JOBFIDENCE®

Scientific quality criteria

24th Revision of the Jobfidence® Measurement Procedure

24th Revision of the Jobfidence® Measurement Procedure: scientific quality criteria

teme is indebted to clients and university chairs for their collaboration on the various projects which have made possible the continuous improvement and regular examination of the quality criteria, especially the validity.

I. Objectivity

The independence of the measurement results from the test-administrator is guaranteed by the design of the procedure:

- "by-the-book" operation,
- standardised administration and scoring instructions (paper-pencil) or automatic administration and scoring (PC-version),
- binding rules of interpretation,
- annual obligatory schooling and
- regular supervision and audits.

II. Accuracy of measurement (reliability)

The reliability is proven by the calculation of internal consistency (Cronbach Alpha) and also through repeated measurements (test-retest reliability). The Cronbach Alpha values and the test-retest correlations, all of which are highly significant, exceed the required minimum value of r = .70.

Cronbach Alpha revision 2024 N = 10,221	Correlation r test-retest 2024 [1] N = 130	Measurement area
AdI: .85	AdI: .85	Adaptive intelligence
AnI: .82	AnI: .79	Analytical intelligence
Flx: .81	Flx: .79	Flexibility
MtP: .79	MtP: .73	Motivation to perform
SSt: .84	SSt: .76	Stress stability
PpG: .85	PpG: .77	Persistence in pursuing goals

1) The time interval between the first and second Jobfidence® measurement was at least 3 and at most 24 months.

III. Validity

The correlations between success criteria and the respective Jobfidence® recommendation normally lie between r = .41 and r = .77, depending on the type of activity and the external success criteria available (fulfilment of targets, income level, appraisal by superiors, commission).
In the case of narrowly defined activity fields and highly accurate success measurement, correlations between r = .68 and r = .77 are attained.[1)]

Seven detailed studies of predictive criterion validity were carried out:

Branch / year of study (size of sample group)	**Success criterion**	**Validity coefficient**
sales / capital goods 1991 (N = 66)	• fulfilment of sales targets	.53 [2)]
sales / capital goods 1992 (N = 48)	• fulfilment of sales targets	.56 [2)]
credit consultant / bank 1993 (N = 97)	• income level • appraisal by superiors 2 years after completion of the apprenticeship training	.44 .50
sales / insurance 1996 (N = 35)	• commission per year • contracts per year	.68 [2)] .77 [2)]
sales / financial services products 2005 (N = 88)	• average annual production value of employees with several years experience in sales	.41
relationship management / private banking 2007 (N = 97)	• performance appraisals by supervisors	.64
relationship management / private banking 2010 (N = 108) [3)]	• performance appraisals by supervisors	.75

1) All correlations are highly significant.

2) Comparisons of mean values show that the success indicators of recommended employees are on average twice as high as those of non-recommended.

3) In the validity study 2010, the overall Jobfidence® recommendations as well as the behaviour prognoses of the Jobfidence® Measurement Procedure were examined as to their validity. The total sample group consisted of 139 employees. In order to compare the performance appraisals provided by the respective supervisors with the Jobfidence® recommendations, only such cases were used as could clearly be categorised as "low performers" or "(high) performers". The third category "in-between" was excluded from this analysis. As a result the sample group was reduced to 108 cases.

Besides these criterion-based validations, five further evaluative approaches were pursued.

In 1992 a financial consulting company made possible an investigation about the connection between individual Jobfidence® results and **fluctuation** in sales positions. 73 candidates took part in the Jobfidence® Measurement Procedure. All of them were employed, regardless of aptitude. The drop out rate after three years was only 16% for the suitable candidates but 42% for the unsuitable. A more thorough investigation, e.g. of their motive for dropping out, was not possible because the necessary data was not available.

In 1996 the connection between the Jobfidence® measurement scores and **final marks** of 89 participants in an internal education programme in a public administrative body was examined. A clear relation was demonstrated between Jobfidence® profiles unfavourable for educational success[1)] and the final mark.

Mark	Number of candidates	Number of unfavourable prognoses
2 or better	6	1 (17%)
2-	12	3 (25%)
3+	18	6 (33%)
3	20	7 (35%)
3-	16	5 (31%)
4+	15	11 (73%)
4	2	2 (100%)

While marking tends to be subjective, the validity of the prognoses can be seen in the relation of unfavourable prognoses to the respective marks: the worse the candidates' final mark, the higher the percentage of candidates with an unfavourable prognosis.

