

Douwe_egberts_Survey

Michiel van Eldik

10/6/2020

```
library(qualtRics)
library(psych)
library(dplyr)
library(epiDisplay)
library(fastDummies)
library(stringr)
```

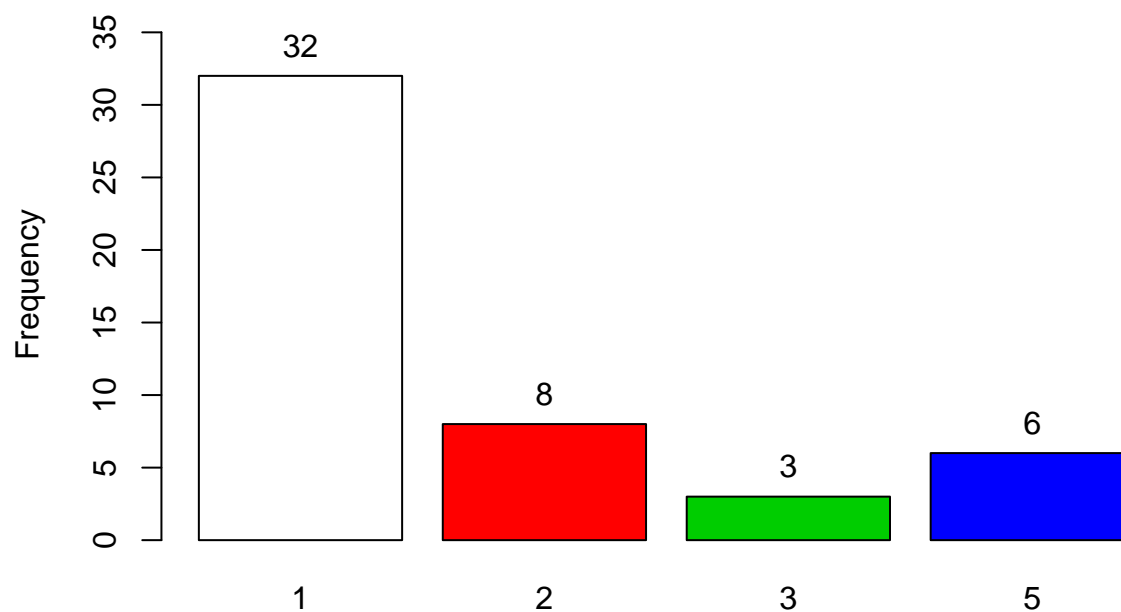
```
de.df <- read_survey("DE_1.csv")
```

“How Frequently do you drink a cup of coffee on average?”

Frequency table

```
tab1(de.df$Q27, cum.percent=TRUE, main="Frequency of drinking coffee")
```

Frequency of drinking coffee

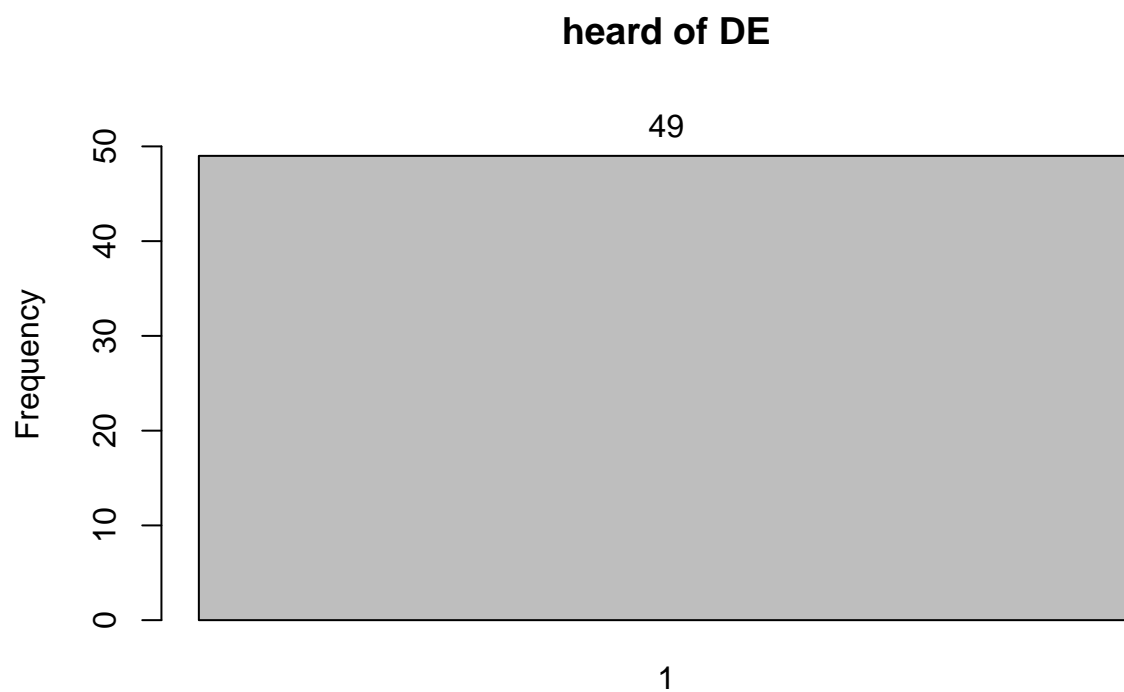


```
## de.df$Q27 :
##      Frequency Percent Cum. percent
## 1          32     65.3         65.3
## 2           8     16.3         81.6
## 3           3      6.1         87.8
## 5           6     12.2        100.0
## Total        49    100.0        100.0
```

knowledge of the brand

“Have you heard of the brand Douwe Egberts?”

```
tab1(de.df$Q6, sort.group="decreasing", cum.percent=TRUE, main="heard of DE")
```



