

SCIENTIFIC RESEARCH.

Examples of predictive validity studies conducted with AssessFirst clients between 2014 and 2021.

ASSESSFIRST Client Predictive Validity & ROI Studies

How to anticipate the ability to succeed and reduce turnover through psychometrics?

Study conducted by AssessFirst's Science & Innovation team.

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Client Advisor.

Finance

Context.

This study concerns a subsidiary of a banking group that is present in over 30 countries and has nearly 20,000 employees.

The client advisors are a crucial part of the company's sales force. Our study aims to identify the factors linked to success in their offices, in order to improve their candidate screening process.

Diagnosis.

Open client advisor positions receive a very large volume of applications; it is a position that does not require any particular experience since training is tailored specifically to the client's products and is provided upon arrival for new employees.

The objective is therefore to identify, as early as possible in the recruitment process, those candidates with the highest probability of success in their teams.

Study population.

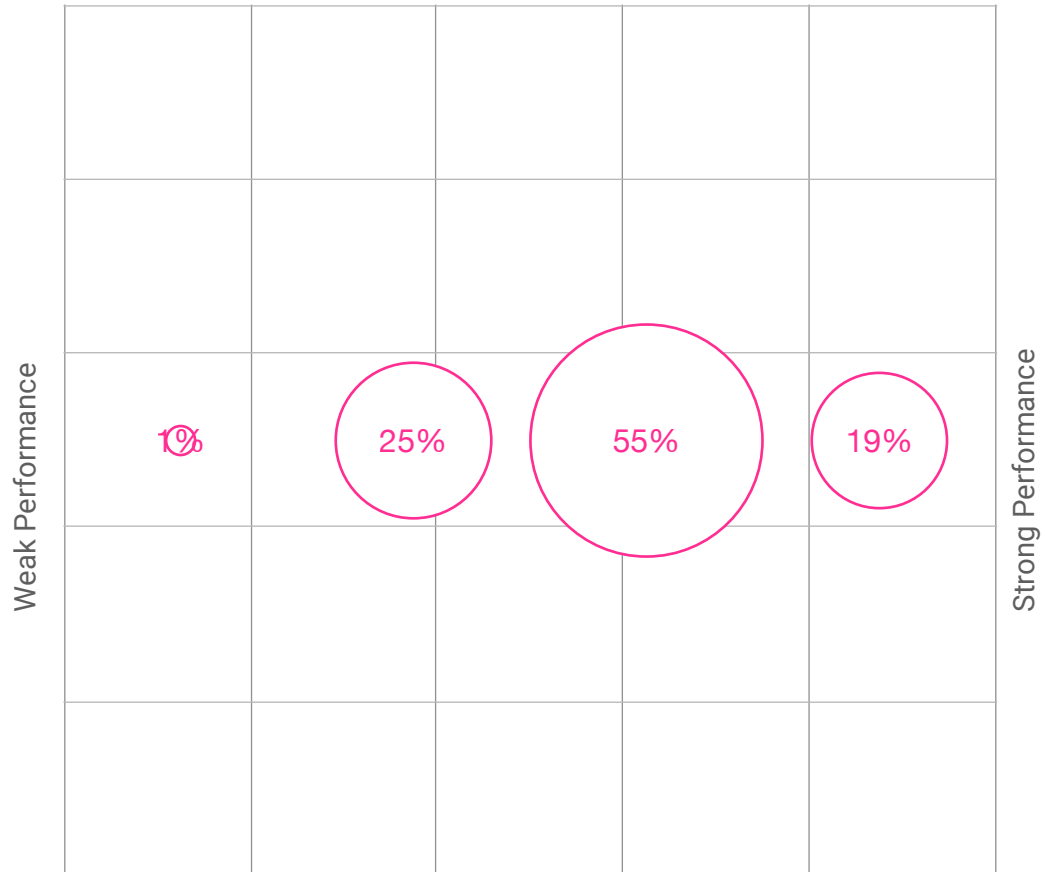
402 employees throughout France with a minimum of 6 months seniority in the role were solicited for the study.

In order to assess their level of performance, we had access to evaluations of 9 business skills for each individual. Here are a few examples:

- Practicing active listening
- Being results-oriented
- Being customer oriented
- Knowing how to conduct a commercial interview (sale / negotiation)
- Ability to negotiate

This evaluation was carried out by their managers during Annual Assessment Interviews.

The first descriptive statistical analysis led us to distinguish 4 levels of overall performance. Here is the distribution of our study population over these 4 levels:



Methodology.

We modeled multiple linear regressions in order to identify the individual characteristics related to job performance.

This analysis revealed a significant correlation between job performance and 8 personality traits (SHAPE), 7 motivational factors (DRIVE), as well as 4 styles of reasoning (BRAIN).

These 19 characteristics were consolidated into a single predictive model. Each profile (candidate and employee) can be compared to this model in order to obtain a score out of 100. The higher the score, the more the profile shows characteristics linked to job performance.

Results.

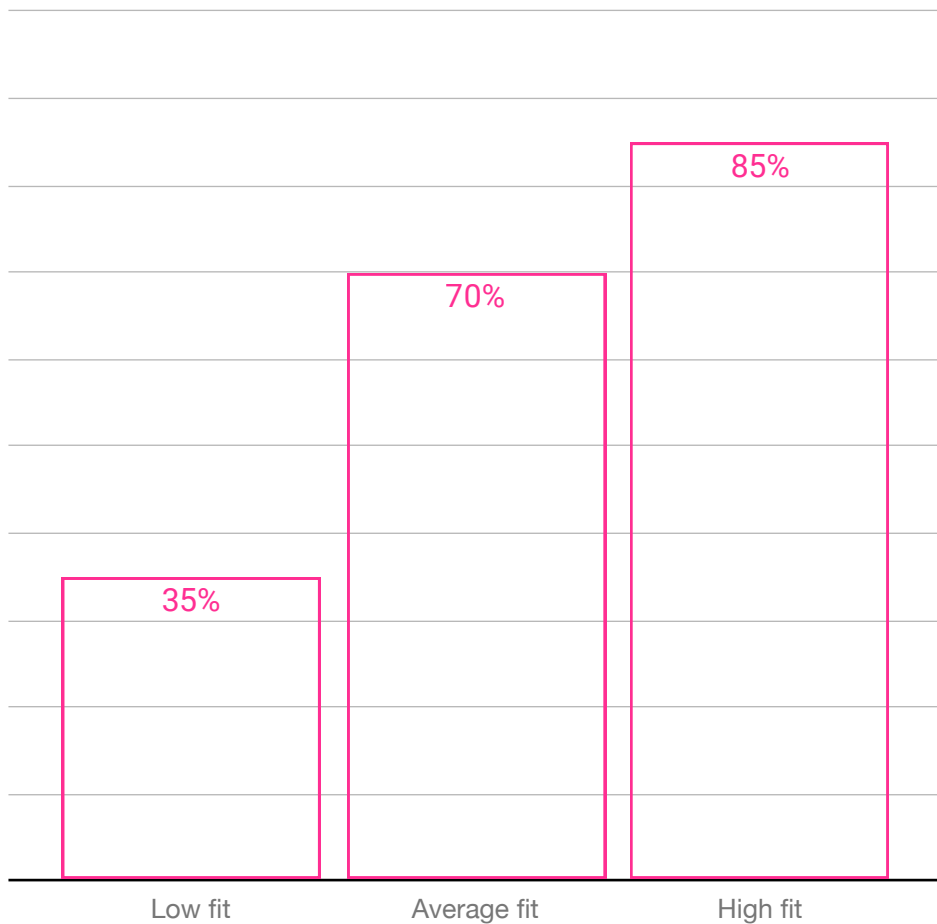
In order to measure the predictive validity of the model, we studied the correlation between the model score obtained by employees from a test sample (n = 100) and their performance level on the job.

The table below shows the results obtained on the two samples (p <.01):

	Model	Test
SHAPE	0,52	0,40
DRIVE	0,44	0,35
BRAIN	0,37	0,40
Combination of 3	0,52	0,44

All three tests show proper predictive validity (> .30). The combination of the three provides incremental validity which reaffirms and increases the predictive ability.

For the operational application of the predictive model, the graph below shows the probability of being among the two highest performance levels according to one's score on the predictive model:



Low fit = Scores between 0 and 49

Average fit = Scores between 50 and 59

High fit = Scores between 60 and 100

Diversity index.



Using the model as an aid during the selection process, the risk of recruiting people who are similar in terms of psychological characteristics is limited to 27% of the criteria assessed. The model therefore leaves room for **73% diversity** among the people recruited.

Conclusion.

Preselecting candidates using the predictive model achieves 85% reliability regarding expected job performance.

Restaurant Managers & Assistants.

Food Service

Context.

This study concerns a large fast food chain (200+ restaurants in France) that has 60 million customers per year.

Restaurant Managers, as well as their Assistants, play an essential role in ensuring the entire network's success. Our study aims to identify what distinguishes the top performers among them.

Diagnosis.

Some of the candidates for the positions in question come from internal mobility (promotion), others from external recruitment.

In the first situation, the difficulty lies in the ability to identify people with high potential for development, those who will succeed as they evolve.

In the second situation, it is a matter of identifying the profiles capable of integrating into the specific corporate culture and thus transposing their skills.

Study population.

