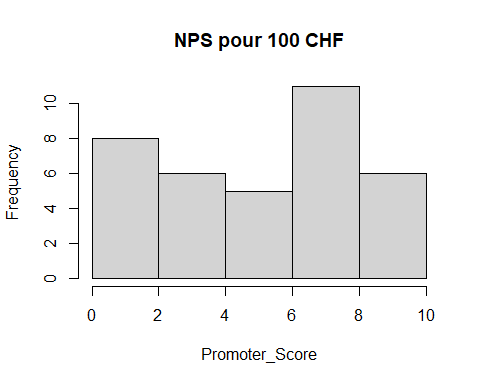
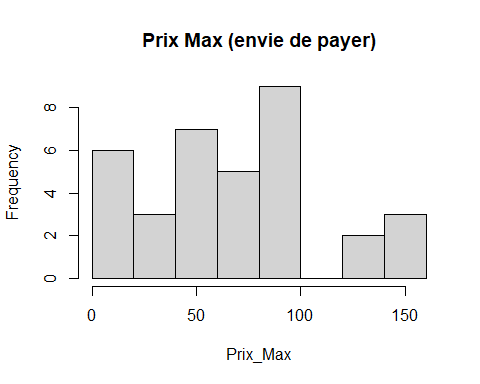
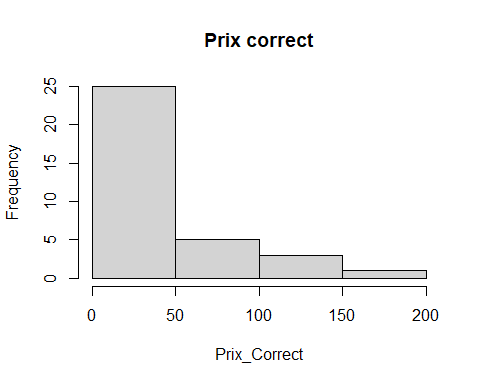
Rapport ITV

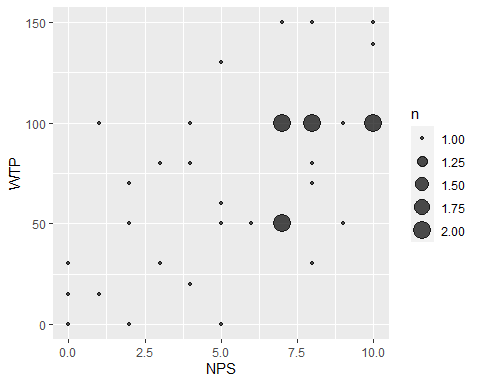
## Collected data

We have collected 36 answers.

Collected data shows that most people do not think that they should pay for testing (the fair price for most people is below 50 CHF) . But when asked what is the maximum amount they are willing to pay, a new cluster emerges (Graph 02).  
Indeed, some people are willing to pay 100 CHF for the new test, and they are going to recommend it to other users (NPS).



## Looking for Champions



So how can we predict if a customer is a good customer ?

We are currently looking for customers

* that are willing to pay at least 100 CHF and
* that have an estimated probability to recommend our product of at least 7/10 (every customer with a score below 7 is considered a detractor)

After 2 rounds of interviews, we had 11 champions over a total of 36 respondents (=0.3%).

## Exploratory Data Analysis with Random Forest

In this section, the systems analyzes 70% of the collected data (=0.7 \* 36) and test its model to predict 10 answers.  
The results are shown below.

## # A tibble: 10 x 5  
## .pred\_class .pred\_Detractor .pred\_Neutral .pred\_Supporter NPS\_Fact   
## <fct> <dbl> <dbl> <dbl> <fct>   
## 1 Detractor 0.742 0.084 0.174 Detractor  
## 2 Neutral 0.382 0.614 0.004 Neutral   
## 3 Detractor 0.802 0.078 0.12 Detractor  
## 4 Neutral 0.23 0.768 0.002 Neutral   
## 5 Detractor 0.602 0.398 0 Detractor  
## 6 Detractor 0.722 0.17 0.108 Detractor  
## 7 Supporter 0.378 0.058 0.564 Supporter  
## 8 Detractor 0.904 0.016 0.08 Detractor  
## 9 Detractor 0.654 0.184 0.162 Detractor  
## 10 Supporter 0.252 0.154 0.594 Supporter