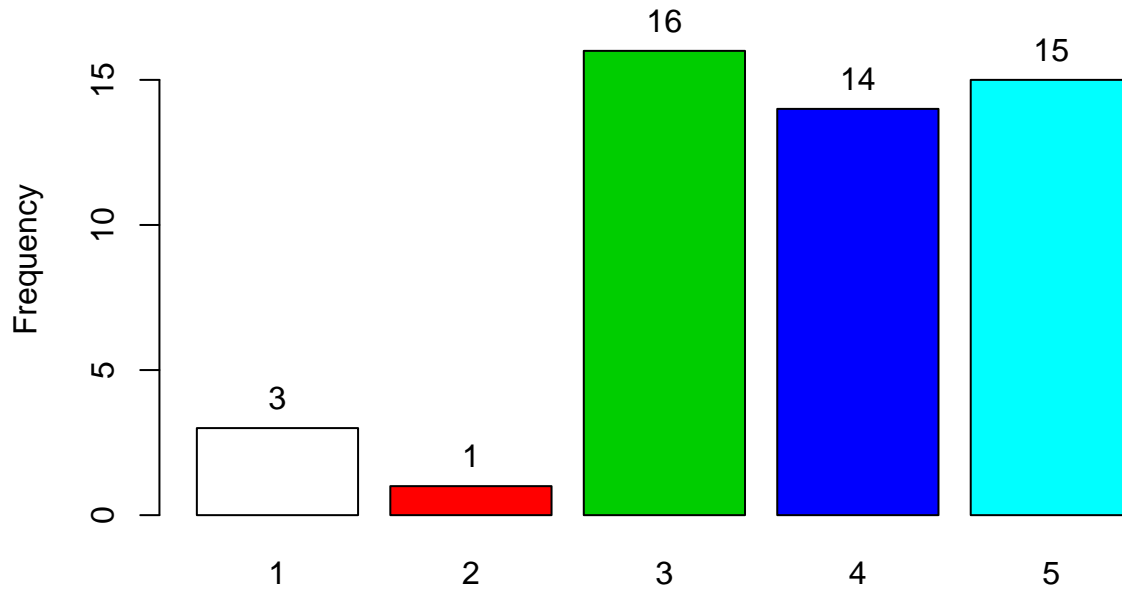
```
## de.df$Q6 :  
##           Frequency Percent Cum. percent  
## 1             49      100      100  
##   Total             49      100      100
```

“I have an opinion about the brand Douwe Egberts.”

Frequency table

```
tab1(de.df$Q7, cum.percent=TRUE, main="I have an opinion on DE")
```

I have an opinion on DE



```
## de.df$Q7 :  
##           Frequency Percent Cum. percent  
## 1              3         6.1          6.1  
## 2              1         2.0          8.2  
## 3             16        32.7         40.8  
## 4             14        28.6         69.4  
## 5             15        30.6        100.0  
## Total          49       100.0        100.0
```

Mean

```
mean(de.df$Q7)
```

```
## [1] 3.755102
```

Standard Deviation

```
sd(de.df$Q7)
```

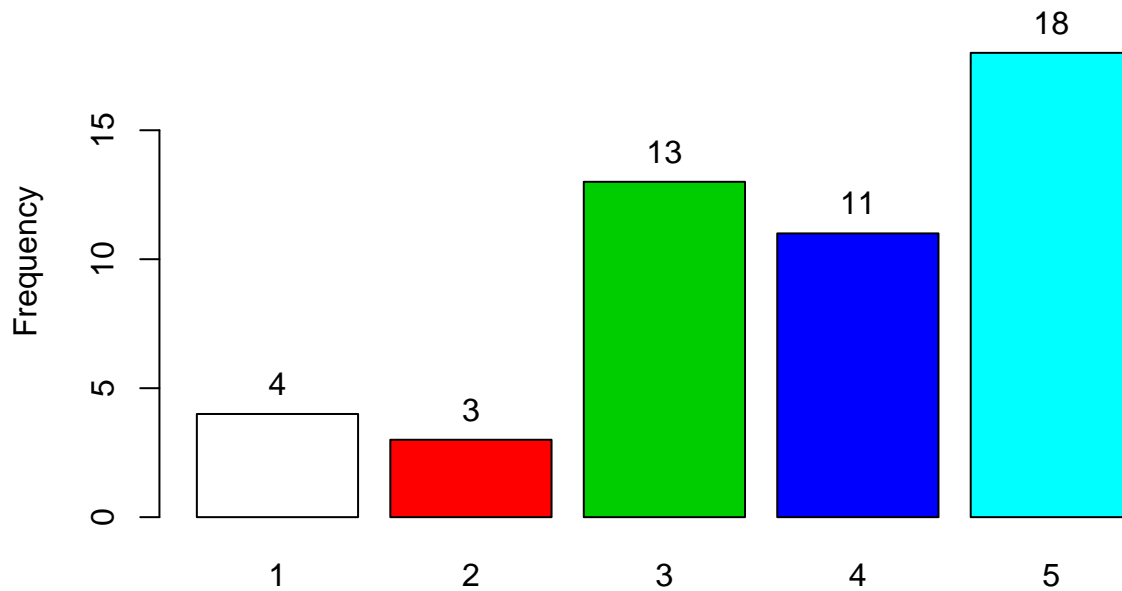
```
## [1] 1.109253
```

“I am well aware of the brand Douwe Egberts”

Frequency table

```
tab1(de.df$Q8, cum.percent=TRUE, main="I am well aware of DE")
```

I am well aware of DE



```
## de.df$Q8 :  
##           Frequency Percent Cum. percent  
## 1              4      8.2         8.2  
## 2              3      6.1        14.3  
## 3             13     26.5        40.8  
## 4             11     22.4        63.3  
## 5             18     36.7       100.0  
##   Total         49    100.0       100.0
```

Mean

```
mean(de.df$Q8)
```

```
## [1] 3.734694
```

Standard Deviation

```
sd(de.df$Q8)
```

```
## [1] 1.254583
```

Internal reliability

```
sc_awareness <- data.frame(scale(de.df$Q8), scale(de.df$Q7))  
cor.test(de.df$Q8, de.df$Q7, method="spearman")
```

