

# **Predicting career decisions through combining personality and competencies**

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## SUMMARY

The Big Five model is an adequate personality descriptive model to use in work situations. From extended research on the correlates of Big Five personality descriptions, it is now known that about 50 % of differences between individuals on the Big Five factors may be attributed to genetic factors. Therefore, taking into account a persons standing on the Big Five factors is of utmost importance when one wants to manage or to change career outcomes that depend on those factors.

A personality profile may be mapped onto organizational competencies. Within “performance goal” contexts not so much the personality profile in isolation is the relevant information but in particular the extent to which it predicts relevant performance criteria within a job. Behaviors that predict performance criteria are generally referred to as “competencies”. Given a specific personality profile an estimate can be made of the ease with which a person may be expected to develop that competency further. So, a personality profile does not assess the actual competency but estimates only the development potential.

It is hypothesized that in work situations a person will show more often the competencies that are supported by his personality profile than the competencies that are not supported by that profile. A second hypothesis is that the more work experience a person has, the more he will choose jobs which fit with the competencies that are supported by his personality profile. Therefore, persons with of lot of work experience will show such supported competencies more than persons with little work experiences.

In the study presented here 848 persons working in different jobs, branches, and organizations filled in a Big Five questionnaire and got multi-rater feedback on their competencies. The estimation of the development potential of the competencies based on their personality profile is compared with their actual competency scores in their work situation.

The study presents data to support the hypothesis that in work situations persons generally score higher on competencies that match with their personality profile than on competencies that do not match with their profile. Also support is presented for the second hypothesis that persons with a lot of work experience are relatively more often working in jobs that require competencies that match with their personality than persons with less work experience.

# Predicting career decisions through combining personality and competencies

## INTRODUCTION

Career decisions of individuals depend, among other factors, on the extent to which they get the opportunity to use competencies they have acquired during their life so far. At the same time, working in a job is an opportunity in its own right to develop competencies further. The development potential of specific competencies may be predicted from an individual's personality profile, as with an extrovert who might be expected to develop the competency "networking" with more ease than an introvert.

The present study investigates support for the hypothesis that persons will tend to choose jobs that demand competencies which are supported by their personality. Furthermore, the additional hypothesis is studied that persons will be more inclined to do so the more work experience they already have. In fact, supporting the notion that people gradually funnel themselves into careers that fit with their personality as a stable base. Thus growing into who they are, so to speak, instead of into who they aspire to be.

For measuring personality in the present context, the Big Five model is appropriate. Based upon a decennia long tradition in personality research, the so-called Big Five personality model stands out now as the central paradigm for describing the personality of normal individuals (Mount & Barrick, 1991). Large scale psychometric analyses on rating data (both self ratings and rating by others) on mostly personality descriptive adjectives justify the generalization that in both the self rating and the other rating domain the following five factors give an efficient account of the main structure of the way people describe their own and each others personalities:

- Need for stability (N)
- Extraversion (E)
- Openness (O)
- Accommodation (A)
- Conscientiousness (C)

Because this structure is based on mostly exploratory factor analytic research, it provides in itself no causal account of the way people develop themselves from early youth into adult personality. On the other hand, there is ample evidence that adult personality as described with the Big Five model refers to a stable set of five individual differences variables.

For application purposes this implies that the Big Five model is an adequate personality descriptive model to use in all situations where the way an adult person describes his or her own personality or is described by his or her environment determines relevant life outcomes. One may think of: marital choices, vocational preferences, predicted fitness for a job, adequacy of interacting with others, etc.

From extended research on the correlates of Big Five personality descriptions, it is now known that about 50 % of differences between individuals on the Big Five factors may be attributed to genetic factors, and still another 25 % to early in lifetime socializing experiences (Zuckerman, 1991). So, the stability of a persons Big Five personality profile in adulthood may not be surprising after all. And of course, the same arguments go for life outcomes that are correlated with that profile. Therefore, taking into account a persons standing on the Big Five factors is of utmost importance when one wants to manage or to change life outcomes that depend on those factors.

