From the 2016 World Aeropress Champions, I have gathered data on the following features:

Position	Filter	Preparation	Weight	Grinder	Grind	Water	Type of Water	Temperature

For the nominal data: Position, Filter, Preparation, Grinder, Type of Water, frequent itemsets were mined. The total itemset was mined for most frequent to understand the basis, or underlying structure of a “winning” recipe. The quantitative data: Weight, Grind, Water, Temperature were analysed under principal component analysis (PCA) to find leading components. They were then hierarchically clustered to find groups within the continuous variables. Each cluster was then itemset mined to see their corresponding frequent nominal variables. The next step would be to use the best combinations of nominative with all continuous data and perform the same clustering. Each cluster, a generic recipe is provided, highlighting the principal components with a * (suggested to keep those options static when building your own recipe) and FREE VARIABLES which one is free to alter in any way (however, the mean is provided to give an overall index. The confidence interval should be assessed, however I think it’s best for the user to create! It can’t be all defined computationally.)

TOTAL ITEMSET

The * indicates the parameter worth keeping static.

```
 items                                 support count
[1] {Filter=Paper,Type.of.Water=Filtered} 0.42    21
[2] {Filter=Paper,Preparation=Rinsed}     0.42    21
[3] {Position=Inverted,Filter=Paper}      0.44    22
[4] {Filter=Paper}                        0.78    39
[5] {Position=Inverted}                   0.60    30
[6] {Preparation=Rinsed}                  0.54    27
[7] {Type.of.Water=Filtered}              0.54    27
[8] {Grinder=Mahlkoenig EK43}             0.48    24
```

PCA CLUSTERED CLUSTER 1 (BIGGEST)

The * indicates the parameter worth keeping static.
**Weight centroid = 18.04167
*Grind centroid = 5
FREE VARIABLE: Total Weight centre (232.2917 ± FREE)
FREE VARIABLE: Temperature centre (86.5 ± FREE)

```
   items                  support   count
[1] {Filter=Paper}          0.7500000 18
[2] {Preparation=Rinsed}    0.5833333 14
```

[3] {Position=Inverted} 0.5833333 14
[4] {Type.of.Water=Filtered} 0.5000000 12

PCA CLUSTERED CLUSTER 2

**Weight centre=25.55
*Temperature centre=95
FREE VARIABLE: Total weight centre(234 ± FREE)
FREE VARIABLE: Grind centre(5 ± FREE)

[1] {Filter=Paper} 0.7 7
[2] {Grinder=Mahlkoenig EK43} 0.5 5
[3] {Type.of.Water=Bottled} 0.5 5
[4] {Position=Inverted} 0.5 5

PCA CLUSTERED CLUSTER 3

***Temperature centre = 80
**Weight centre =26.06667
*Grind centre = 7
FREE VARIABLE: Total weight centre (237 ± FREE)

	items	support	count
[1]	{Filter=Paper, Preparation=Rinsed}	0.5333333	8
[2]	{Position=Inverted, Filter=Paper}	0.5333333	8
[3]	{Filter=Paper, Grinder=Mahlkoenig EK43}	0.5333333	8
[4]	{Grinder=Mahlkoenig EK43, Type.of.Water=Filtered}	0.5333333	8
[5]	{Filter=Paper, Type.of.Water=Filtered}	0.6000000	9
[6]	{Filter=Paper}	0.8666667	13
[7]	{Type.of.Water=Filtered}	0.7333333	11
[8]	{Grinder=Mahlkoenig EK43}	0.6666667	10

[9] {Position=Inverted} 0.6666667 10
[10] {Preparation=Rinsed} 0.6000000 9

PCA CLUSTERED CLUSTER 4

NONE