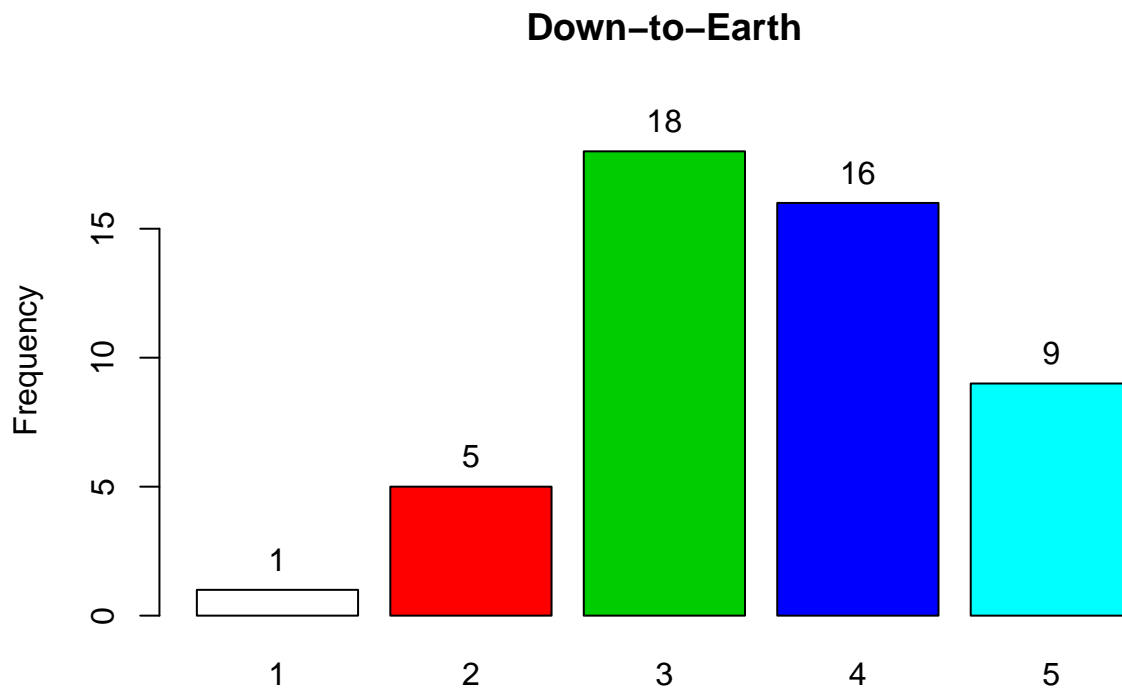
```
## Warning in cor.test.default(de.df$Q8, de.df$Q7, method = "spearman"): Cannot
## compute exact p-value with ties

##
## Spearman's rank correlation rho
##
## data: de.df$Q8 and de.df$Q7
## S = 9422.5, p-value = 0.0001318
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
## rho
## 0.519261
```

Brand Personality Associations Douwe Egberts

Dimension 1, Item 1: Sincerity

```
tab1(de.df$Q12_1, cum.percent=TRUE, main="Down-to-Earth")
```



```
## de.df$Q12_1 :
##      Frequency Percent Cum. percent
## 1           1      2.0          2.0
## 2           5     10.2         12.2
## 3          18     36.7         49.0
## 4          16     32.7         81.6
```

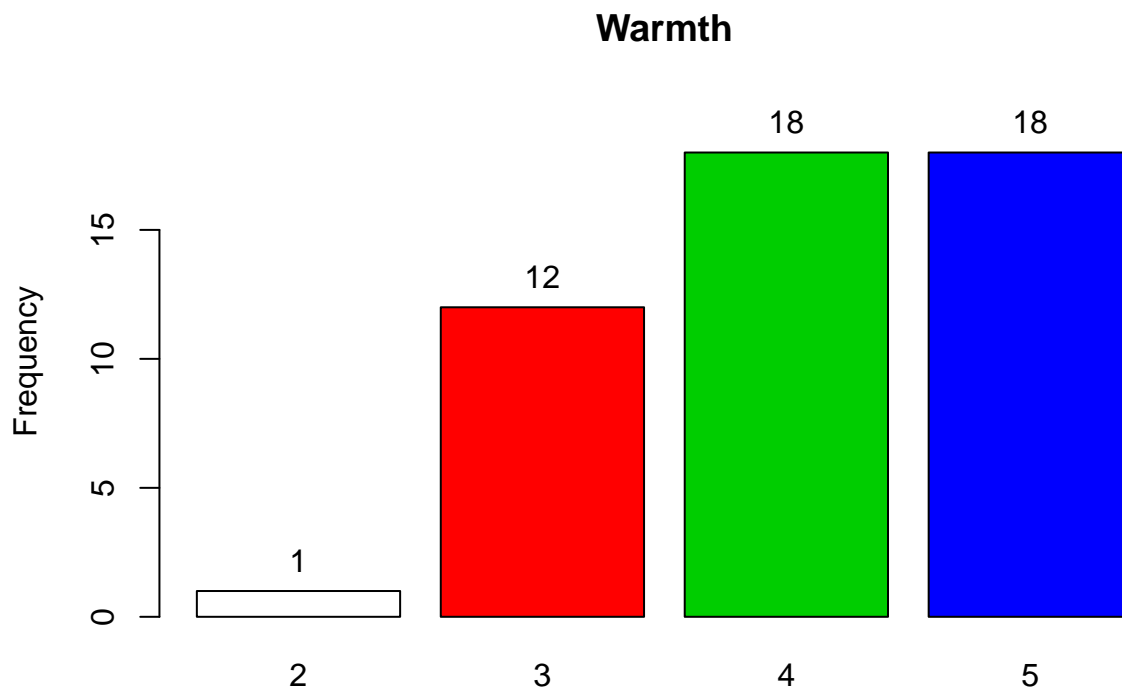
```
## 5          9    18.4    100.0
## Total    49   100.0    100.0
```

```
mean(de.df$Q24)
```

```
## [1] 3.040816
```

Dimension 1, Item 2: Warmth

```
tab1(de.df$Q12_2, cum.percent=TRUE, main="Warmth")
```



```
## de.df$Q12_2 :
##      Frequency Percent Cum. percent
## 2           1      2.0         2.0
## 3          12     24.5        26.5
## 4          18     36.7        63.3
## 5          18     36.7       100.0
## Total       49    100.0       100.0
```