In order to collect information about the performance of persons in practice often multi-rater feedback on competencies is used. Evidence for the validity of multi source ratings to predict performance is broadly considered and includes research comparing multi source ratings with assessment center performance, annual appraisals, objective performance data, and the satisfaction and turnover intentions of subordinates. Smither, London & Reilly (2005) give an overview of this research. By using multi rater feedback a potential problem that could arise is the conceptual disagreement that might occur between rater sources. Scullen, Mount and Judge (2003) found that raters from all perspectives attended to a similar set of core performance factors. Birkeland, Borman, and Brannick (2003) studied the personal work constructs by subordinates, incumbents and supervisors and found that source effect were small. They concluded that conceptualization of job performance do not vary substantially by level. In sum, recent research has shown that raters in different roles share a common conceptualization of performance dimensions.

In recent years, interest in personality measurement has increased within HRM consultancy practice, especially based on studies demonstrating that personality variables predict performance across a diverse array of occupational groups (Barrick & mount, 1991; Hough, Eaton, Dunnette, Kamp & McCloy, 1990; Tett, Jackson & Rothstein, 1991). Measures of personality factors have shown to predict task performance, contextual performance and a variety of outcomes related to adaptive social functioning. Furthermore, these studies suggest that more attention should be given to studying the lower-order facets of the Big Five personality factors. Hough and colleagues (1990) have argued that an adequate personality taxonomy at the facet level is critical to the understanding of the relations between personality variables and criteria of interest to industrial/organizational psychologists and, in particular, that research at the Big Five level may obscure importance differences in the way personality facets may relate differentially to such criteria.

Therefore, in the present study, a personality profile at the level of facets is mapped onto organizational competencies. Within "performance goal" contexts not so much the personality profile in isolation is the relevant information but in particular the extent to which it predicts relevant performance criteria within a job. Behaviors that predict performance criteria are generally referred to as "competencies". Given a specific personality profile an estimate can be made of the ease with which a person may be expected to develop that competency

further. So, a personality profile does not assess the actual competency but estimates only the development potential.

With a multi rater feedback instrument the actual level of competencies as is it shown in daily practice is measured.

In line with the more general hypothesis that people tend to funnel themselves into careers that demand competencies supported by their personalities, it is hypothesized here that in work situations a person will show a higher level on those competencies that are supported by his personality profile than on competencies that are not supported by this profile. From the same line of argument, a second hypothesis is derived, stating that the more work experience a person has, the more he will work in jobs which fit with the competencies that are supported by his personality profile. Therefore, persons with of lot of work experience will show supported competencies more than persons with little work experiences.

## *PARTICIPANTS*

A sample of 848 individuals is used in this study. The participants are selected out of a large database of a HRM-consultancy company. All the participants have completed a personality questionnaire and a multi-rater feedback instrument as part of an individual development program. The participants are working in different jobs, branches and organizations. Forty percent of them work in an ICT-company. Most participants have a university or college degree whereas the rest has a comparable educational and/or experience level. On average, on the moment of assessment they had been working for about 2.5 years in their actual job. Participants' ages ranged from 21 to 62 years. The mean age is 39 years. Participants' work experience ranged from 1 to 40 years. The median is 13 years. Thirty percent of the participants is female. All participants have completed the Workplace Big Five personality questionnaire and the multi-rater instrument Reflector in a personal development context in the years 2001 –2005. These instruments will be described below.

## *MEASURES*

### ***Personality***

For the Big Five domain a well known and thoroughly researched questionnaire is the NEO PI-R, constructed by Costa and McCrae (1997). This questionnaire has a good theoretical and empirical foundation and also has found widespread application in assessment practice. It represents the personality of a respondent on both the Big Five main factors as well as on a number of contributing facets subsumed under each of these factors.

The NEO might be conceived of then as an important standard for measuring the Big Five personality factors in the questionnaire domain. The instrument described here, the Workplace Big Five, has therefore taken the NEO as the baseline upon which it has been constructed. The Workplace Big Five is a questionnaire especially designed for measuring personality at the workplace. The instrument described here explicitly restricts itself to behavior of people when they are “at work”. That is not to say that it only refers to behavior in formal organizational contexts, but to all task contexts in which a “performance goal” is leading, be it paid or unpaid, work or leisure time (chairman of your bridge association, for instance). In practice, however, the predominant domain of use will be as an instrument supporting organizational HR practices like selection, training or career guidance.