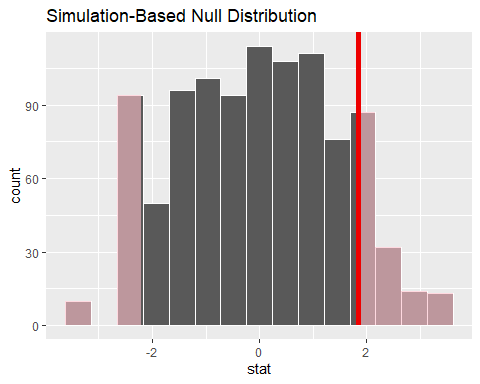
The accuracy of the Random forest model is 1 (1.0 = 100% being the maximum).

The classification rules extracted by the system are …

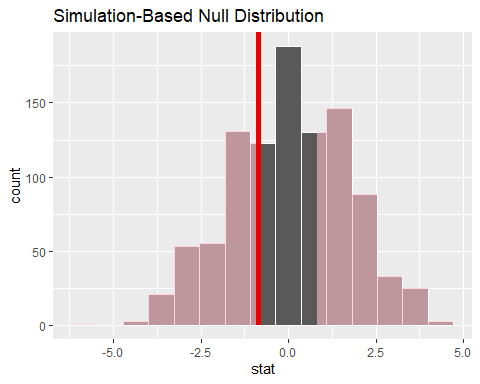
## len freq err  
## 1 3 0.04 0  
## 2 3 0.08 0  
## 3 1 0.08 0  
## 4 2 0.16 0.25  
## 5 1 0.2 0.4  
## 6 2 0.08 0.5  
## 7 2 0.08 0  
## 8 3 0.04 0  
## 9 2 0.16 0.25  
## 10 1 0.16 0.25  
## 11 3 0.32 0.375  
## 12 2 0.32 0.375  
## 13 1 0.16 0.5  
## 14 3 0.44 0.545  
## 15 3 0.2 0.6  
## 16 3 0.32 0.625  
## condition  
## 1 Before %in% c('Same','Worse') & During %in% c('Worse') & After %in% c('Better','Same')  
## 2 Before %in% c('Same','Worse') & During %in% c('Better') & After %in% c('Better')  
## 3 Before %in% c('Worse')  
## 4 Before %in% c('Same','Worse') & During %in% c('Better')  
## 5 During %in% c('Better')  
## 6 During %in% c('Worse') & After %in% c('Better')  
## 7 During %in% c('Same') & After %in% c('Better')  
## 8 Before %in% c('Better') & During %in% c('Better') & After %in% c('Better')  
## 9 During %in% c('Better','Worse') & After %in% c('Same','Worse')  
## 10 Before %in% c('Better')  
## 11 Before %in% c('Same') & During %in% c('Same') & After %in% c('Better','Worse')  
## 12 Before %in% c('Better','Same') & After %in% c('Worse')  
## 13 During %in% c('Worse')  
## 14 Before %in% c('Same','Worse') & During %in% c('Better','Same') & After %in% c('Better','Worse')  
## 15 Before %in% c('Same') & During %in% c('Same','Worse') & After %in% c('Same')  
## 16 Before %in% c('Same','Worse') & During %in% c('Better','Same') & After %in% c('Same')  
## pred  
## 1 Supporter  
## 2 Neutral  
## 3 Neutral  
## 4 Neutral  
## 5 Neutral  
## 6 Neutral  
## 7 Detractor  
## 8 Detractor  
## 9 Detractor  
## 10 Detractor  
## 11 Detractor  
## 12 Detractor  
## 13 Detractor  
## 14 Detractor  
## 15 Detractor  
## 16 Detractor

## Effect of the customer journey on promoter score

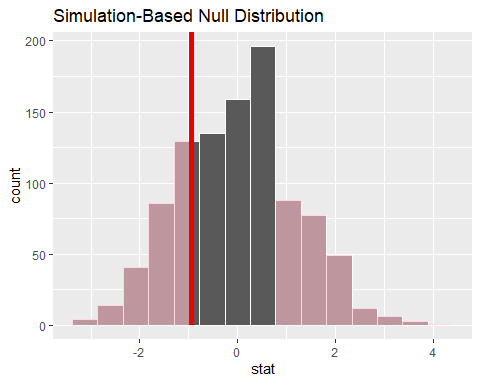
The customer journey seems to have an effect on the willingness to pay of the customers.  
Nonetheless, the collected sample was fairly small and we predict what is the probability that the results could change, if new data is collected.