Dimension 1 Internal Reliability

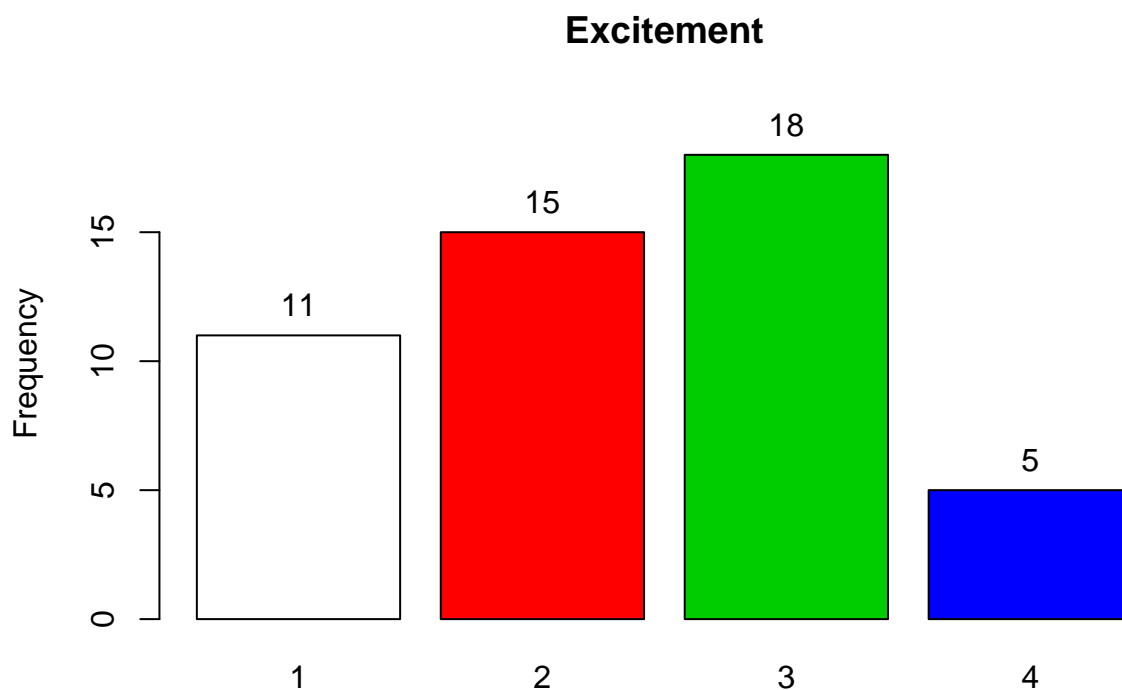
```
sc_d1 <- data.frame(scale(de.df$Q12_1), scale(de.df$Q12_2))
cor.test(de.df$Q12_1, de.df$Q12_2, method="spearman")
```

```
## Warning in cor.test.default(de.df$Q12_1, de.df$Q12_2, method = "spearman"):
## Cannot compute exact p-value with ties
```

```
##
## Spearman's rank correlation rho
##
## data: de.df$Q12_1 and de.df$Q12_2
## S = 15010, p-value = 0.1053
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
##      rho
## 0.2341669
```

Dimension 2, Item 1: Excitement

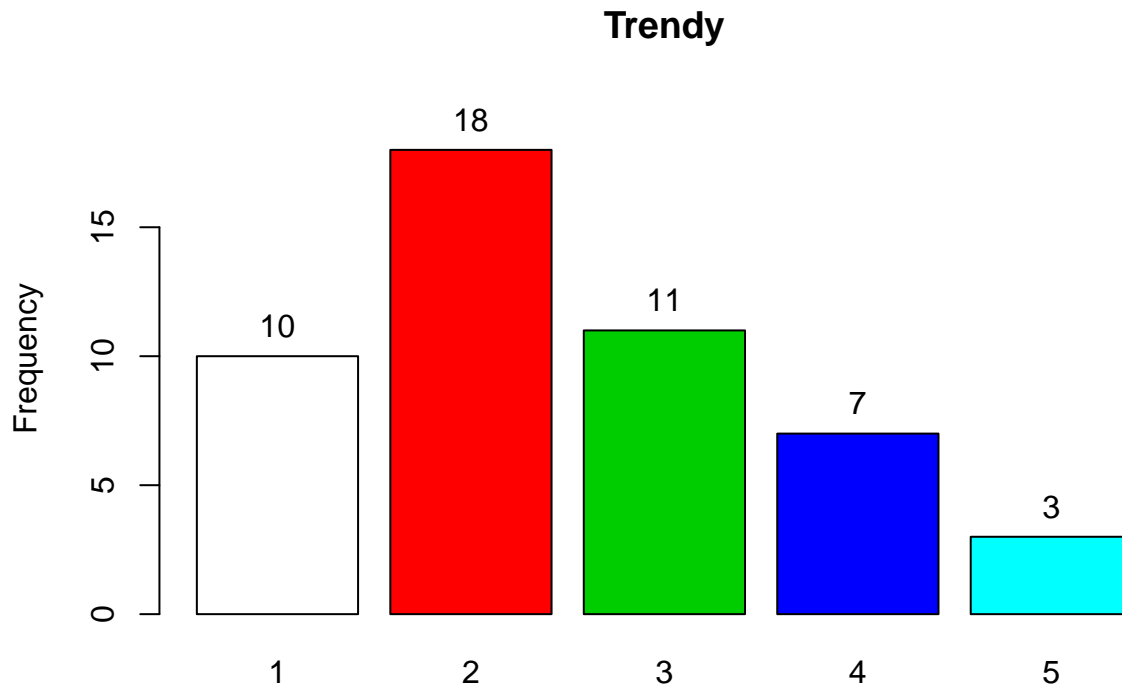
```
tab1(de.df$Q12_3, cum.percent=TRUE, main="Excitement")
```



```
## de.df$Q12_3 :
##      Frequency Percent Cum. percent
## 1           11     22.4         22.4
## 2           15     30.6         53.1
## 3           18     36.7         89.8
## 4            5     10.2        100.0
## Total         49    100.0        100.0
```