The instrument measures 24 personality-facets divided over the Big Five factors

- Need for stability (N)
- Extraversion (E)
- Openness (O)
- Accommodation (A)
- Conscientiousness (C).

For more detailed information about the facets see appendix 1.

A special feature of the Workplace Big Five is the way it maps the resulting personality profile onto organizational competencies, because – as noted above – within “performance goals” contexts not the personality profile in isolation but rather the estimated development potential of competencies is the real issue.

Appendix 4 contains the standard set of competencies the organizations from which the present data set has been sampled use in their performance management. For each of these competencies, the report of the Workplace Big Five gives an estimate of the ease with which the respondent may be expected to develop that competency further given his specific personality profile. So, it does not assess the actual competency but estimates only the development potential.

For a single competency, the estimate of the easiness with which it can be developed further is computed through linearly combining the obtained scores on a small set of facets out of the total set of facets of the questionnaire. This set and the used weights have been specifically selected for that competency. In the same way, for each other competency of the set a unique set of facets and accompanying weights have been selected to compute the proper estimate for that competency. A development easiness estimate is calculated for each competency in the form of a T-score (i.e., a standard score with a mean of 50 and a standard deviation of 10) that refers to same norm group as has been used in computing T-scores on the main factors and facets.(For more detailed information: see Appendix 2).

The participants receive there personality questionnaire by email. With a hyperlink in the email the participant goes to an unique personal online personality questionnaire. When the

questionnaire is completed the answers are sent online to a central database. Their personal report is automatically generated and is sent by email to the participant.

### **Competencies**

To assess the competencies of a candidate a multi-rater feedback instrument is used, the Reflector (see Appendix 3). The assessment is based on a set of competencies which are relevant for the role of the candidate. The set is defined by the organization where the candidate is working. This set of competencies is deemed necessary to deliver the desired performance in the role. Generally the set for a candidate contains 8 to 12 competencies out of a complete set of 43 competencies. This total set of 43 is given in Appendix 4.

The multi-rater feedback instrument is sent by email. In the email the participant clicks on a hyperlink and goes to a page where he can fill in the names and emails of his respondents. He can choose supervisors, colleagues, subordinates or customers as respondents. The participant himself and the respondents receive automatically a questionnaire by email with a hyperlink to a personal online questionnaire. The participant can monitor the response and remind respondents to complete the questionnaire. The answers of the respondents are sent to a central database. When all the respondents have completed their questionnaires the participant receives automatically by email his personal feedback report.

## *DATA-ANALYSIS*

The calculation of development potential per competency is based on a person's personality profile. For each participant, the development potential (T-score) for each of the total set of 43 competencies is calculated by a linear combination of his scores on the personality facets. Furthermore, for each participant it has been registered which competencies out of the total set of 43 competencies belong to the competency profile of his actual job.

The actual performance of a participant on the competencies is based on the opinion of the respondents in his working environment. They assess the participant through evaluating behavioral examples on a Likert scale running from 1 to 5. The actual performance score is the mean score of all respondents on this scale.

The fit between development potential and actual performance on a particular competency – which is in fact a predictive validity measure – is calculated by correlating the T-scores on development potential based upon the Workplace Big Five scores and the mean actual performance scores of all respondents.

Analysis of variance is used to examine the effect of work experience and relevance of the competency in the actual job on development potential. Effect size (Cohen's *d*) is used as an index to assess the magnitude of work experience effect on development potential.

The participants are split into two groups; one group with little or medium work experience, (age equal or less than 35 years) and one group with much work experience (age 36 years and older).

## *RESULTS*

### *Validity development potential and actual performance*

The estimation of the development potential of competencies of participants based on their personality profile measured through the Workplace Big Five is compared with their actual competency score in their work situation.

The actual competency score is the mean score of all the ratings of the respondents measured through the multi rater instrument, Reflector. The self score on Reflector is excluded from the analyses.

Table 1 gives the correlations for the 43 competencies. The competencies are arranged by correlation size.