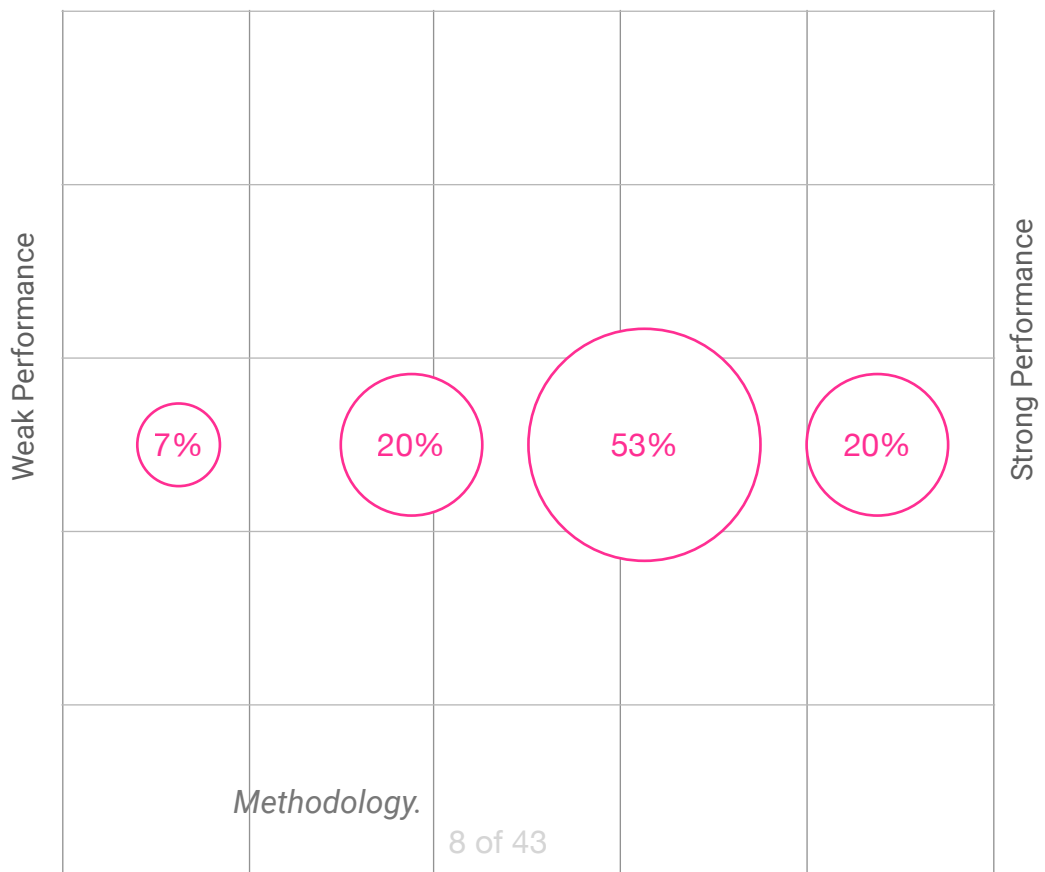
The study was carried out in 2018, consisting of 93 Assistant Managers (minimum 1 year seniority) and 86 Managers (minimum 2.5 years seniority).

We also collected their performance levels, obtained during annual assessment evaluations.

Assistant Managers:



Restaurant Managers:



Methodology.

We modeled multiple linear regressions in order to identify the individual characteristics related to job performance.

This analysis revealed a significant correlation between job performance and 9 personality traits (SHAPE), 7 motivational factors (DRIVE) for Assistant Managers. For Restaurant Managers, a correlation was found between performance and 9 personality traits (SHAPE), 8 motivational factors (DRIVE).

Number of personality dimensions (SHAPE) shared between the two models: **3**

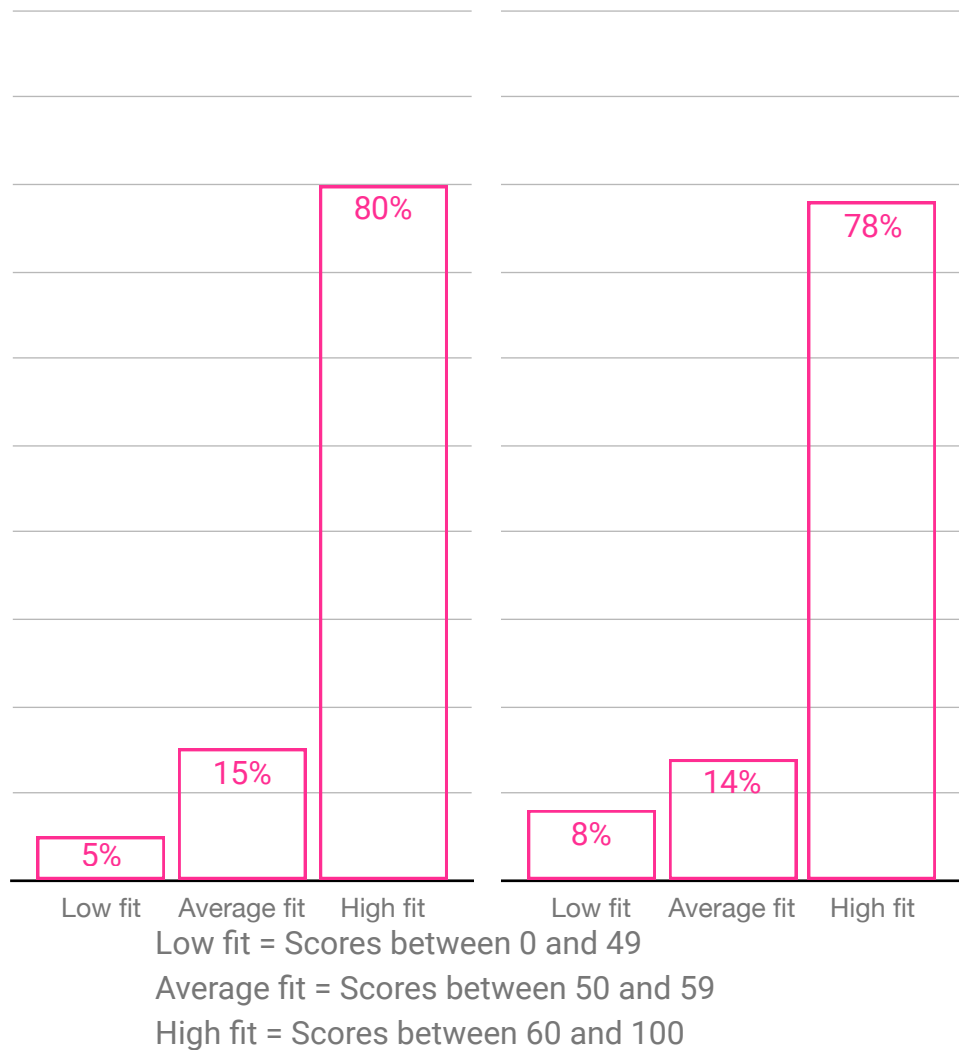
Number of motivational factors (DRIVE) shared between the two models: **4**

These characteristics were consolidated into two predictive models. Each profile (candidate and employee) can be compared to these models in order to obtain a score out of 100. The higher the score, the more the profile shows characteristics linked to job performance.

Results.

In order to measure the predictive validity of the models, we studied the probability of success (high or very high performance) regarding fit to the model score using a test sample (21 and 23 people respectively).

The graphs below show this probability.
The one on the left concerns assistant managers.
The one on the right concerns managers.



Diversity index.



Using the model as an aid during the selection process, the risk of recruiting people who are similar in terms of psychological characteristics is limited to 25% of the criteria assessed for both models. The models therefore leave room for **75% diversity** among the people recruited.

Conclusion.

Preselecting candidates using the predictive model achieves nearly 80% reliability regarding expected job performance.

Consultants.

Consulting

Context.

The client in question is a firm that has been shaking up the consulting world for 15 years. With more than 400 consultants, they work to support business transformations in different sectors, focusing on technological advances.

This highly unique firm sets itself apart from its competitors with a radical approach and a strong corporate culture fueled by daring, excellence, intuition, humility and passion.

Diagnosis.

The firm is very demanding in their selection of consultants. Up until the time of this study, it was only possible to be recruited if you held a diploma from one of the 4 top business schools in France.