Dimension 2, Item 2: Trendy

```
tab1(de.df$Q12_4, cum.percent=TRUE, main="Trendy")
```

```
## de.df$Q12_4 :
##           Frequency Percent Cum. percent
## 1             10      20.4         20.4
## 2             18      36.7         57.1
## 3             11      22.4         79.6
## 4              7      14.3         93.9
## 5              3       6.1        100.0
##   Total         49     100.0        100.0
```

Dimension 2 Internal Reliability

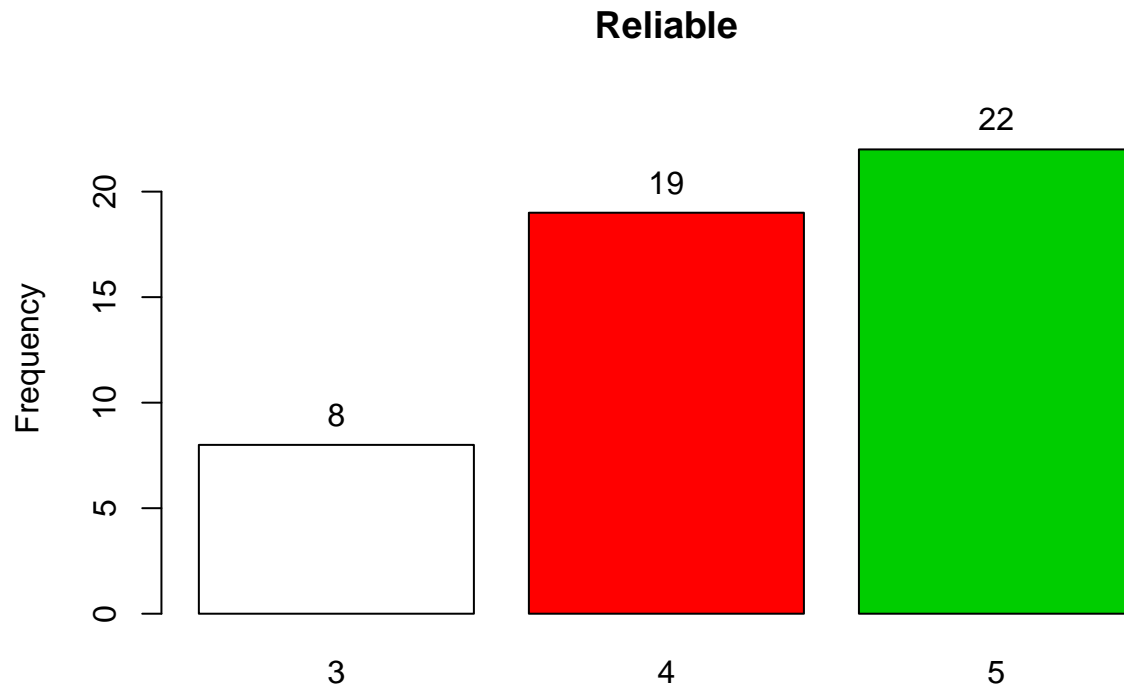
```
sc_d1 <- data.frame(scale(de.df$Q12_3), scale(de.df$Q12_4))
cor.test(de.df$Q12_3, de.df$Q12_4, method="spearman")
```

```
## Warning in cor.test.default(de.df$Q12_3, de.df$Q12_4, method = "spearman"):
## Cannot compute exact p-value with ties
```

```
##
## Spearman's rank correlation rho
##
## data: de.df$Q12_3 and de.df$Q12_4
## S = 6301.6, p-value = 8.45e-08
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
##      rho
## 0.6784904
```

Dimension 3, Item 1: Competence

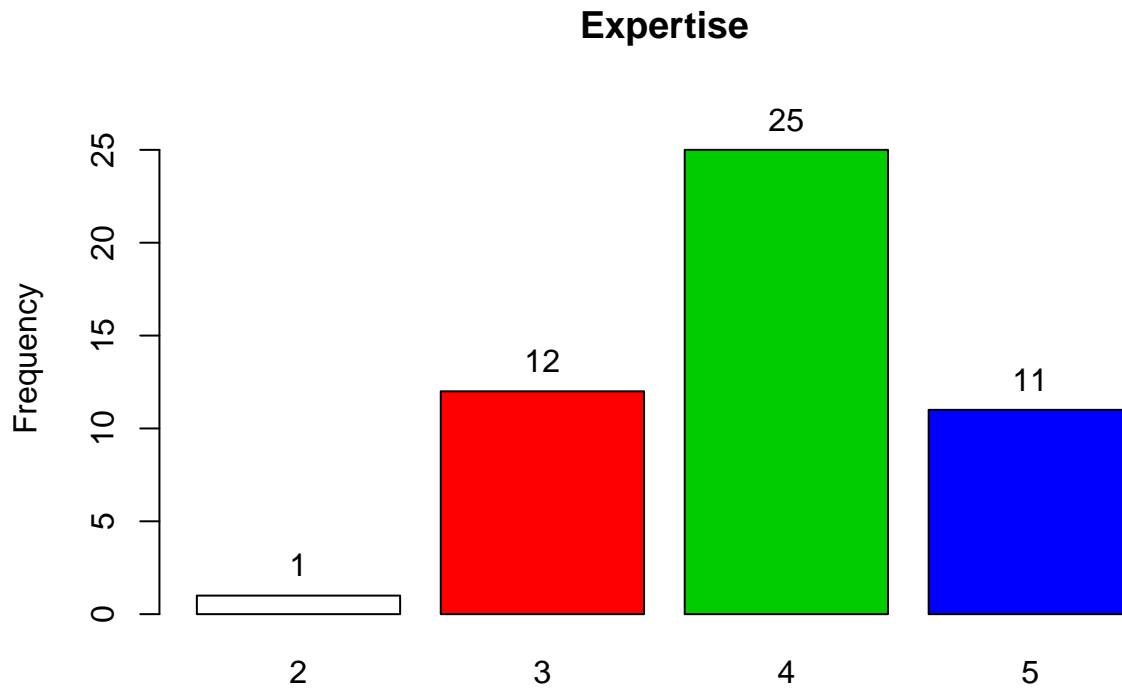
```
tab1(de.df$Q12_5, cum.percent=TRUE, main="Reliable")
```



```
## de.df$Q12_5 :  
##           Frequency Percent Cum. percent  
## 3              8      16.3         16.3  
## 4             19      38.8         55.1  
## 5             22      44.9        100.0  
## Total          49     100.0        100.0
```