Table 1

Correlation between development potential and actual competency score

<b>Competency</b>	<b>correlation</b>	<b>p-value</b>	<b>N</b>
Sociability	.676(**)	0.000	44
Oral presentation	.487(**)	0.000	55
Networking	.473(**)	0.000	297
Sensitivity	.378(**)	0.000	344
Creativity	.353(**)	0.000	396
Initiative	.352(**)	0.000	398
Planning and organizing	.323(**)	0.000	383
Listening	.315(**)	0.000	199
Stress tolerance	.299(**)	0.000	176
Ambition	.287	0.454	9
Vision	.285(**)	0.000	371
Decisiveness	.280(**)	0.000	269
Persuasiveness	.275(**)	0.000	253
Independence	.273(*)	0.033	61
Self-organization	.271(**)	0.004	114
Management control	.262(**)	0.000	322
Problem analysis	.259(**)	0.000	360
Integrity	.259(**)	0.006	111
Tenacity	.247	0.159	34
Delegation	.240(*)	0.018	96
Negotiating	.234(**)	0.000	226
Impact	.230(**)	0.002	172
Results orientation	.221(**)	0.000	583
Entrepreneurship	.212(**)	0.000	363
Quality orientation	.208(**)	0.003	208
Market orientation	.205(**)	0.008	167
Organizational loyalty	.192(**)	0.009	186
Behavioral flexibility	.185(**)	0.001	319
Teamwork	.184(**)	0.000	520
Customer orientation	.174(**)	0.000	425
Written communication	.170(*)	0.036	153
Extra organizational awareness	.165(**)	0.006	275
Coaching	.145(*)	0.014	288
Adaptability	.134	0.054	207
Organizational sensitivity	.121(*)	0.038	293
Oral communication	.093	0.091	331

Learning ability	.080	0.118	385
Leadership	.055	0.444	195
Group leadership	.049	0.456	230
Self-development	.045	0.525	201
Judgment	-.026	0.687	239
Discipline	-.096	0.806	9

\*  $p < .05$  \*\*  $p < .01$ .

As can be seen in Table 1, the number of cases differs per competency. The reason being that the participants have different jobs. Every job has its own competency-profile. Most of the competency-profiles consist of 8 to 15 competencies out of the total set of 43 competencies. Thus, some competencies are often included in a profile, others occasionally. For competencies like sociability, oral presentation, networking, sensitivity, creativity, initiative, planning and organizing and listening, the level of development potential measured with the personality questionnaire correlates medium to high with the actual performance level of the competency in the job. For other competencies like judgment, self-development, (group) leadership no substantial correlation is found between development potential and actual performance on the competency.

#### *Work experience and competencies*

With development potential as a dependent variable and work experience and inclusion of the competency in the actual role profile as independent variables, a two factorial univariate analysis of variance is done for every competency.

Figure 1 shows as an example the univariate analysis of variance with the competency market orientation as the dependent variable.