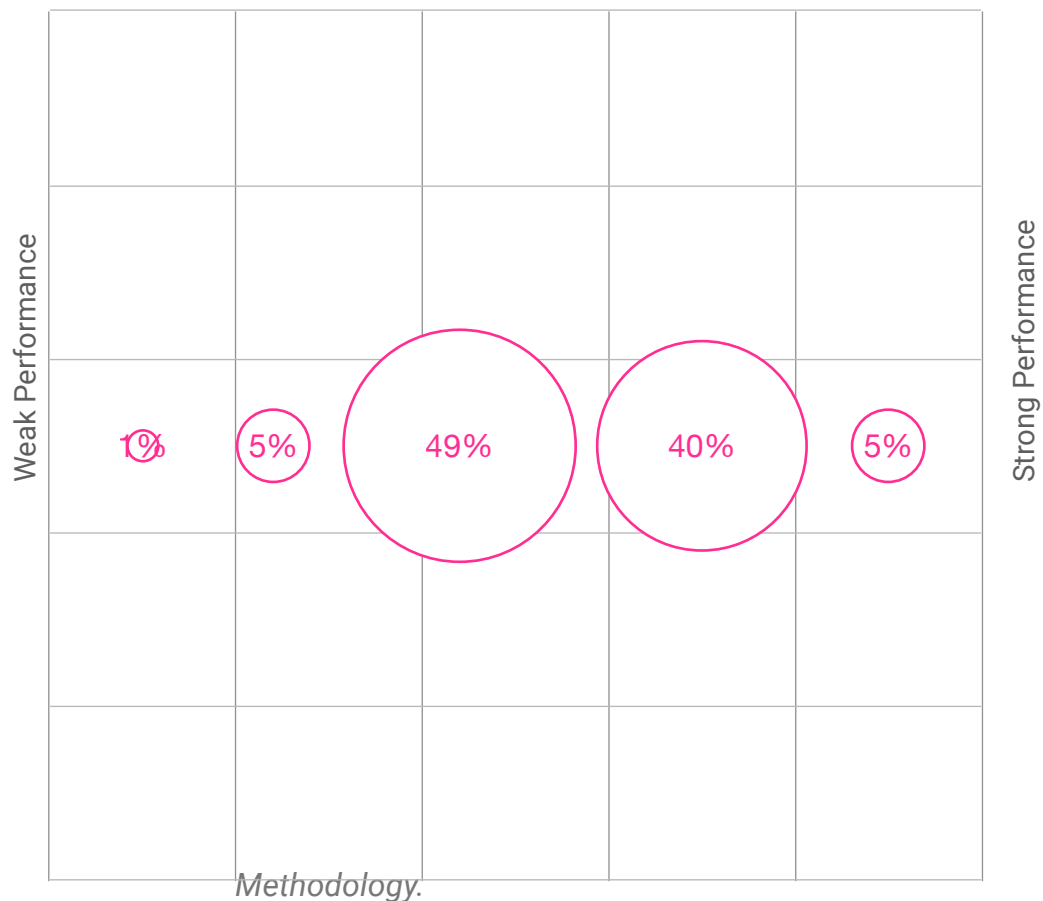
The manager's objective was therefore to open up their flow of candidates to profiles from more varied backgrounds, without compromising the expected level of competency.

Study population.

250 consultants (over half their workforce) participated in the study, which allowed us to calibrate the predictive model. They averaged 2.9 years experience in the company.

We were able to assess their job performance levels through evaluations carried out during their annual assessment interviews.

Here is the distribution of the 250 consultants' performance on a 5-level scale:



The scores are very concentrated around the average (3 and 4 out of 5), so we separated the sample into 2 distinct groups for the study.

Group 1: received scores of 1, 2 and 3. These are medium to low rated consultants.

Group 2: scores of 4 and 5. These are either well or very well rated consultants.

This is the first distinction, Group 2 representing the "target" consultants, used to construct the predictive model.

We performed multiple linear regression to identify individual characteristics related to job performance.

Since the performance scores are very clustered, we also carried out a polytomous logistic regression between groups 1 and 2 to identify the distinctive characteristics of each.

These analyzes revealed a significant effect of 7 personality traits (SHAPE), 8 motivational factors (DRIVE). The effect of reasoning (BRAIN) will be discussed.

These 15 characteristics were consolidated into independent models (one per test) and then grouped under a single predictive model. Each profile (candidate and employee) can be compared to this model in order to obtain a score out of 100. The higher the score, the more the profile shows characteristics linked to job performance.

Results.

In order to measure the predictive validity of the models, we studied the correlation between the score obtained by a test sample of employees (n = 50) and their performance on the job.

The table below shows the results obtained on the two samples (p <.01):

	Model	Test
SHAPE	0,52	0,53
DRIVE	0,26	0,37
<p>SHAP BRAIN has very high predictive validity (> .50), at a level type Combination reasoning tests. DRIVE has correct validity, which adds a slight incremental validity to that of SHAPE.</p>		
SHAPE / DRIVE	0,59	0,57

Notes on reasoning (BRAIN): This test has no significant effect in our analysis because the entire sample had average scores that were well above the global average.

So adding BRAIN into the model would mechanically increase all the scores of the consultants. However, it is still essential to take this test into account when selecting candidates and to look for a minimum level.

Diversity index.



Using the model as an aid during the selection process, the risk of recruiting people who are similar in terms of psychological characteristics is limited to 22% of the criteria assessed for both models. The models therefore leave room for **78% diversity** among the people recruited.

Conclusion.

The predictive model produced from this data is among the best available on the market using psychometric tools similar to those developed by AssessFirst. It's a highly reliable way to identify candidates with very high potential for success. In this sense, it meets the stated objective perfectly.

Sales Host(ess).

Retail

Context.

This is a large company from a well-established group offering lingerie, sports wear and prêt-à-porter fashion. They have nearly 4,000 points of sale around the world and over 14,000 employees.

The bulk of their workforce are Hosts and Sales associates. These positions - similar to other companies in the sector - have a particularly high turnover rate (close to 50%).

Diagnosis.

Being a Sales Hosts does not require any diploma or special qualifications. The positions receive very high volumes of applications, which are difficult to rely on for any meaningful selection criteria.

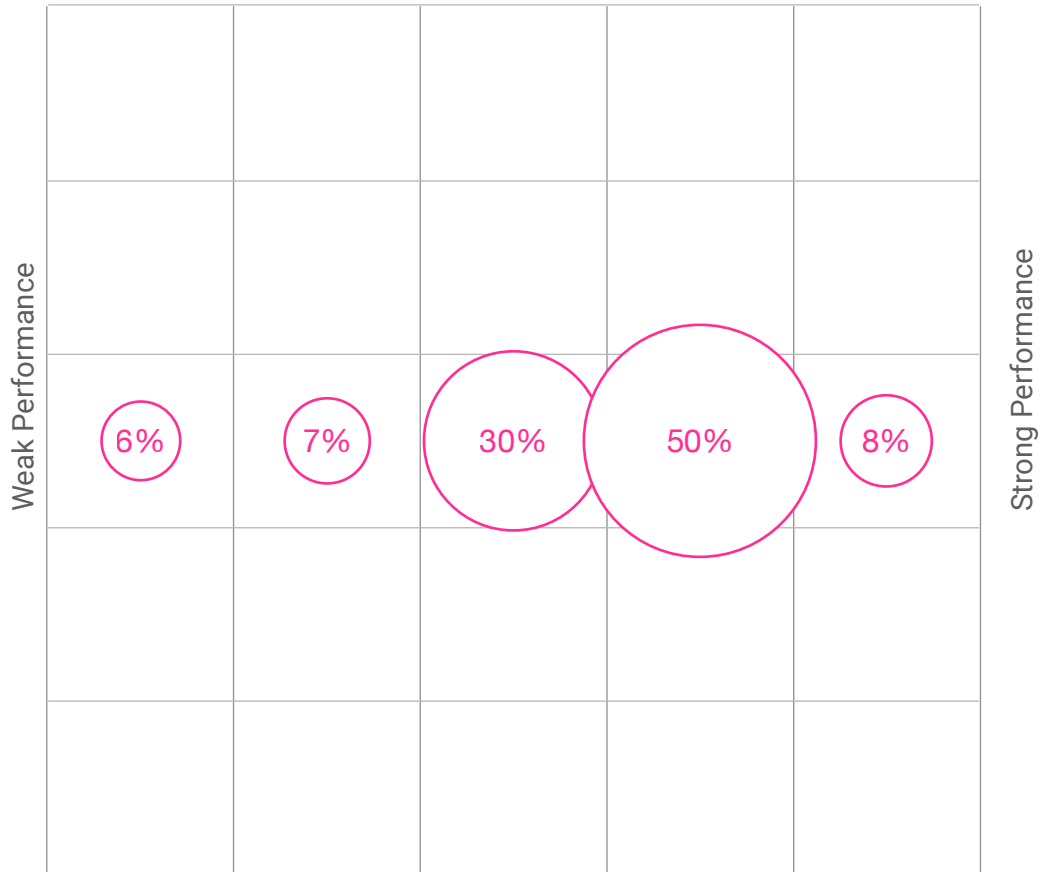
The study therefore aims to identify the personal characteristics that distinguish successful people. The objective is to then assess these characteristics during recruitment in order to select candidates more efficiently and effectively.

Study population.

The plan was complicated to mobilize, since the evaluations had to be carried out in the stores, on a shared computer. A total of 108 hosts participated in the study, with an average of 2.7 years in the company (and a standard deviation of 2.4).

We were able to assess the hosts performance level using feedback from their managers on two points: first, meeting their quantified objectives, and second, on the quality of their attitude.

The combination of these two indicators allowed us to group the hosts into 5 levels, distributed as such:



Methodology.

Although their performances were unevenly distributed (explained by how participants were chosen), we can approach the data both linearly and in comparison to groups.

Group 1: scores of 1, 2 and 3. These hosts were rated medium to low.

Group 2: scores of 4 and 5. These are either well or very well rated hosts.

We performed multiple linear regression to identify individual characteristics related to job performance.

We also performed polytomous logistic regression between groups 1 and 2 to identify distinguishing features.

These analyses revealed a significant impact of 8 personality traits (SHAPE), 8 motivational factors (DRIVE). We did not find a significant effect from reasoning (BRAIN).

These 16 characteristics were grouped together under a single predictive model. Each profile (candidate and employee) can be compared to this model in order to obtain a score out of 100. The higher the score, the more the profile shows characteristics linked to job performance.

Results.