Dimension 3, Item 2: Expertise

```
tab1(de.df$Q12_6, cum.percent=TRUE, main="Expertise")
```



```
## de.df$Q12_6 :
##      Frequency Percent Cum. percent
## 2             1      2.0          2.0
## 3            12     24.5         26.5
## 4            25     51.0         77.6
## 5            11     22.4        100.0
## Total         49    100.0        100.0
```

Dimension 3, Internal Reliability

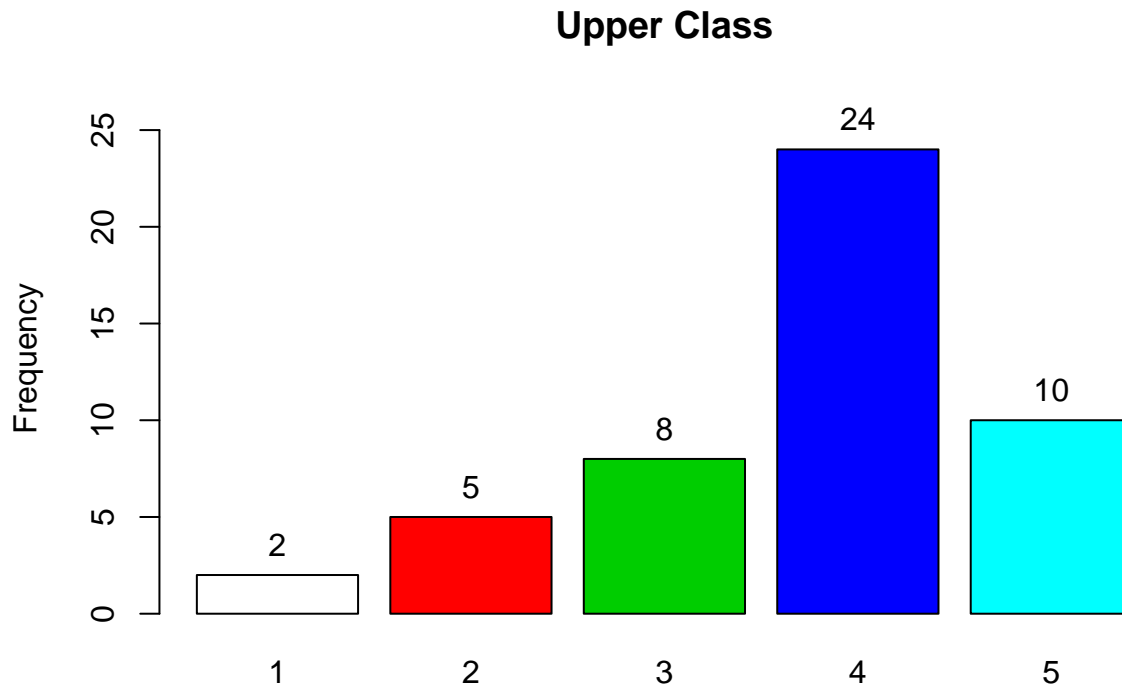
```
sc_d1 <- data.frame(scale(de.df$Q12_5), scale(de.df$Q12_6))
cor.test(de.df$Q12_5, de.df$Q12_6, method="spearman")
```

```
## Warning in cor.test.default(de.df$Q12_5, de.df$Q12_6, method = "spearman"):
## Cannot compute exact p-value with ties

##
## Spearman's rank correlation rho
##
## data:  de.df$Q12_5 and de.df$Q12_6
## S = 11872, p-value = 0.00506
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
##      rho
## 0.3942739
```

Dimension 4, Item 1: Sophistication

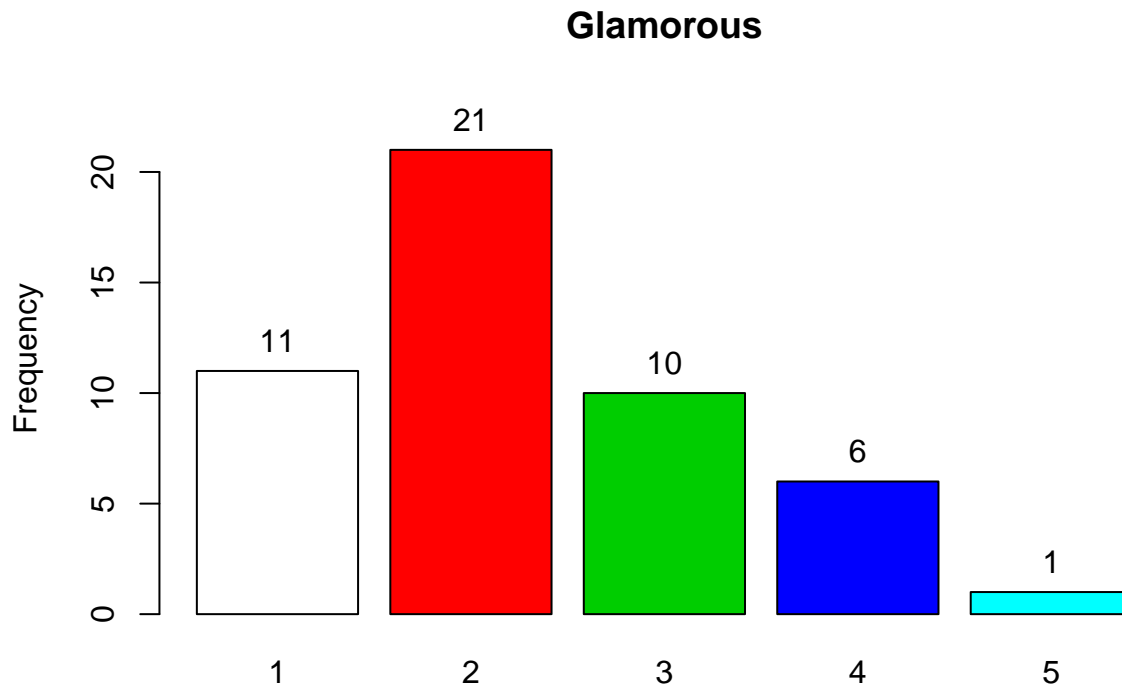
```
tab1(de.df$Q12_7, cum.percent=TRUE, main="Upper Class")
```



```
## de.df$Q12_7 :  
##           Frequency Percent Cum. percent  
## 1                2      4.1          4.1  
## 2                5     10.2         14.3  
## 3                8     16.3         30.6  
## 4               24     49.0         79.6  
## 5               10     20.4        100.0  
## Total           49    100.0        100.0
```