The probability that the difference between the NPS scores of those who liked the new “Before” stage (wrt those who did not like it) will change, if new data is collected, is: 0.29 (p-value).



The probability that the difference between the NPS scores of those who liked the new “DUring” stage or thought it was the same (wrt those who did not like it) will change, if new data is collected, is: 0.63 (p-value)



The probability that the difference between the NPS scores of those who liked the new “After” stage (wrt those who did not like it) will change, if new data is collected, is: 0.47 (p-value)

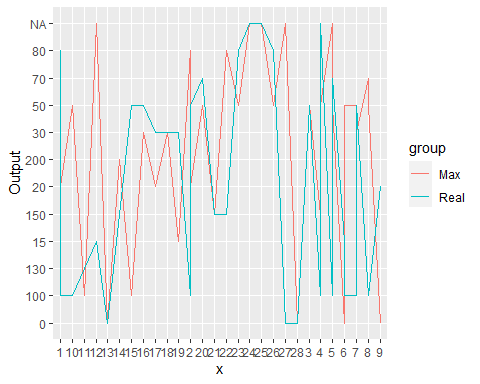
## Effect of the customer journey on the NPS associated with 100 CHF

## # A tibble: 20 x 5  
## term estimate std.error statistic p.value  
## <chr> <dbl> <dbl> <dbl> <dbl>  
## 1 Age<20 ans -1.07 2.75 -0.389 7.01e-1  
## 2 Age21-30 ans 2.91 1.09 2.66 1.44e-2  
## 3 Age31-40 ans 2.47 1.74 1.42 1.70e-1  
## 4 Age41-50 ans 8.50 1.61 5.29 2.60e-5  
## 5 Age51-60 ans 7.44 1.50 4.97 5.65e-5  
## 6 Age61 ans et plus 7.44 1.50 4.97 5.65e-5  
## 7 TestExperienceBetter -9.51 2.97 -3.20 4.17e-3  
## 8 TestExperienceWorse -1.51 2.97 -0.507 6.17e-1  
## 9 TestResultsBetter 3.07 1.26 2.43 2.38e-2  
## 10 TestResultsWorse -1.25 1.15 -1.08 2.90e-1  
## 11 Age21-30 ans:TestExperienceBetter 9.36 3.18 2.94 7.61e-3  
## 12 Age31-40 ans:TestExperienceBetter NA NA NA NA   
## 13 Age41-50 ans:TestExperienceBetter 2.71 3.42 0.793 4.36e-1  
## 14 Age51-60 ans:TestExperienceBetter NA NA NA NA   
## 15 Age61 ans et plus:TestExperienceBetter NA NA NA NA   
## 16 Age21-30 ans:TestExperienceWorse -0.00795 3.41 -0.00233 9.98e-1  
## 17 Age31-40 ans:TestExperienceWorse NA NA NA NA   
## 18 Age41-50 ans:TestExperienceWorse NA NA NA NA   
## 19 Age51-60 ans:TestExperienceWorse NA NA NA NA   
## 20 Age61 ans et plus:TestExperienceWorse NA NA NA NA

The linear regression analysis shows that respondents *aged >40* have the tendency to give at least 7/10 for the NPS (p<0.01).  
If the *Test result* phase is perceived as better than the current one, the scores goes up 3 points (p<0.05). An loss in quality of *Testing phase* leads to 1 point less, whereas an improvement in the *Testing phase* in itself seems to be more problematic to understand: if respondents have less somewhere between 21 and 30 years, there is not effect (-9.5 + 9.35). Instead, if they are aged between 41 and 50 years old, the score might be going down 7 points (p>0.40).

Although the model has many variables its explanatory power is fairly good: the Adjusted R2 of the model is 0.41.

## Appendix: Correct price



* La courbe bleue montre les prix corrects de la nouvelle solution qu’on partagé les sondés tandis que la courbe orange montre les prix maximaux qu’ils seraient prêts à débourser pour une telle solution
* Nous remarquons que la grande majorité des sondés ont défini des prix maximaux qui se trouvent en dessous des prix qu’ils trouvent corrects pour une telle solution.
* La moyenne des prix corrects estimés par le panel est de : CHF
* La moyenne des prix maximaux estimés par le panel est de : CHF
* La différence moyenne entre la perception de ces deux prix est d’environ : CHF