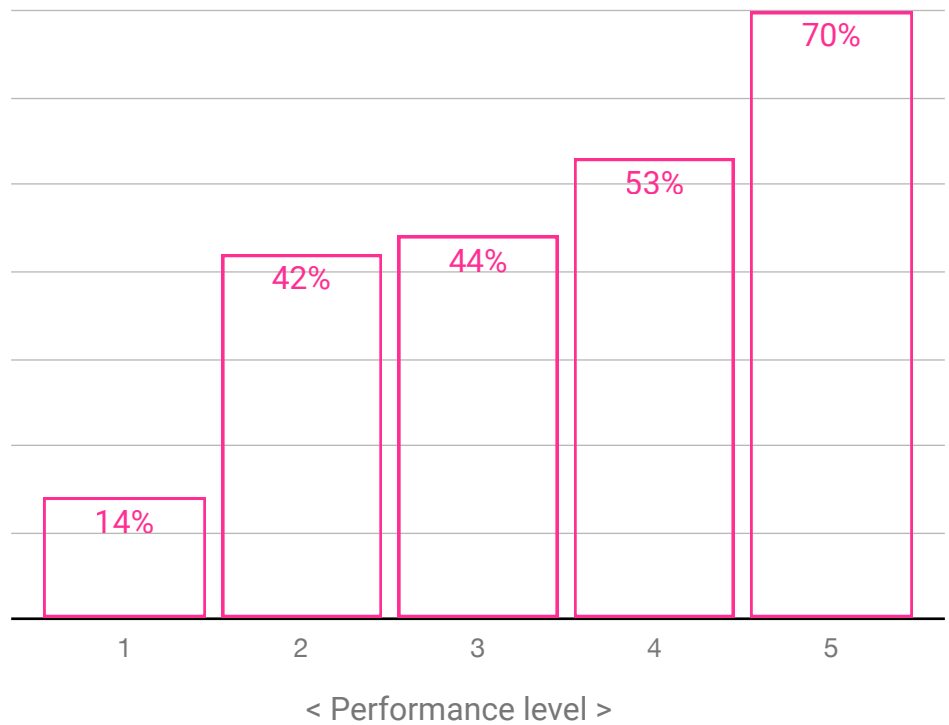
In order to measure the predictive validity of the models, we studied the correlation between the score obtained by a test sample of employees (n = 16) and their performance level on the job.

The table below shows the results obtained on the two samples (p <.05):

	Model	Test
SHAPE	0,27	0,34
DRIVE	0,30	0,21
BRAIN	0,15	0,02
Combination SHAPE / DRIVE	0,29	0,37

The predictive validity levels obtained are average. They correspond to those conventionally found in scientific literature, when the tests are used according to a descriptive approach.

By regrouping the two samples below, you can see how the model reflects job performance (% equals the individual's fit to the model in comparison to their performance):



Diversity index.



Using the model as an aid during the selection process, the risk of recruiting people who are similar in terms of psychological characteristics is limited to 25% of the criteria assessed. The model therefore leaves room for **75% diversity** among the people recruited.

Conclusion.

The model obtained has more modest predictive abilities than the other studies presented in this document. As the conditions were not optimal for collecting data on the samples, we recommend updating the model after collecting additional data. As it stands, the model still provides a significant contribution to candidate selection and can allow recruiters to focus on objective elements when assessing candidates' potential.

Sales Advisors.

Insurance

Context.

This study concerns a fast-growing mortgage and mortgage insurance broker.

Due to this growth, the client also has, in parallel, a growing need for sales advisors.

Diagnosis.

On the one hand, the client is concerned with the advisors' performance: their current advisors have evenly distributed levels of success within the company.

On the other hand, in a growing company, it is essential to maintain a strong, unified corporate culture. Commercial success is therefore not the only objective, as it is also necessary to recruit employees who can adopt an attitude aligned with the values of the company.

Additionally, these teams face a high turnover rate, due to the large demand for sales advisors in the market.

Study population.

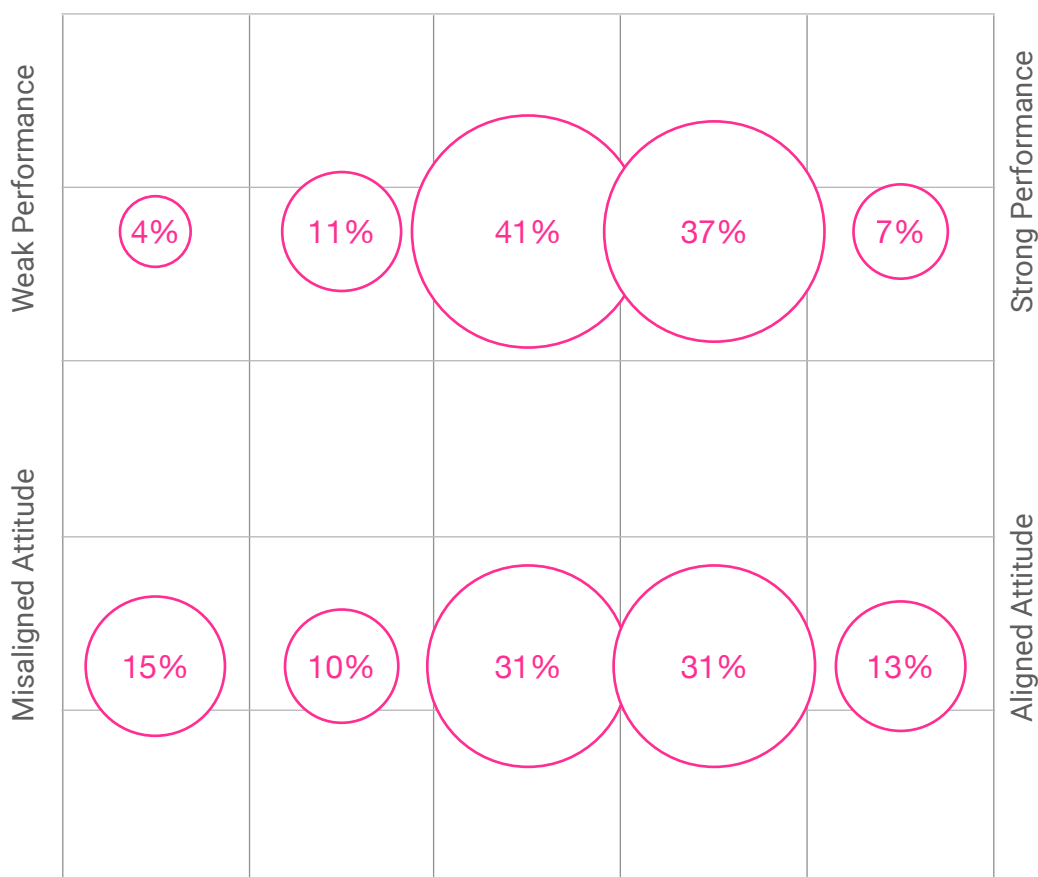
As the sample was rather small, the study was conducted in two stages: first involving 74 sales advisors, resulting in an initial model. Then a second sample 18 months later made it possible to measure the impact and success of the model on 61 new recruits.

With the client's objectives in mind, we identified 3 points of interest:

- Performance. It is quantified, objective, and corresponds to their set sales objectives.

- Attitude. This data is gathered via HR interviews and manager feedback, reflecting a more qualitative assessment.
- Turnover. It's measurable, and we can identify who initiates this action.

Here are the results from the second wave sample:



Methodology.

We performed multiple linear regression to identify individual characteristics related to job performance.

This analysis revealed a significant impact from 8 personality traits (SHAPE), 8 motivational factors (DRIVE) and 2 reasoning styles (BRAIN).

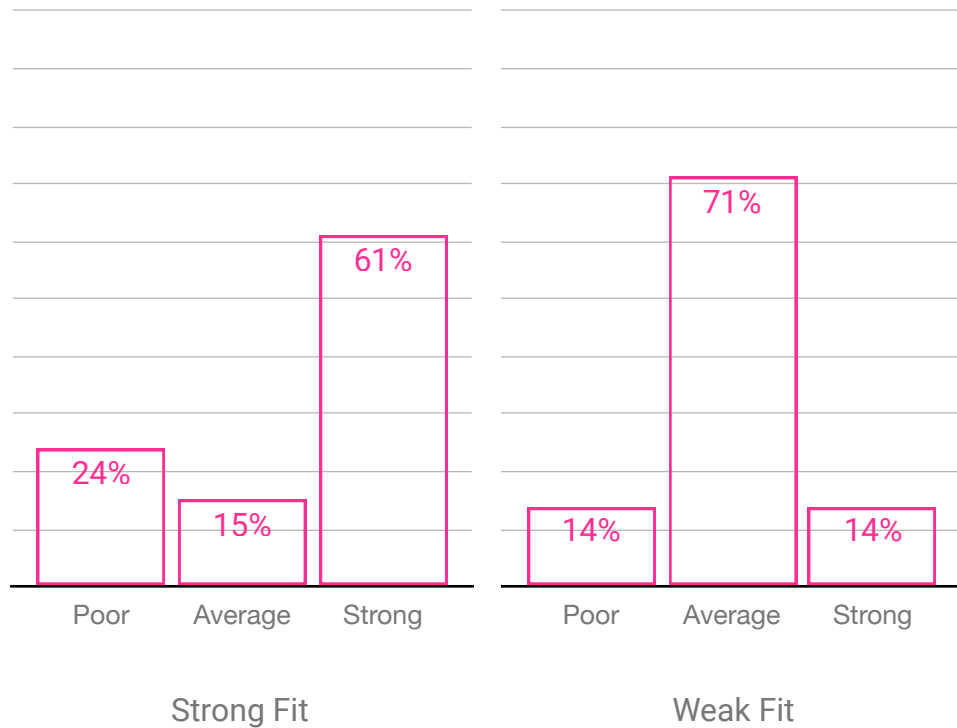
These 18 characteristics were consolidated into a single predictive model. Each profile (candidate and employee) can be compared to this model in order to obtain a score out of 100. The higher the score, the more the profile shows characteristics linked to job performance.