[1)] It is known from earlier experiences in numerous apprenticeship fields (banks, insurance companies, trade etc.) that a negative difference between adaptive intelligence and analytical intelligence (the percentile ranks obtained in adaptive intelligence are at least 20 percentile ranks lower than those obtained in analytical intelligence) constitutes an unfavourable prognosis for educational success. This risk is further intensified when the difference appears in combination with extremely high flexibility (superficial learning style), extreme function-orientation (lacking or selective involvement) or extreme result-orientation (impatient learning, failure to bother with systematic repetition).

A further approach was an **examination of the "hit rate"**:

- In 1992 the hit rate in the selection of junior investment consultants was examined. 13 people were employed, 6 of whom had favourable and 7 of whom had less favourable Jobfidence® results. The measurement scores were not given to their superiors so as to avoid influencing the investigation results by positive or negative expectations. After 12 months (July 1993) the following could be established:
  The 6 consultants who had a positive prognosis had been successful in their position. One of them had meanwhile been contracted away to a higher-paid sales position in the parent company. Of the 7 consultants with negative prognoses, 5 had been dismissed. Only two had been able to fulfil their tasks satisfactorily. This corresponds to a forecasting **"hit rate"** of **11 : 2 (84.6 %)**.
- In 2003 another opportunity to check the hit rate arose, this time in predicting car salespeople's success in apprenticeship and sales. From a large Austrian car dealer, 18 candidates for the final exam to become a certified car salesperson participated in Jobfidence®. All those candidates who were classified by the apprenticeship master as clearly above or clearly under average were included in the calculations of the hit rate[1)]. The apprenticeship master had no clear classification for 5 of the candidates at the time of the investigation.
  Result: none of the 3 classified poor performers would have received a Jobfidence® recommendation. Of the 10 classified good performers, 7 would have been recommended and 3 would not.
  This means that the performance of **10 out of 13** candidates was correctly predicted, corresponding to a **hit rate of 76.9 %**. This hit rate probably underestimates the procedure's real predicting power because Jobfidence®'s ability to identify poor performers would be seen far more clearly in a non pre-selected sample (with a higher proportion of poor performers).
- In 2010 the supervisors' performance appraisals for 108 relationship managers in private banking were obtained within the framework of a personnel development project in a banking institute. These performance appraisals[2)] were compared with the Jobfidence® based potential ratings "favourable achievement prerequisites for the position" vs. "less favourable achievement prerequisites for the position". The **hit rate** – recommendation of a (high) performer, rejection of a low performer – was **88 %** in the case investigated (95 of 108). The percentage of incorrect classifications of low performers as (high) performers was 10% (4 of 40). The percentage of incorrect classifications of (high) performers as low performers was 13.2% (9 of 68).

[1)] The performance evaluation was based on results from test sales, fulfilment of targets and results in the apprenticeship programme.

[2)] "Low performer" vs. "(high) performer"

In 2010 there was a first opportunity to validate the **behaviour prognoses**[1)] of the Jobfidence® Measurement Procedure systematically with a relatively large sample group (N = 139, relationship management / private banking). The prognoses based on the four behaviour-related measurement areas were subjected to a qualitative investigation.

To this end, extreme measurement scores and combinations of such were "translated" into distinguishing characteristics for the dispositions in the sense of both strengths and behavioural risks (according to the specifications of the Jobfidence® handbook). This made it possible to investigate whether the predicted behavioural dispositions were reflected in the observable work behaviour reported by the supervisors.

The relationship between the Jobfidence® behaviour prognoses and the supervisors' performance appraisals were categorised as follows:

+ 1 = correspondence between the Jobfidence® description of strengths / risks and the supervisor's description of behaviour
- 1 = contradiction between the Jobfidence® description of strengths / risks and the supervisor's description of behaviour
0 = lack of information to assess correspondence (neither corresponding nor contradictory behaviour descriptions)

Result:
In total, **352 instances of correspondence and only 8 of contradiction between Jobfidence® behaviour prognoses and supervisors' performance appraisals** were found. In 206 cases it was not possible to find either correspondence or contradiction. The far greater degree of correspondence in comparison to contradiction proved highly significant.

Thereby, the Jobfidence® predictions of behaviour-related strengths proved just as valid as the Jobfidence® predictions of behaviour-related risks.

[1)] The intelligence-related measurement areas 'adaptive intelligence' and 'analytical intelligence' were not taken into account in this investigation. The analysis of the interview records showed that the supervisors' perceptions in relation to cognitive achievement criteria depended strongly on their own cognitive potential.

The data from the study in 2010 were also used to carry out a **cost/benefit analysis of the Jobfidence® Measurement Procedure**. This was performed with the 'Brogden-Cronbach-Gleser' model, appropriate for such analyses. According to the results, using the measurement procedure instead of selecting new employees without Jobfidence® would bring the enterprise **benefits worth about EUR 6.7 million** in the 10 following years.

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