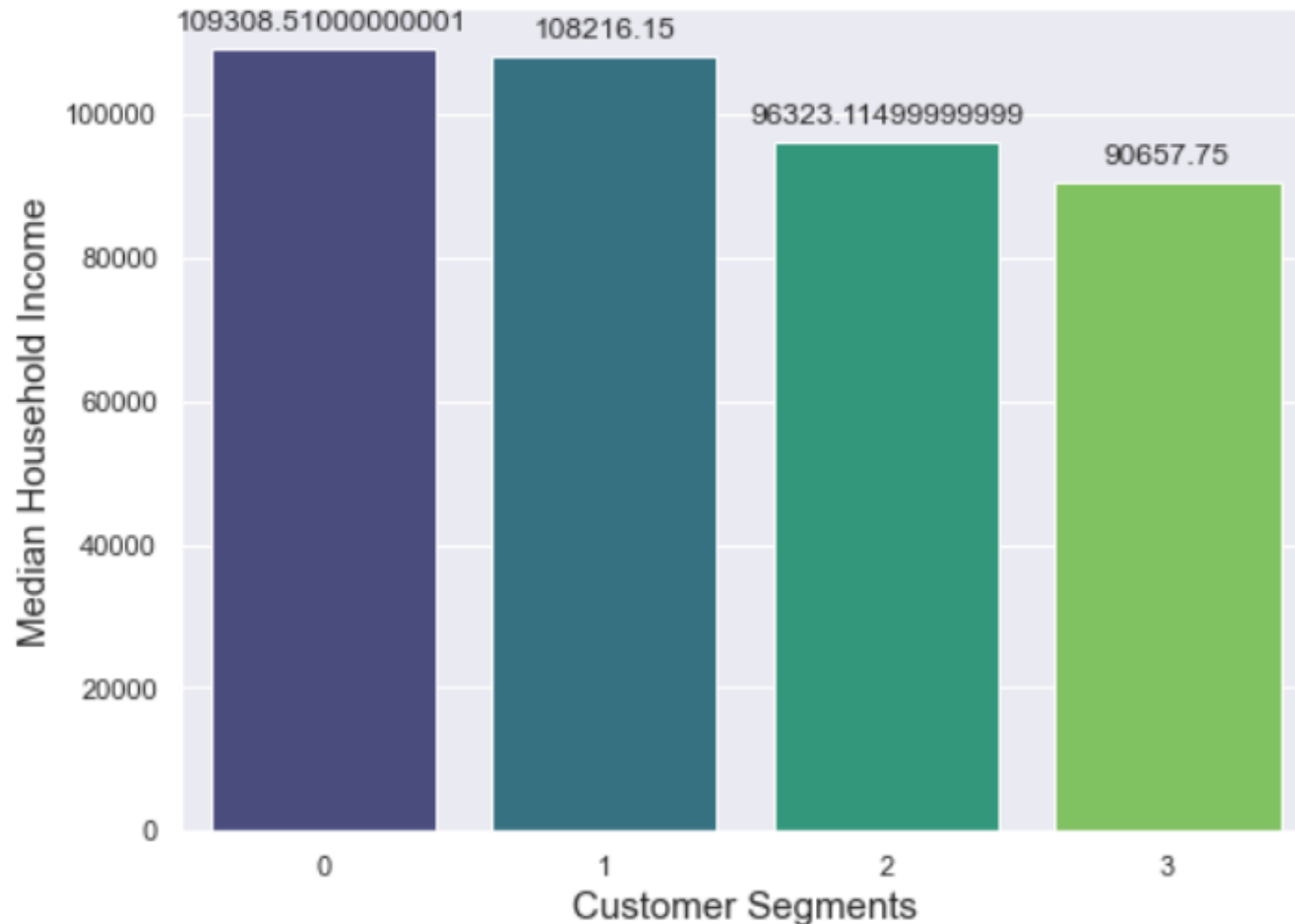


Proportion of customer segments by activity index