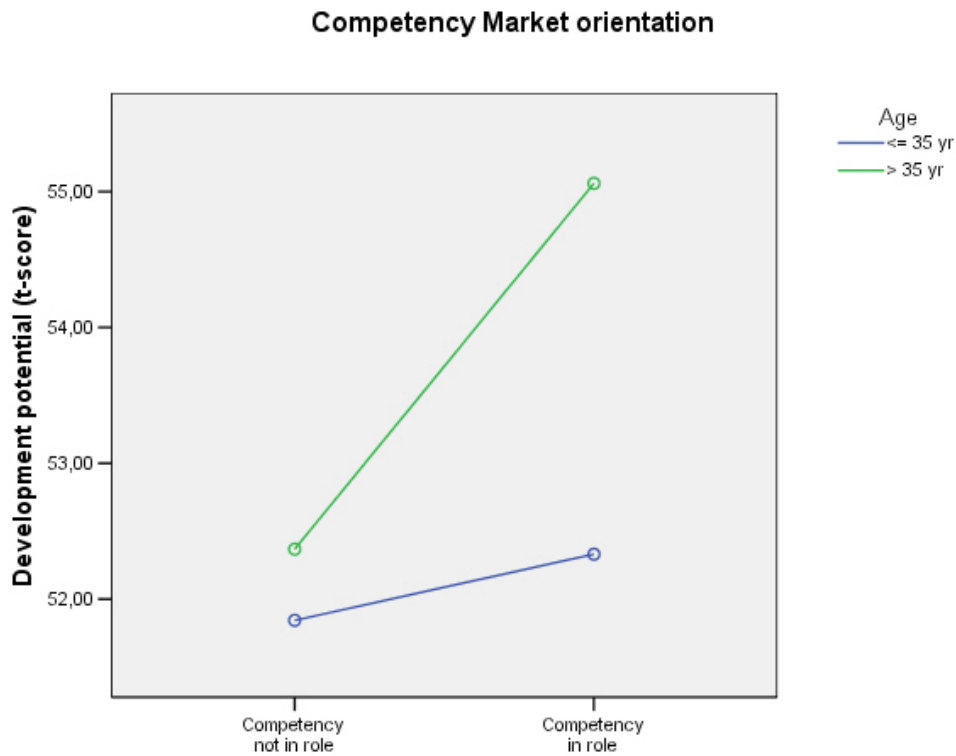


Figure 1: Example of a profile plot. Univariate analyses of the competency market orientation.

This Figure shows an interaction effect of age and inclusion of the competency in the actual role. The effect size, the standardized difference between the two age groups, is calculated by means of Cohen's *d*. The effect size is calculated separately for competencies *included* in the role profile of the person on the one hand and for competencies *not included* in the role profile, on the other (i.e., the factor represented by the horizontal axis in Figure 1). The difference between these two effect sizes indicates the effect size of the interaction effect. A positive number indicates that people with much work experience are relatively often more in roles wherein needed competencies fit with their personality. Table 2 presents these results per competency. The competencies are arranged in the size of the difference representing the interaction effect.

Table 2

*Correlation between development potential and actual performance, effect size (Cohen's d) and difference between effect size per competency for age groups.*

Nr.	Competency	Correlation	Effect Size		Difference
			not in role	in role	
36	Ambition	0.29	-0.12	1.35	1.48
18	Creativity	0.35	-0.27	0.30	0.57
33	Tenacity	0.25	-0.02	0.52	0.54
39	Discipline	-0.10	0.11	0.51	0.40
34	Behavioral flexibility	0.19	-0.12	0.27	0.38
24	Sensitivity	0.38	0.08	0.41	0.33
29	Sociability	0.68	0.04	0.35	0.31
17	Learning ability	0.08	-0.09	0.22	0.30
8	Market orientation	0.21	0.06	0.35	0.29
30	Adaptability	0.13	0.08	0.36	0.27
40	Organizational loyalty	0.19	0.11	0.37	0.26
27	Impact	0.23	-0.05	0.19	0.24
14	Vision	0.29	-0.03	0.18	0.21
35	Initiative	0.35	-0.15	0.04	0.19
41	Results orientation	0.22	-0.35	-0.17	0.19
16	Extra organizational awareness	0.17	0.01	0.19	0.18
4	Delegation	0.24	0.22	0.37	0.15
28	Teamwork	0.18	-0.01	0.10	0.11
5	Planning and organizing	0.32	0.05	0.14	0.10
21	Oral presentation	0.49	0.06	0.16	0.10
23	Listening	0.32	0.31	0.40	0.09
2	Coaching	0.15	0.22	0.30	0.08
38	Integrity	0.26	0.17	0.23	0.06
42	Quality orientation	0.21	-0.06	0.01	0.06
25	Persuasiveness	0.28	0.14	0.16	0.03
11	Problem analysis	0.26	0.13	0.14	0.01
26	Negotiating	0.23	0.19	0.14	-0.05
7	Entrepreneurship	0.21	-0.05	-0.11	-0.06
10	Networking	0.47	-0.02	-0.08	-0.06
22	Written communication	0.17	0.18	0.12	-0.06
37	Self-development	0.05	-0.09	-0.15	-0.07
1	Leadership	0.06	0.00	-0.11	-0.10
13	Decisiveness	0.28	-0.05	-0.15	-0.10

19	Self-organization	0.27	0.17	0.06	-0.11
20	Oral communication	0.09	0.06	-0.06	-0.12
31	Stress tolerance	0.30	0.22	0.06	-0.16
3	Group leadership	0.05	-0.03	-0.20	-0.17
32	Independence	0.27	-0.03	-0.21	-0.18
6	Management control	0.26	0.14	-0.07	-0.21
15	Organizational sensitivity	0.12	0.30	0.09	-0.21
9	Customer orientation	0.17	0.34	0.12	-0.23
12	Judgment	-0.03	0.24	-0.09	-0.33

It has been hypothesized above that the more work experience a person has, the more likely he will work in a job that fits with the competencies that are supported by his personality profile. This implies that persons with a lot of work experience will show supported competencies more than persons with little work experience. This leads to the expectation that competencies showing a high correlation between development potential and actual performance – thus, competencies with the highest predictive validity – will show a larger difference in effect size than competencies with a lower correlation.