As the model was yet to be consolidated with the larger sample, it was used as an indecisive factor during the recruitment decision. This allowed us to still be able to analyze the link between the candidate's score obtained on the model and their level of success in the post thereafter.

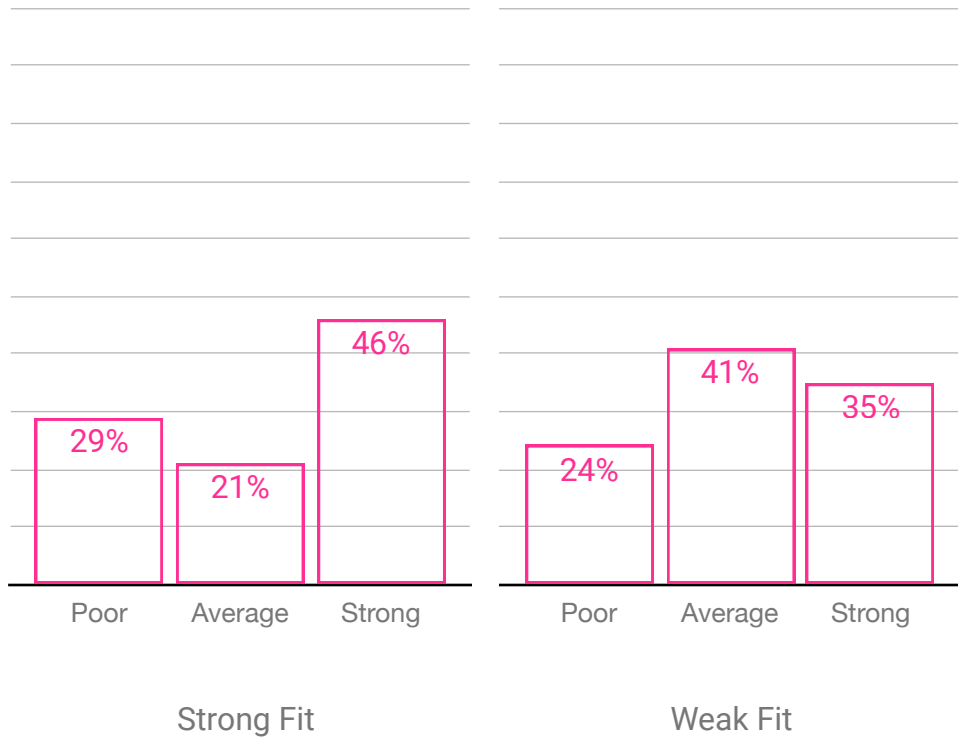
Results.

We compared 2 groups: first, those who were a strong fit according to the predictive model (n = 28), and second, those with low levels of fit (n = 17). The 16 people who scored an average fit were left out.

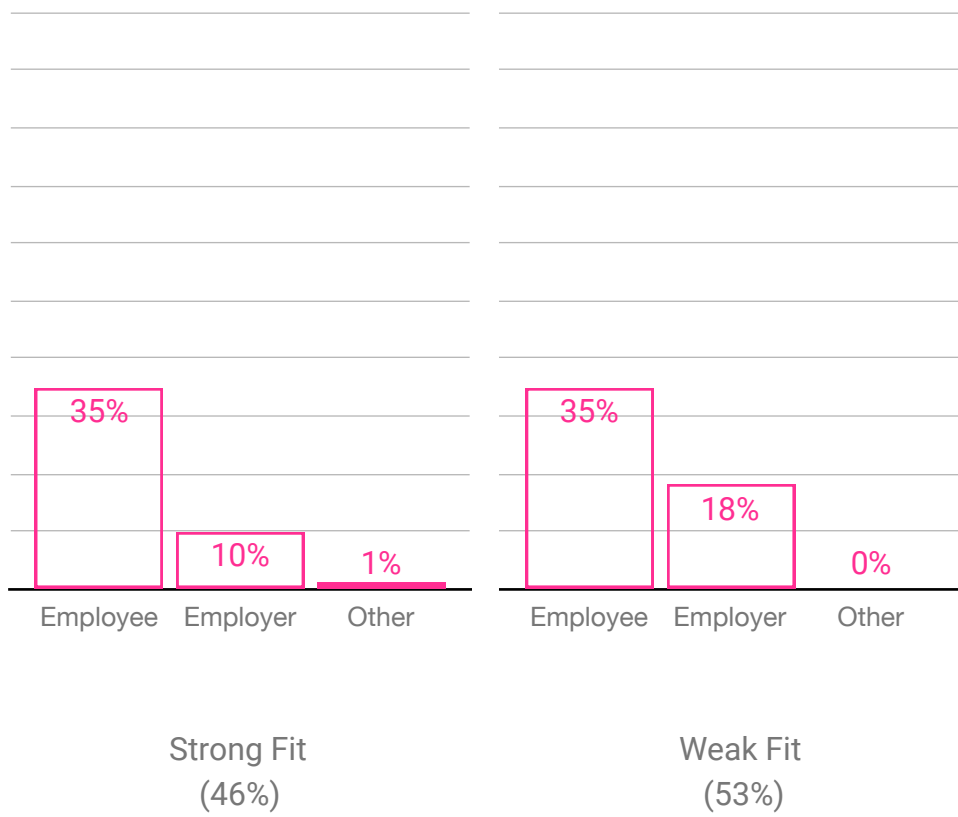
Sales advisors performance according to their model fit:



Sales advisors' adherence to company values according to their model fit:



Sales Advisor turnover (who initiated the departure) according to their model fit:



Regarding performance, those identified as a high fit to the model had a much more significant link to being successful in the job, as opposed to those with a low fit.

The effect is less noticeable regarding adherence to company values. Given the sample size, it would be risky to draw any conclusions.

Regarding turnover, we see that the majority of times were initiated by employees. After a detailed analysis, there are no clear trends to explain these results. Our hypothesis is therefore that turnover originates from a cause at the organizational level (working conditions, management, compensation, etc.) rather than at the individual level.

Diversity index.



Using the model as an aid during the selection process, the risk of recruiting people who are similar in terms of psychological characteristics is limited to 23% of the criteria assessed. The model therefore leaves room for **77% diversity** among the people recruited.

Conclusion.

Measuring the impact of the model on the second sample suggests an ability to anticipate candidates' potential performance.

Based on the data obtained, we updated the model to have a stronger effect on adherence to values. Therefore, it is possible that this influences a reduction in turnover.

Graduate Program.

Commercial Real Estate

Context.

The company is the world's leading designer and global operator of shopping centers, with over 3,000 employees across 12 countries.

Their European Graduate Program intends to identify the future elites of the company. It is an extremely demanding fast-track program. It also has a reputation for being extremely selective: each year, only around 20 places are available to over 1,300 candidates.

Diagnosis.

There are two points of interest that come up when studying the client's European Graduate Program (EGP).

The first is an objective to make the company more diversity. Up to this point, the EGP was only open to alumni of the top 10 business and engineering schools.

The second is constraints related to the flow of applications: they need a reliable process that can be applied to a large volume of applicants year after year.

Study population.

The study sample was separated into two waves: first, 39 employees from the EGP course (19 women and 20 men) allowed us to create an initial model.

The second wave analyzed new classes arriving into the EGP, involving 71 people (36 women and 35 men).

Once in the program, employees have their performance evaluated and are given a rating out of 5 points:

1 = far below target

2 = below target

3 = meeting targets

4 = above target

5 = far above target

Methodology.

The first study led to an initial model that was tested on the following incoming classes of EGP. There was a glaring gap between the following classes and the preceding years: the company's expectations had changed searching for a different attitude in their students.

We used this information to update the model, focusing on trends that were driving better performance among newer graduates over previous ones.

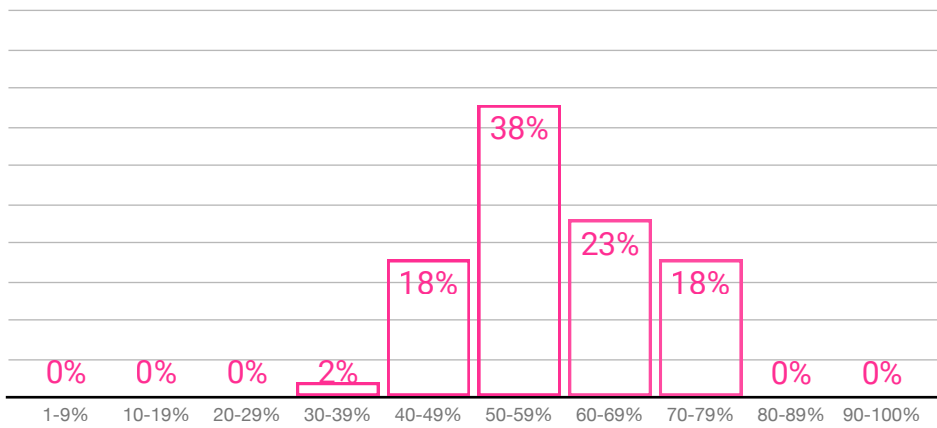
This analysis revealed a significant impact from 8 personality traits (SHAPE), 8 motivational factors (DRIVE) and 1 very high level of reasoning (BRAIN).