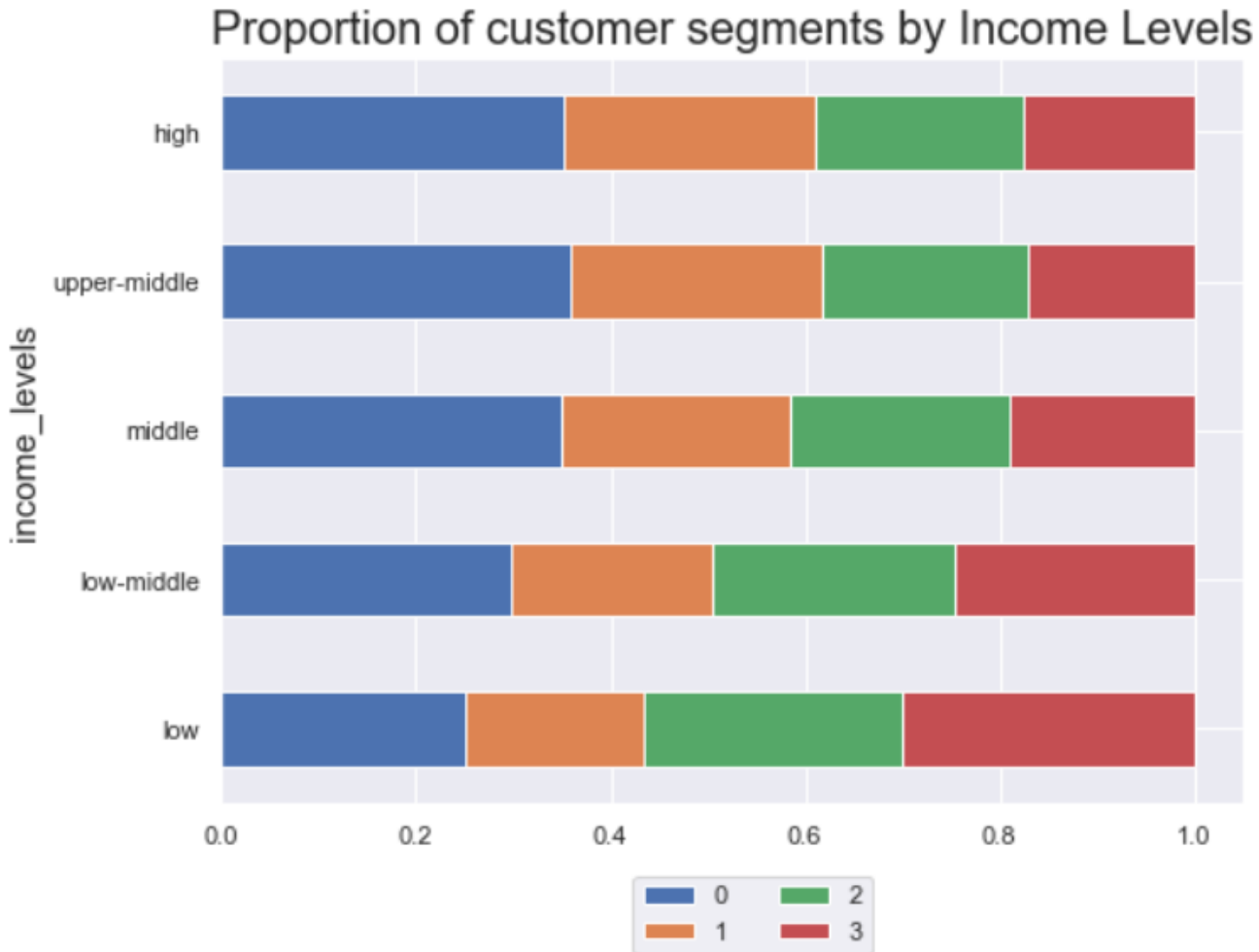
- While customers in segments 0 and 1 are active, the opposite is observed for other segments.