As can be computed from Table 2, this expectation is moderately confirmed. The correlation between correlation size and difference in effect size is .19.

## DISCUSSION

The correlations between development potential and actual competency score are positive for 40 out of 43 competencies. This means that in general the actual competency score can be predicted by the personality profile of a person, again corroborating the validity of the Big Five personality model in predicting work performance. The magnitude of the correlations differ over competencies, however, as Table 1 shows. And that should also be expected. Personality is – unlike intelligence – not a “generalized” valid predictor but one should expect that specific combinations of personality facets predict specific competencies. And that is exactly what happens. In fact, half of the validities computed here vary between about .25 and .65. Given the size of the samples there is hardly room for shrinkage, and these validities may therefore be regarded as impressive against the modal figure of .25 which is reported in general when personality questionnaires are used as global predictors. Lending credit to the earlier mentioned hypothesis that validities will profit when descending to the level of facets.

The development potential is computed through linearly combining the obtained scores on a small set of facets out of the total set of facets of the questionnaire (see Appendix 2). These

linear combinations are based on the judgment of experts. The experts are academic researchers, assessment center consultants and HRM-consultants. Their judgment is based on theoretical knowledge and practical experience in using personality in assessing people. In view of the differing correlations, one may ask here whether either the judgments of the experts are insufficiently adequate or that the performance on some competencies is influenced stronger by other variables than personality. Looking into the rank order of the correlations one might conjecture that the competencies with the highest correlations are characterized by behavior that can be expressed by a person in any work context, and therefore do not much depend on specific work situations in which the person operates. Also these competencies are behaviorally less complex than competencies lower in the rank order of correlations like leadership or coaching.

What can be said in general, however, is that the way a person behaves may conceptually be conceived of as contingent upon two determinants. On the one hand, a personal tendency to do so: he simply cannot help to do as he does. This refers to the stable part of personality, as it is also reflected in the intrapersonal consistency of the Big Five. On the other hand, the situation or the "place" in which he finds himself always will elicit specific behaviors which are appropriate given the demand characteristics of that situation. In work situations there is an overarching demand characteristic to deliver a performance. Insofar a person is able to choose between several behavioral alternatives, he will choose the one that he feels most contributes to the performance demanded from him. Persons who do otherwise gradually will be selected out.

The above does not imply that people's basic propensities to behave will change contingent upon the situation in which they find themselves. But it does assert that the "stronger" the demand characteristics of a situation override the personal tendency to behave in a specific way, the more effort a person must exert to conform to these demand characteristics when his natural tendency urges him to behave otherwise. The workplace is not a specific "place" in this respect. In any situation – work, school, at home – some behaviors are more positively rewarded than others. And the structure of personality observations, either through the Big Five model or any other personality model, are in that sense always dependent on a mix of internal urge and external consequences. Interpretation of such observations should take this into account.

Referring to Table 2, the competencies also differ in the extent to which they show the predicted interaction effect. One substantial conjecture might be put forward, however: the competencies with the relatively largest interaction effects – say above .25, which are shown by the upper 11 – are all either temperamentally or cognitively based. And, as is well known and is also argued above, both temperament and cognition are characteristics that are most resistant to change or development attempts because of their relatively strong inbred

background. It should therefore not come as a surprise that the self selection process in choosing careers will show itself to be the strongest with just these competencies.

The present results suggest some relevant issues for follow up research.

First, the competency models used in estimating development potential are based on expert judgments. On the basis of empirical data on competencies shown in practice, especially with people with a long working experience, this models may be refined. Amending “erroneous” expert judgments, so to speak. When applying such refined models in a *replication* of the present research in a *new* sample, still larger effects should be obtained, thus further corroborating the potential predictive power of personality for performance in work contexts under the proviso of the proper level of aggregation (facets) and proper empirically checked models for estimation of development potential.