These 17 characteristics were consolidated into a single predictive model.

Results.

In order to measure the predictive validity of the models, we studied the correlation between the model fit of EGP recruits and their actual performance. distribution of adequacy of the people recruited into the program, as well as the link between these levels of adequacy and the performance obtained.

Impact of modeling on the first promotions:



Distribution:

20% of the class has a model fit less than 50%.

38% of the of the class has an average model fit (50% to 59%).

41% of the class has a model fit greater than 60%.

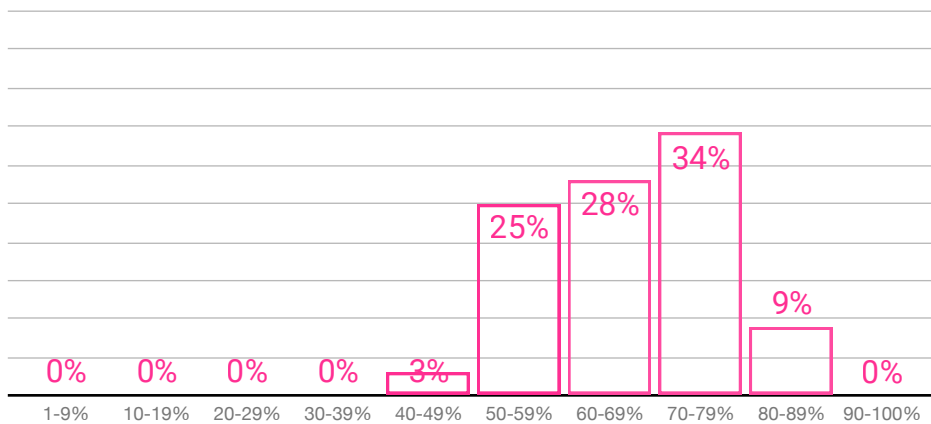
Model fit averages as they correlate to performance:

Far above target: **61%**

Above target: **53%**

Meeting targets: **52%**

Model's impact on following classes:



Distribution:

3% of the class has a model fit less than 50%.

25% of the of the class has an average model fit (50% to 59%).

72% of the class has a model fit greater than 60%.

Model fit averages as they correlate to performance:

Far above target: **80%**

Above target: **70%**

Meeting targets: **72%**

The correlation between AssessFirst's model fit and performance is .24 ($p < .01$). This significant impact is moderated by the fact that students recruited into the EGP program have, at minimum, average performance. This also enhances the test's predictive ability for success in the program.

Diversity index.



Using the model as an aid during the selection process, the risk of recruiting people who are similar in terms of psychological characteristics is limited to 22% of the criteria assessed. The model therefore leaves room for **78% diversity** among the people recruited.

Another factor increasing diversity: by using our predictive model as a reference for entries into the EGP, the client expanded their application pool to students from 16b additional institutions.

Conclusion.

The predictive model developed for EGP made it possible to open the program up to students from more diverse backgrounds, while still being able to manage a large flow of applications whom all still met or exceed the expected requirements.

This case is very good example of successfully combining diversity and performance initiatives.

Additionally, two things should be noted regarding this study:

- The importance of updating a model when business strategy and expectations evolve.
- Using a model like the one developed for our client in this case ensures more fairness in the pre-selection process.

Sales Advisors.

Insurance

Context.

A globally recognized French brand present in 64 countries, the client displays a culture centered around the customer, their expectations and needs. The company is built on this mutual confidence and inspiration.

Their sales advisors are the ambassadors for this culture. As a company, great investments are made to ensure the advisors live up to this promise. This includes, among other initiatives, two months of initial training before being sent in to the field.

Diagnosis.

As in most sectors, given the high demande for sales advisors, this role has a significant turnover rate.

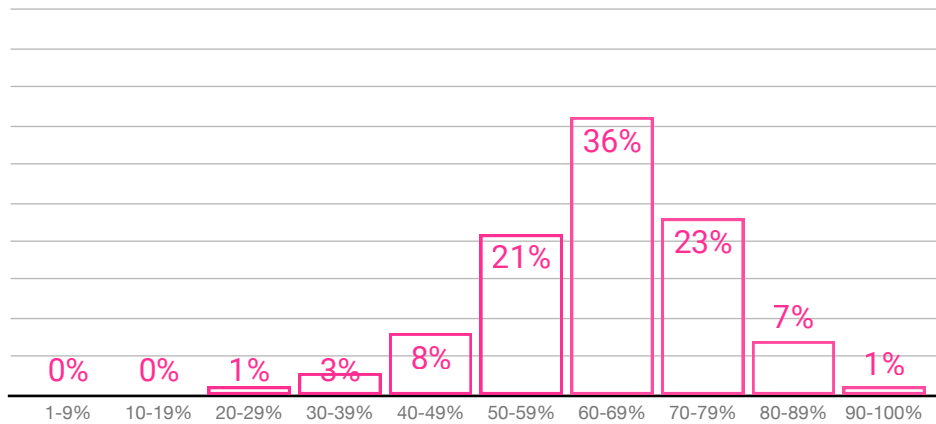
Since the company invests so heavily in recruiting experienced advisors and training them to ensure a maximum level of professionalism, seeing them leave the is then a considerable loss on this investment. The objective is therefore to reduce turnover, particularly when it occurs during the initial months during or soon after training.

Study population.

A total of 326 business advisors were surveyed (152 women and 174 men). Their average age is 35 with a standard deviation of 9 years.

After 12 months, 281 were still employed and 45 had left the company..

Distribution of advisers recruited using the predictive model:



The vast majority (67%) of the advisors recruited have a high model fit, while 21% have an average fit and 12% have a low fit.

This distribution can be explained by the fact that recruiters are free to use the predictive models at their own discretion. However, the recruiter's model and assessment tend to align.

Methodology.

We conducted our study by comparing advisors still in the company and those who had left.

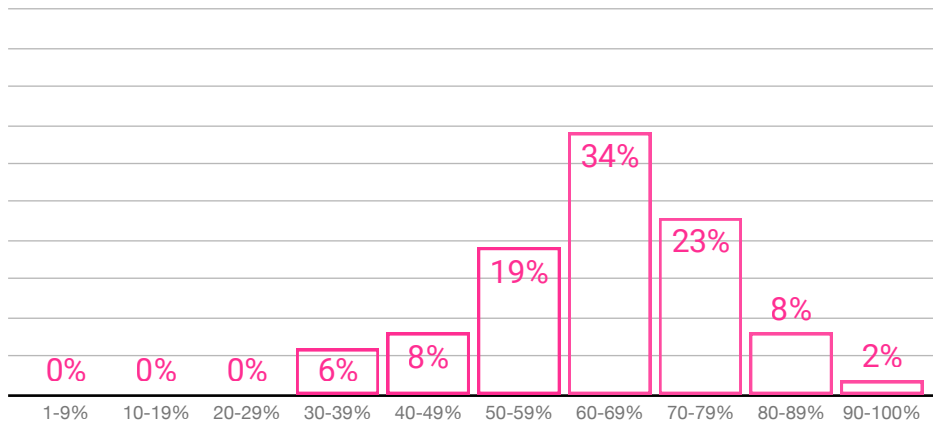
Our analysis revealed a significant impact with 8 personality traits (SHAPE), 8 motivational factors (DRIVE). Reasoning does not appear to be a variable determinant of employee retention - this could be explained by a strong homogeneity in the study sample's reasoning, due to the availability of this information during selection.

These 16 characteristics were consolidated into a single predictive model.

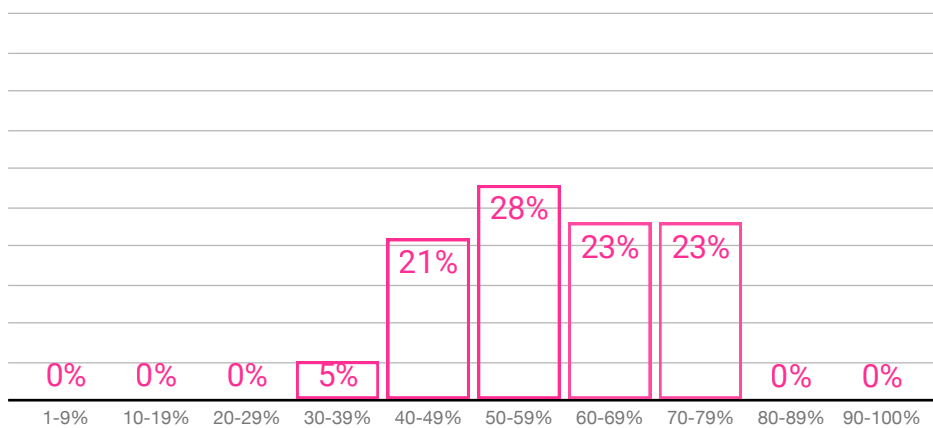
Results.

In order to measure the predictive validity of the model, we studied the distribution of model fit on a test sample (n = 64) between the those still in the company and those who left the company.