Household income distribution by segment



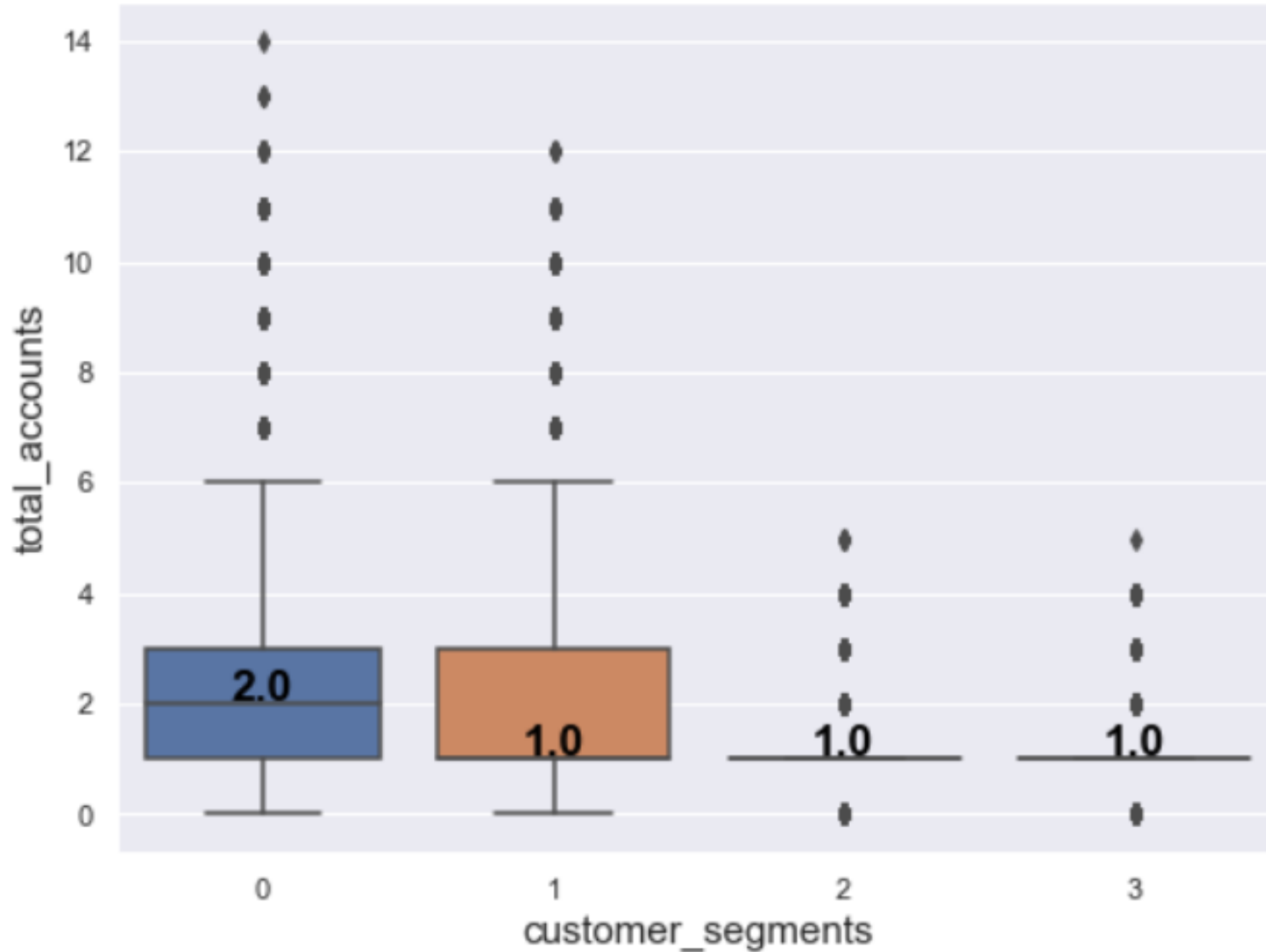
- It can be observed that while the 0th segment has the highest income, the 3rd segment has the lowest.

Proportion of segments by income levels



- The majority of segment 0 has middle and high income.
- The distribution of the 1st segments income is more regular.
- In segment 2, the majority have lower and middle incomes.
- The majority of segment 3 has low-income.