Dimension 4, Item 2: Glamorous

```
tab1(de.df$Q12_8, cum.percent=TRUE, main="Glamorous")
```



```
## de.df$Q12_8 :
##           Frequency Percent Cum. percent
## 1             11      22.4         22.4
## 2             21      42.9         65.3
## 3             10      20.4         85.7
## 4              6      12.2         98.0
## 5              1       2.0        100.0
## Total          49     100.0        100.0

sc_d1 <- data.frame(scale(de.df$Q12_7), scale(de.df$Q12_8))
cor.test(de.df$Q12_7, de.df$Q12_8, method="spearman")

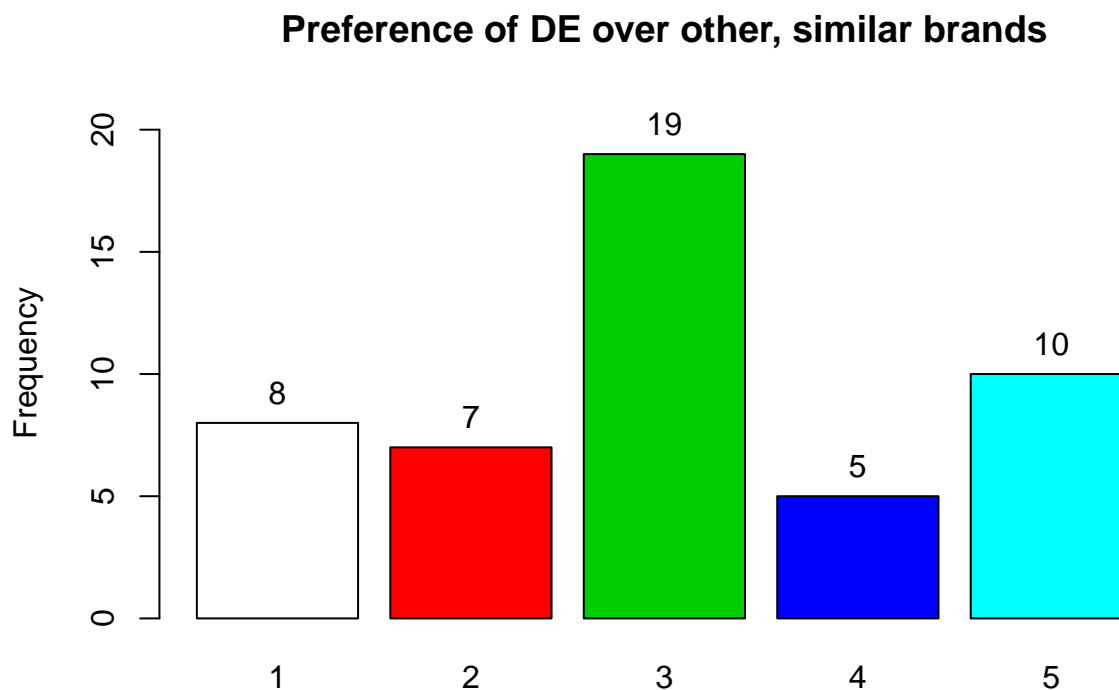
## Warning in cor.test.default(de.df$Q12_7, de.df$Q12_8, method = "spearman"):
## Cannot compute exact p-value with ties

##
## Spearman's rank correlation rho
##
## data:  de.df$Q12_7 and de.df$Q12_8
## S = 15517, p-value = 0.1508
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
##      rho
## 0.2083391
```

Brand Equity from a Consumers' Perspective

"If there are other brands similar to this one in terms of quality, I would still prefer Douwe Egberts."

```
tab1(de.df$Q24, cum.percent=TRUE, main="Preference of DE over other, similar brands")
```



```
## de.df$Q24 :  
##           Frequency Percent Cum. percent  
## 1              8      16.3         16.3  
## 2              7      14.3         30.6  
## 3             19      38.8         69.4  
## 4              5      10.2         79.6  
## 5             10      20.4        100.0  
## Total         49     100.0        100.0
```

