

# Perceptual and Preference Mapping

```
options(repos = 'http://cran.rstudio.com/')  
  
install.packages("data.table")
```

The downloaded binary packages are in  
/var/folders/\_f/jxf6gqq91bg2n4kxz46lww200000gn/T//Rtmplo4RHy/downloaded\_packages

```
library(data.table)  
set.seed(1)
```

```
per <- read.csv(file = "../data/c5perceptions.csv")  
pref <- read.csv(file = "../data/c5preferences.csv")
```

```
head(pref)
```

	Respondents	Chestnut.Ridge	Retailer.A	Retailer.B	Retailer.C	Retailer.D
1	1	1	0	0	0	3
2	2	9	7	9	5	5
3	3	3	5	6	0	5
4	4	5	4	5	4	2
5	5	4	3	6	3	10
6	6	4	0	0	0	3

  

	Retailer.E	Retailer.F
1	2	2
2	6	3
3	5	2
4	3	2
5	7	1
6	2	1

```
head(per)
```

	Brand	Price	Convenience	Customer.Service	In.Store.Experience
1	Chestnut Ridge	5.0	6.9	4.2	3.9
2	Retailer A	6.0	3.8	4.9	3.7
3	Retailer B	5.9	4.4	6.2	3.6
4	Retailer C	6.6	3.7	6.5	3.6
5	Retailer D	3.6	0.9	4.1	4.9
6	Retailer E	2.0	6.9	3.3	4.0

  

	Product.Variety	Product.Quality	Location
1	5.1	3.1	2.6
2	3.8	3.8	5.5
3	1.1	6.8	6.1
4	3.6	6.7	4.4
5	4.1	4.9	1.1
6	3.9	2.8	3.6

```
# pca of perceptions
```

```
pca <- prcomp(per[,2:length(per)], retx=TRUE, scale=TRUE)
```

```
# perceptual map - attribute factors and data file
```

```
attribute <- as.data.table(colnames(per[,2:length(per)])); setnames(attribute, 1, "Attribute")
factor1 <- pca$rotation[,1]*pca$sdev[1]; factor2 <- pca$rotation[,2]*pca$sdev[2]; path <-
pca_factors <- subset(cbind(attribute, factor1, factor2, path), select = c(Attribute, factor1, factor2, path))
pca_origin <- cbind(attribute, factor1 = rep(0, nrow(attribute)), factor2 = rep(0, nrow(attribute)))
pca_attributes <- rbind(pca_factors, pca_origin)
```

```
write.csv(pca_attributes, file = "../data/c5perceptions_attrubutes.csv", row.names = FALSE)
```

```
# perceptual map - brand factors and data file
```

```
score1 <- (pca$x[,1]/apply(abs(pca$x), 2, max)[1])
score2 <- (pca$x[,2]/apply(abs(pca$x), 2, max)[2])
pca_scores <- subset(cbind(per, score1, score2), select = c(Brand, score1, score2))
```

```
write.csv(pca_scores, file = "../data/c5perceptions_scores.csv", row.names = FALSE)
```

```
# preference map - respondent preferences
```

```
pref1 <- data.matrix(pref[,2:ncol(pref)])%*%(cbind(score1, score2))
pref1[,1] <- (pref1[,1]/max(abs(pref1[,1]))); pref1[,2] <- (pref1[,2]/max(abs(pref1[,2])))
```

```
preferences <- subset(cbind(pref, pref1, preference = rep(1,nrow(pref))), select = c(Respo  
write.csv(preferences, file = "../data/c5preference_scores.csv", row.names = FALSE)
```