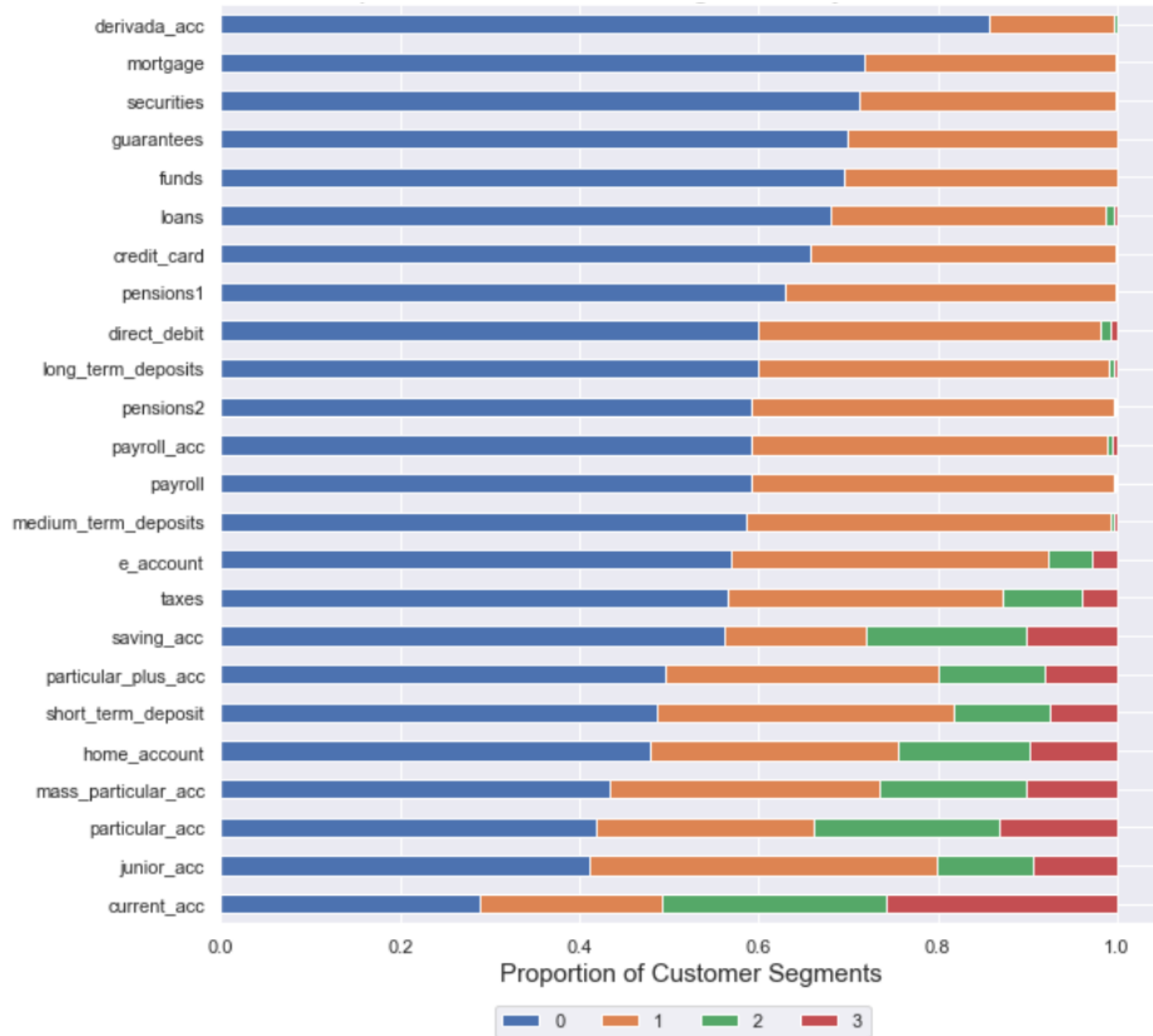
Number of product for each segment



- Customers from segment 0 and 1 in general tend to hold more accounts compared to customers from 2 and 3.

Proportion of customer segments by bank products

- Customer segments 0&1 holds accounts related to mortgages, funds, long term deposits, pensions, etc, which are mostly suitable to older customers.
- For products related to short term deposits, taxes, junior account, etc, we can see all customer segments owning these products.



Products owned by customer segments



- Customer 0 and 1 holds more number of accounts compared to other 2 customer segments.
- Customer Segments 0 and 1 holds accounts related to pensions, payrolls, long-term deposits that are usually opted by older customers compared to younger customers.

Summary

Customer Segment 0

- The highest proportion of Customers belongs to this segment.
- All Female Customers with a median age of 45 (senior customers) and are Active.
- Higher median salary compared to other customers and holds most accounts/products.

Customer Segment 1

- All Active Male customers with median age of 41 and also has a higher median salary compared to the other 2 customer segments. Also, hold almost the same number of accounts/products as Customer Segment 0.

Customer Segment 2

Younger Female customers with median age of 36, not very active, has a lower median salary compared to the first 2 customer segments and holds lower number of accounts/products.

Customer Segment 3

- Young male customers with the youngest median age of 26, not very active and has the lowest median salary compared to other customer segments and holds lowest number of accounts compared to other customer segments

Thank you!