Mean

```
mean(de.df$Q24)
```

```
## [1] 3.040816
```

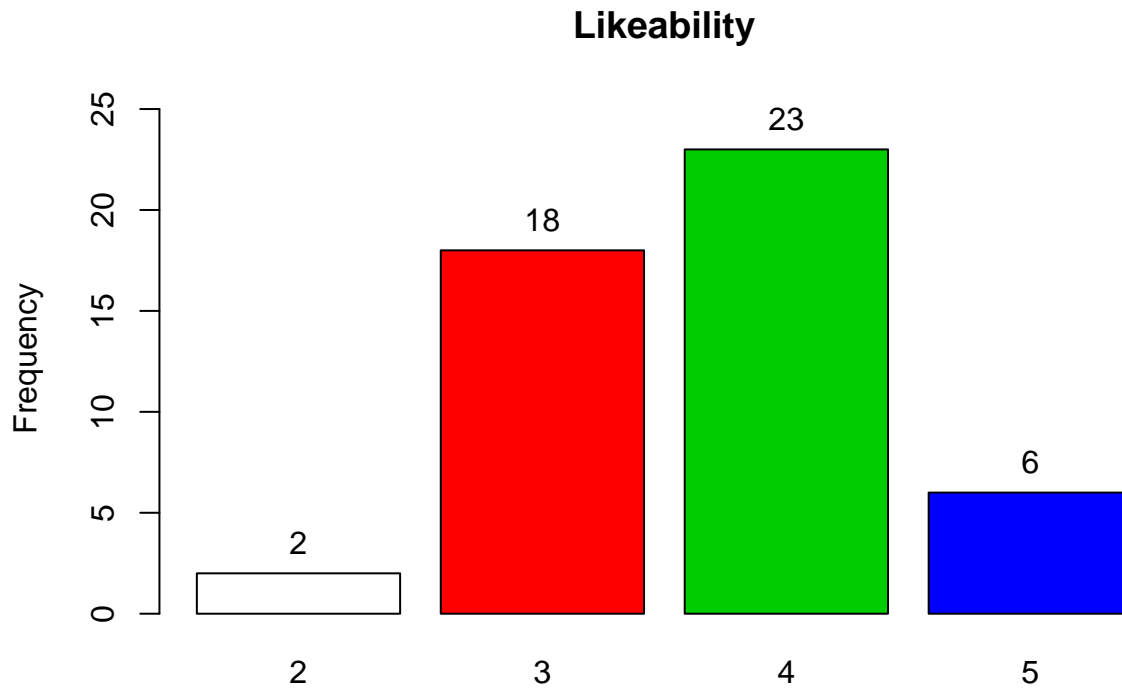
Standard Deviation

```
sd(de.df$Q24)
```

```
## [1] 1.322233
```

Perceived Likability of the Brand Douwe Egberts

```
tab1(de.df$Q12_9, cum.percent=TRUE, main="Likeability")
```



```
## de.df$Q12_9 :  
##           Frequency Percent Cum. percent  
## 2                2      4.1          4.1  
## 3               18     36.7         40.8  
## 4               23     46.9         87.8  
## 5                6     12.2        100.0  
## Total            49    100.0        100.0
```

Mean

```
mean(de.df$Q12_9)
```

```
## [1] 3.673469
```

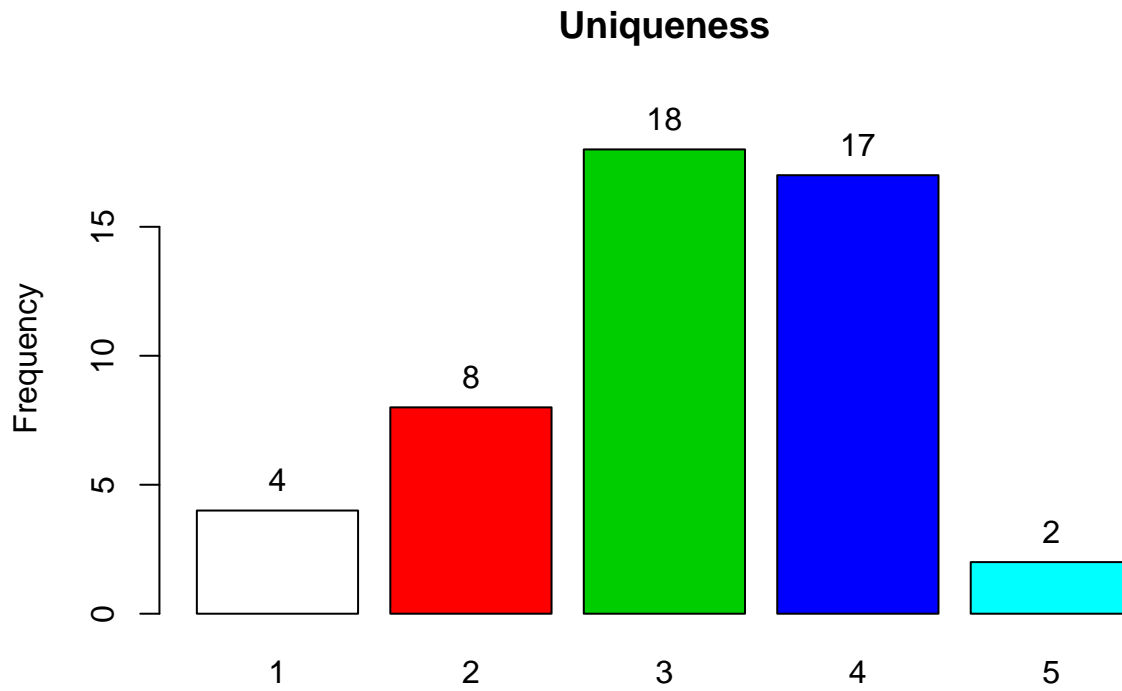
Standard Deviation

```
sd(de.df$Q12_9)
```

```
## [1] 0.7468756
```

Perceived Uniqueness of the brand Douwe Egberts

```
tab1(de.df$Q12_10, cum.percent=TRUE, main="Uniqueness")
```



```
## de.df$Q12_10 :  
##           Frequency Percent Cum. percent  
## 1              4      8.2         8.2  
## 2              8     16.3        24.5  
## 3             18     36.7        61.2  
## 4             17     34.7        95.9  
## 5              2      4.1       100.0  
## Total          49    100.0       100.0
```

Mean

```
mean(de.df$Q12_10)
```

```
## [1] 3.102041
```

Standard Deviation

```
sd(de.df$Q12_10)
```

```
## [1] 1.005089
```


Rank 1

```
aaa <- data.frame(as.numeric(strsplit(as.character(de.df$Q39_0_GROUP), "")[[1]]))  
aaa <- cbind(aaa, (data.frame(as.numeric(strsplit(as.character(de.df$Q39_0_GROUP), "")[[2]]))))
```

Summary Pie chart

```
lbls <- c("Sincerity", "Excitement", "Competence", "Sophistication")  
listje <- c(  
  mean(de.df$Q12_1) +  
  mean(de.df$Q12_2),  
  mean(de.df$Q12_3) +  
  mean(de.df$Q12_4),  
  mean(de.df$Q12_5) +  
  mean(de.df$Q12_6),  
  mean(de.df$Q12_7) +  
  mean(de.df$Q12_8)  
)  
pie(listje, labels=lbls)
```