Distribution of people still in the role:



Distribution of people who left the company:



In summary:

Average turnover = **14%**

Turnover of those with a weak fit to AssessFirst's model (<60%) = **20%**

Turnover of those with a strong fit to AssessFirst's model (>60%) = **10%**

Diversity index.



Using the model as an aid during the selection process, the risk of recruiting people who are similar in terms of psychological characteristics is limited to 25% of the criteria assessed. The model therefore leaves room for **75% diversity** among the people recruited.

Conclusion.

The predictive model developed to identify candidates who are most likely to stay in the company allows a significant drop in turnover. When regarding the model, the turnover rate would be halved.

As our graphs showed, it is possible to maintain one's role while having a low model fit. Conversely, it is also possible to see people with a high model fit leave the company. This can give recruiters the notion that it is irrelevant to consult the algorithmic models recommendations. That being said, we find that these decisions made without consulting the model are far riskier, as they contribute to more failure in hiring, notably turnover. These decisions should therefore to be measured against this observation.

Sales Manager.

Retail

Context.

A department store with an international network, this company enjoys a renowned reputation for offering a wide range of products to individuals.

The majority of staff and recruitments are focused on the sales force: cashiers, receptionist, salespeople, sales managers.

Diagnosis.

Recruitment advertisements generate a massive flow of candidates: around 10,000 applications per year for the Parisian store alone. Traditionally, these applications are analyzed by examine the CV, sometimes the accompanying cover letter as well.

The limits of this system for recruitment are felt on several levels: many candidates that make it to the interview stage are ultimately not qualified for the position (on average there are 6 candidates met per position), their previous experience is not very predictive of future success in this company and role, as well as a high number who are recruited but ultimately leave during their first few months on the job (17%).

The objective was then to build a pre-selection system that has more predictive ability and could:

- Save time preselecting applicants.
- Improve the rate of candidates recruited / candidates met.
- Decrease turnover

Study population.

The sample study is divided into 4 categories:

- Sales managers (n = 51)
- Sales people (n = 186)

- Reception staff (n = 43)
- Cashiers (n = 60)

To assess the quality of these recruitments, we used 3 criteria:

- Passing the trial period
- Data collected during annual evaluation interviews (rating 9 skills).
- Achieving objectives (for sales managers)

Methodology.

We built a predictive model for each role by analyzing the link between personality and job success. As the sample size was small, we looked for possible transpositions from one group to another (trends that were reinforced across roles).

This analysis allowed us to identify the personality traits needed to build the predictive models.

An example of the link between personality and skills:

	C1	C2	C3	C4	C5	C6	C7	C8	C9
Assertiveness		●	●		●		●		
Diplomacy	●	●			●	●		●	●
Openess		●	●					●	●
Questioning									●
Consult others									●
Varied tasks						●			●
Inventiveness		●	●	●	●	●			
Organisation				●		●	●		
Eye for detail	●			●					
Takes initiative	●	●	●		●	●			●
Controls emotions			●		●	●		●	●
Stability			●			●			●

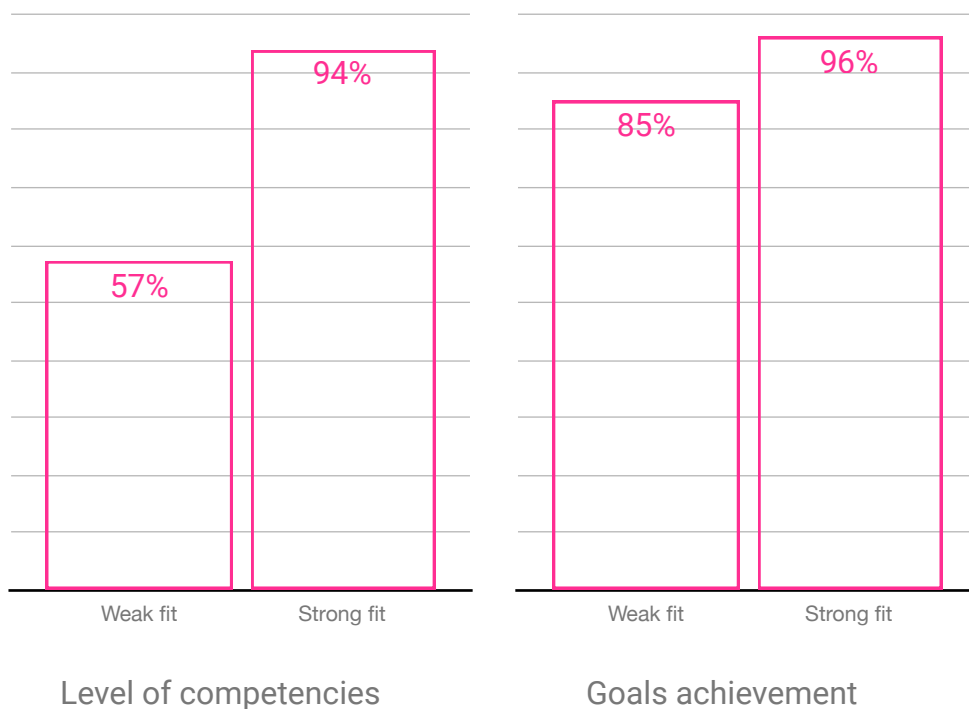
- Positive correlation (p<0.01)
- Negative correlation (p<0.01)

- C1 - PASSIONATE WITH CUSTOMERS
- C2 - DESIRE TO INNOVATE
- C3 - STRIVES FOR EXCELLENCE
- C4 - COLLECTIVE ENGAGEMENT
- C5 - MERCHANDISING
- C6 - ORGANIZING / PLANNING , FOLLOWUP AND MANAGE
- C7 - PREVENT AND MANAGE CONFLICT
- C8 - WELCOMING CLIENTST
- C9 - COMMERCIAL POLICY

Results.

As the initial models were established on the basis of job profiles, they did not take into account the results of those people who did not pass their trial period and were let go. Candidates' fit to the model was therefore one indicator among others for recruiters, meaning they recruited both candidates with strong matches (> 50%) as well as candidates with weak matches (<50%).

Results obtained by people recruited:



Evolution of turnover

Rate of failed trial periods (before predictive recruitment): **17%**

Rate of failed trial periods (after predictive recruitment): **9%**

Speed of recruitment

Average duration of a recruitment (before predictive recruitment): **45 days**

Average duration of a recruitment (after predictive recruitment):
30 days

Quality of candidates accepted in interviews

Average number of candidates met per recruit (before predictive recruitment): **6**

Average number of candidates met per recruit (after predictive recruitment): **3**

Conclusion.

The predictive models had beneficial effects at all levels of recruitment:

- By quickly identifying candidates with high potential for success, recruiters have seen the quality double for the profiles encountered during interviews.
- This had a positive impact on the recruitment timeline which decreased from 45 days to 30 days.
- The people recruited had their trial period validated at a rate of 91%, which reduced the initial failure rate by almost 50%.
- Once the trial period was validated, people with a high model fit were rated with higher abilities and more achievement than people with a low fit.

Technical profiles.

Fashion

Context.

The company is a radical fashion brand. Originally from England, it is now distributed all over the world.

Each country is independent in the way they recruit and manage their staff. There is a strong company culture, so one requirement is identifying the ability of candidates to integrate before actually joining the team. AssessFirst was chosen with this in mind, and with the desire to apply it to every profile in the company.

Diagnosis.

It is more rare to see technical profiles targeted by a soft-skills assessment during recruitment. Companies typically prioritize their hard skills. However, recruitment failures in technical profiles are largely explained by behavioral misalignment.

In the present case, failures in recruit technical profiles linked to this behavioral gap was around 30%. The objective was therefore to reduce this rate.

Study population.

The population studied can be qualified as "technical profiles", as they all belong to the IT and Data department of the brand's Russian division.

The population presented in the results includes 176 people recruited in 2020, from whom we have enough hindsight to say whether their trial period has been validated or not.

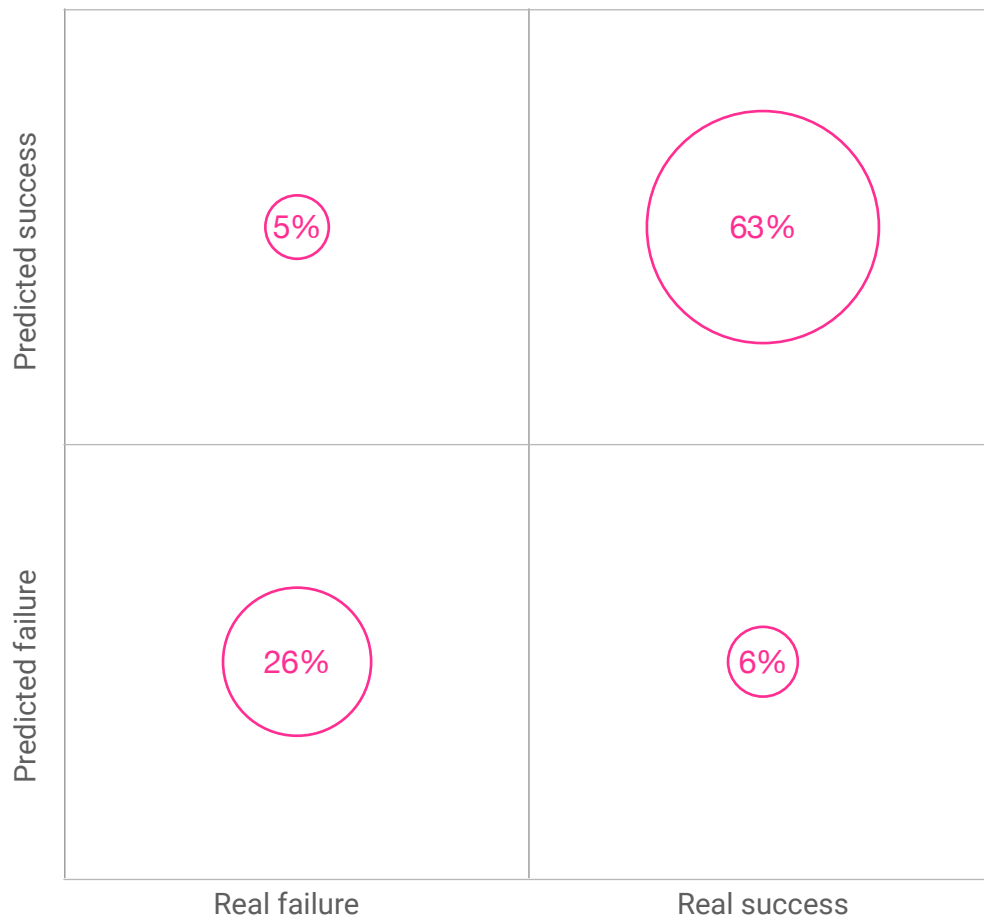
Methodology.

