|  |  |  |
| --- | --- | --- |
| X3 | X4 | X5 |
| mean |  |  |
| km\_clust\_3 | |  |
| 1 | 2 | 3 |
| 3291 | 1516 | 3829 |
| 1266.463 | 3721 | 1050 |
| 0.9636 | 0.9634 | 0.8091 |
| 2098.972 | 487.5 | 315.7 |
| 1192.355 | 307 | 217.9 |
| 906.9883 | 180.6 | 98.14 |
| 229.777 | 3972 | 472.3 |
| 0.9216 | 0.2676 | 0.2206 |
| 0.3776 | 0.1244 | 0.09058 |
| 0.7432 | 0.1734 | 0.1244 |
| 0.0423 | 0.4613 | 0.08555 |
| 0.7894 | 12.1 | 1.449 |
| 29.4476 | 6.914 | 3.676 |
| 4986.256 | 6031 | 3526 |
| 2085.691 | 2939 | 1068 |
| 689.5291 | 1500 | 518.4 |
| 0.2681 | 0.03571 | 0.1147 |
| 0.296 | 0.6415 | 0.3845 |
| 7.0413 | 3.52 | 4.748 |
| 160.3871 | 41.71 | 27.47 |
| 19.8825 | 321.8 | 42.04 |

For **3-cluster solution**, segment for 3rd cluster is greater than 40%.

1. For first cluster – segment- the customers use credit for purchase and their magnitude of purchasing the items is also more. These customers use credit card a lot. Their limit-ratio is less, it denotes that these customers are using credit card optimally. These customers are good prospects for the company.
2. For 2nd cluster, these customers use credit card mostly for cash withdrawal from ATM. Their payments and minimum payments are on the higher side. Their credit limit and Balance is more than average. So, A marketing strategy of giving the offers on purchase through credit card can be given to increase their purchase frequency.
3. For 3rd cluster, inferring from monthly\_Average\_purchase and monthly\_Cash\_Advance variables, we can infer that these customers use credit card very less and their purchase and withdrawal can be increased by giving them more marketing offers like cashback , reward points. These customers can be given lucky draw gifts for increasing their spending.

**Cluster – 4 solution**

|  |  |  |  |
| --- | --- | --- | --- |
| X6 | X7 | X8 | X9 |
| mean |  |  |  |
| km\_clust\_4 | |  |  |
| 1 | 2 | 3 | 4 |
| 3284 | 1101 | 2892 | 1359 |
| 947.9 | 2268 | 2765 | 162.6 |
| 0.97 | 0.981 | 0.9711 | 0.4823 |
| 811.3 | 4491 | 237.3 | 412 |
| 357.4 | 2935 | 163.9 | 253.9 |
| 454.3 | 1557 | 73.61 | 158.3 |
| 163.2 | 634.4 | 2357 | 393.9 |
| 0.7343 | 0.9531 | 0.1556 | 0.2743 |
| 0.1983 | 0.7163 | 0.07817 | 0.08274 |
| 0.5727 | 0.7382 | 0.08453 | 0.1819 |
| 0.03245 | 0.08485 | 0.3144 | 0.04203 |
| 0.5502 | 2.055 | 7.379 | 0.7954 |
| 14.46 | 53.36 | 3.184 | 4.435 |
| 3832 | 7427 | 4493 | 3897 |
| 1021 | 4324 | 1833 | 1471 |
| 562.7 | 997.5 | 1167 | 153.6 |
| 0.1914 | 0.2965 | 0.02296 | 0.2607 |
| 0.3228 | 0.3226 | 0.6663 | 0.05656 |
| 3.524 | 11.44 | 2.59 | 11.06 |
| 70.24 | 324.7 | 20.76 | 35.37 |
| 14.36 | 49.27 | 195.8 | 34.14 |

For 4-cluster solution, segment sizes are correct and within accepted range. First cluster of 3-cluster and second cluster of 4-cluster are same. 3rd of 3-cluster solution and 4th of 4-cluster are same. First cluster is a new cluster of customers. These customers usually use credit card, when they have requirement. These customers have high instalment- purchase frequency.

**Cluster – 5 solution**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| X10 | X11 | X12 | X13 | X14 |
| mean |  |  |  |  |
| km\_clust\_5 | |  |  |  |
| 1 | 2 | 3 | 4 | 5 |
| 2935 | 720 | 1657 | 1090 | 2234 |
| 2754 | 2719.734 | 246.4 | 1220 | 916.7 |
| 0.9734 | 0.9826 | 0.5704 | 0.9711 | 0.9675 |
| 238.7 | 5604.666 | 378.5 | 1471 | 845.7 |
| 162.8 | 3591.456 | 238.8 | 1239 | 185.4 |
| 76.14 | 2014.044 | 139.9 | 232.1 | 660.7 |
| 2286 | 797.581 | 355.8 | 219.4 | 211.5 |
| 0.1537 | 0.9645 | 0.2443 | 0.751 | 0.857 |
| 0.07526 | 0.7122 | 0.07757 | 0.6758 | 0.08032 |
| 0.08549 | 0.8264 | 0.158 | 0.2524 | 0.8068 |
| 0.3052 | 0.0953 | 0.04153 | 0.04399 | 0.03809 |
| 7.177 | 2.5181 | 0.755 | 0.7294 | 0.701 |
| 3.116 | 63.6046 | 3.899 | 19.47 | 17.39 |
| 4427 | 8032.292 | 3965 | 5187 | 3604 |
| 1805 | 5388.797 | 1311 | 1489 | 1091 |
| 1168 | 1191.742 | 181.1 | 486.7 | 632.3 |
| 0.0216 | 0.2925 | 0.2201 | 0.2047 | 0.2301 |
| 0.6762 | 0.3444 | 0.07708 | 0.3185 | 0.3184 |
| 2.5 | 12.9031 | 9.291 | 5.622 | 3.822 |
| 20.78 | 389.0478 | 32.62 | 126.5 | 73.06 |
| 189.5 | 60.4239 | 31.22 | 19 | 18.8 |

4th cluster of 5-cluster solution is a new one. These are good customers, have low minimum payment.

Conclusion – 4th or 5th cluster solution covers all segments of customers.