Second, referring to the remark just made above on the stability of temperament and cognition, one might *rate* the competencies *independently* (empirically or by experts) on the extent to which they are *trainable* in general. One may expect that the correlation of the interaction effect studied here with such a trainability index will be higher than the .19 that has been found here with the validity coefficients.

Lastly, we did not assess career choice directly but used a derived aspect of by using “working experience”. In view of the results found here, one may expect that in a sample of persons who have chosen the jobs which they really preferred, the effects found here will show themselves much stronger.

Thus, developing yourself into who you are instead of into who you aspire to be amounts to choosing a career that capitalizes on the competencies which fit your personality most and that minimizes appeal on competencies which don't.

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## APPENDIX 1

### WORKPLACE BIG FIVE: Personality facets per factor

N1: Sensitiveness	How much do we worry about ourselves?
N2: Intensity	How easily do we get angry?
N3: Interpretation	How many problems do we see in situations?
N4: Rebound	Time How much time do we need to rebound from setbacks?
N5: Reticence	The degree to which we feel uneasy in a group
E1: Enthusiasm	The degree to which we deal personally and pleasantly with others
E2: Sociability	How easily and how often so we seek the company of others?
E3: Energy	Mode The degree of energy and the pace of work we display
E4: Taking Charge	The degree to which we assume a leadership role
E5: Directness	The degree to which we express our opinions directly
O1: Imagination	The number of new ideas and applications we can think up
O2: Complexity	The degree to which we approach things theoretically and in a complex manner
O3: Change	The amount of change we strive for
O4: Autonomy	The degree of independence of our opinions and arguments
A1: Service	The degree to which we are interested in the needs and interests of others
A2: Agreement	The degree to which we try to avoid differences of opinion
A3: Deference	The degree to which we pursue personal recognition
A4: Trust of Others	How easily we place our trust in others
A5: Tact	How carefully we choose our words
C1: Perfectionism	The degree to which we strive for perfect results
C2: Organization	The degree to which we work in an organized, structured manner
C3: Drive	The degree to which we always strive to achieve more
C4: Concentration	How we keep on concentrating our attention on a task
C5: Methodicalness	The degree to which we plan with foresight and in detail

## APPENDIX 2

### Estimates of development potential on the basis of Workplace Big Five Facets

In order to estimate development potential on each of the 43 competencies, based on the facet scores of the Workplace Big Five, the following procedure has been followed:

An international group of eight expert judges (USA, Great Britain, Germany, The Netherlands) has been asked to complete an on line questionnaire in which they were asked for each combination of a competency out of the list of the 43 PiMedia competencies and a facet from the 24 facets of the Workplace Big Five to assess the extent to which that facet determines the development potential of that competency.

The following instruction preceded the questionnaire:

Below you will be presented with the 43 PiMedia competencies, one after another. Under each competency all 24 facets of the Workplace Big Five are listed.

You are asked

1. to select those facets that contribute either positively or negatively to the easiness with which an individual can develop the competency in the heading
2. to rate only the selected facets on the following scale:

When a person is characterized by this facet, the development of the competency will

- + 2 be very easy for him/her
- + 1 be easy for him/her
- 0 take some effort from him/her
- 1 be difficult for him/her
- 2 be very difficult for him/her

And so for each competency.

Of course, you may select as many facets as you deem necessary, but be careful to restrict yourself to the most clear cut ones. Statistical aggregation of all expert judgments will give a sharper picture of the most defensible fit models to the extent that all individual judges have restricted themselves to the most clear cut facets in their opinion.

Processing the answers to the questionnaire, much agreement was found between the judges.

Then, for each competency only those facets were selected which had received an extreme, i.e., less than  $- 1.0$  or more than  $+ 1.0$ , average assessment of the experts.

These competencies were then rank ordered according to their standard deviation within the group of experts.

Only the facets with the smallest standard deviations were retained, taking care that at most six competencies were entered into the prediction model.

For each of the remaining competencies in the prediction model for a facet a weight was chosen out of the set  $[- 2, - 1, + 1, +2]$  which most closely approached the average assessment of the experts.

Thus, for each competency a separate linear model for predicting the development potential on the basis of a limited number of facets from the Workplace Big Five was constructed.

Using these models with the Workplace Big Five data from the normative sample, the Workplace Big Five application computes for any test person his relative standing on development potential on any competency compared to the normative sample.