Initially, the predictive model was built using a data-human mix. The person in charge of IT recruiting asked a sample of about 30 people deemed “successful” to complete the AssessFirst questionnaires. Thanks to the artificial intelligence module, they identified the distinctive characteristics of this sample and created a first model. They then reworked the model by integrating elements of the scientific literature referring to an entrepreneurial temperament. Finally, they validated the consistency of this model with the company culture.

This work in 3 part gave rise to a predictive model made up of 9 personality traits and 7 motivational factors. As this model was still being validated from a scientific point of view, recruiters initially focused on viewing it as additional information, without basing their decision solely on the fit score. They therefore recruited people with both strong and weak fit to the model.

Results.

Here is the matrix that crosses the model’s prediction and what happened in reality for 176 candidates recruited before the model was created.



The model's prediction was therefore correct for 89% of the people recruited:

- Predicted success was confirmed for 63% of recruits.
- Predicted failure was confirmed for 26% of recruits.
- Predicted failure turned out to be a mistake for 6% of recruits.
- Predicted success turned out to be a mistake for 5% of recruits.

Conclusion.

The model's exceptionally low margin of error (10.7%) allowed the client to cut recruitment failures due to cultural fit by 3 times.

Field Sales Rep.

Industrial

Context.

The company is a major European player in chemical supply, consumables and professional tools.

The study focuses on their field sales representatives, who represent two-thirds of the workforce. It is a difficult target to attract and keep because the market is under strain. Of particular interest here is that we carried out longitudinal work over a period spanning five years (2014-2019).

Diagnosis.

The main objective behind the study was the turnover rate of new salespeople, which had risen to 51% just 12 months after recruitment. Less than half of the recruited (and trained) profiles remained after one year.

The secondary objective for these sales profiles was to maximize their sales performance.

Study population.

The first modeling concerns a sample of 276 people (96 women and 180 men) with an average age of 36.5 and a standard deviation of 9 years. The average seniority in the role is 5.3 years with a standard deviation of 5.5 years.

25 performance indicators were investigated in order to identify the determinants of commercial performance. For each of these indicators, we obtained the data by month. Some examples:

- Turnover (in €)
- Achievement of objectives (in%)
- Number of new customers (gross value)
- New customer turnover (in €)

- Number of monthly meetings (gross value)
- Number of meetings per order (ratio)
- ...

In 2015, the sample consisted of 177 people, of whom 150 are still in the role.

In 2016, the sample consisted of 361 people, including 242 still in in the role.

In 2017 the sample exceeded 600 people combined...

Methodology.

The statistical study work began with cleaning the data and neutralizing spurious effects.

Seniority has a positive impact on turnover (.36) and the number of sales orders (.39). We noted that this effect is greater among salespeople categorized as “good” compared to salespeople categorized as “bad” (see table below). This means that successful profiles can benefit more quickly from the experience gained within the company. With regard to the development of the client portfolio, the effect of seniority is negative: the longer the sales reps have been in post, the less they develop their portfolio. It’s not ground breaking, but it was important to note it to neutralize this effect in analyzing the impact of personality and motivations.

Correlation between seniority and commercial success:

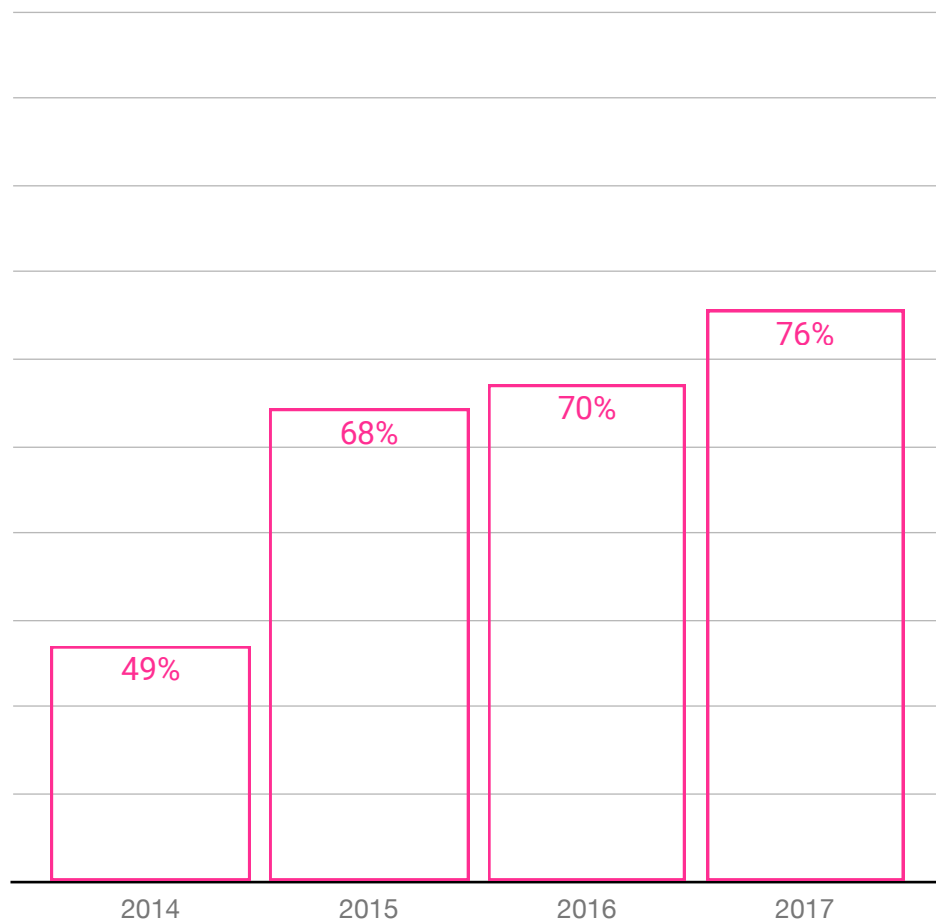
	Sales revenue	Orders per day
Average	0,36	0,39
Bad	0,34	0,36
Good	0,43	0,51

We then carry out a set of linear regressions, logistic regressions, in order to identify the individual characteristics linked to job success.

Finally, we followed the people recruited and carried out an annual update of the predictive model with two objectives: to maximize its predictive power and to ensure that it remains adapted to the evolution of their practice (example: evolution of “traditional” work towards e-commerce).

Results.

First, here is the evolution of sales rep retention 12 months after their recruitment:



The turnover has therefore been halved in 4 years, going from 51% to 24%.

Regarding sales performance, here is the link between the personality traits present in the predictive model and the performance indicators selected:

	1	2	3	4	5	6	7
Assertiveness							
Sociability			●			●	
Openess				●			
Questioning						●	●
Abstract Ideas					●		●
Inventiveness							
Perseverance		●					
Initiative	●		●				
Optimism						●	
Stability							

- Positive correlations ($p < 0.01$)
- Negative correlations ($p < 0.01$)

- 1 - Sales revenue
- 2 - Achieving objectives
- 3 - Number of meetings for an order
- 4 - New customer sales revenue
- 5 - Client orders at 6 months
- 6 - Sales revenue for E-Commerce
- 7 - Client orders at 12 months

As we can see with the personality trait “Questioning”, we are sometimes in a situation where a personal characteristic favors the development of one aspect of performance to the detriment of another. We simply made sure to build the predictive model with dimensions that ensure maximum retention while being beneficial overall for business performance.

Conclusion

After a 5-year follow-up and the observation that turnover had been halved, we can see the value of such a study’s capacity to push the predictive validity of the tests to their best level.

About AssessFirst

AssessFirst has developed a predictive recruitment solution allowing companies to predict how well candidates and employees will succeed and thrive in their job. The AssessFirst solution analyses data on over 5,000,000 profiles, whether candidates, employees or recruitment professionals.

Today, over 3,500 companies use the AssessFirst solution to raise their performance by up to 25%, drive down their recruitment costs by 20% and reduce their employee turnover rate by 50%.

Find out more: www.assessfirst.com