This relative standing is given in the form of a T-score, i.e., a standard score with respect to the normative sample, expressed with a mean of 50 and a standard deviation of 10.

## APPENDIX 3

### Reflector

The Reflector is a diagnostic tool for gathering information about work related behavior. In today's organizations, managers lack information for giving their employees feedback. Colleagues, clients, assistants and even suppliers often see more of the behavior of the employee and more important: from different perspectives! The Reflector is a 360 degrees feedback tool since it gathers feedback from different sources. The work-related behavior is described in terms of competencies like customer orientation, leadership or entrepreneurship

A competency is measured by five bipolar items. Each item include two statements and a five point scale (see example item). Respondents are asked to indicate for each items which of the two statement best describes the employee's behavior. In the questionnaire the items of all competencies are randomized. So the respondents assess the employee though evaluating behavioral examples on a Likert scale running from 1 to 5.

Identifies and discusses employee strengths and weaknesses.	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Concentrates on the work, not on employee development.
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*Example item from questionnaire*

The feedback report enables an employee to compare the way he see himself with the way others experience his behavior. By reflecting the feedback from others, whether positive or negative, employees have the opportunity to become conscious of their behavior and its effects on others. The on-the-job behavior delineated by the Reflector is described in terms of competencies. In addition, the report offers development tips and ideas for improving performance.

## APPENDIX 4

### Behavioral competency model

#### Competencies in the area of Management and Leadership

The Management/Leadership competency area comprises the competencies related to behavior focused on directing, motivating and developing human resources at the level of both content and process.

- 1. Leadership:** Directing and guiding employees in the performance of their jobs; employing management styles and methods which are tailored to the employee/team and situation in question.
- 2. Coaching:** Directing and guiding an employee in the performance of his/her job; adapting coaching style to employee and situation so that the employee can develop optimally.
- 3. Group leadership:** Directing and guiding a group of employees in the performance of their tasks; establishing and maintaining the team spirit and joint activities needed to achieve a set goal.
- 4. Delegation:** Assigning one's own responsibilities and authority to the appropriate employees in an unambiguous manner; making effective use of employees' time and skills.
- 5. Planning and organizing:** Determining goals and priorities effectively and stipulating the time, activities and resources required to achieve the set goals.
- 6. Management control:** Establishing and monitoring procedures to control and regulate employee tasks and activities as well as one's own tasks and responsibilities.

### **Competencies in the area of Enterprise**

The Enterprise competency area comprises the competencies related to behavior focused on detecting and utilizing market opportunities, anticipating and dealing with customer issues and achieving customer satisfaction and business advantage.

**7. Entrepreneurship:** Recognizing market opportunities for both current and new products/services and considering them in a businesslike manner; taking risks to achieve a business advantage.

**8. Market orientation:** Demonstrating that one is well informed about market and technological developments.

**9. Customer orientation:** Investigating customer wishes and needs and acting accordingly; anticipating customer needs; giving high priority to service and customer satisfaction.

**10. Networking:** Constructing relationships and networks which are useful in achieving objectives; making effective use of informal networks to get things done.

## **Competencies in the area of Analysis and Decision-making**

The Analysis/Decision-making competency area comprises the competencies related to behavior concerned with collecting, analyzing and weighing data, placing data in a broader perspective, adopting standpoints and making well-considered decisions.

**11. Problem analysis:** Identifying problems; recognizing significant information; making connections between data; tracing possible causes of problems; investigating relevant data.

**12. Judgment:** Drawing correct and realistic conclusions based on the information available.

**13. Decisiveness:** Active decision-making; committing oneself by expressing opinions, taking action.

**14. Vision:** Standing back from day-to-day activities; concentrating on major issues and long-term policy.

**15. Organizational sensitivity:** Recognizing the effects and results of one's own decisions or activities on other parts of the organization; recognizing the interests of other parts of one's organization.

**16. Extra-organizational awareness:** Demonstrating awareness of social, political and economic developments and using this knowledge effectively for one's own job or organization.

**17. Learning ability:** Absorbing new information and ideas and applying them effectively.

**18. Creativity:** Coming up with original solutions for job-related problems; devising new working methods to replace current methods.

**19. Self-organization:** Organizing one's own work effectively by formulating objectives and planning activities; focusing available time and energy on major issues and critical problems.

## **Competencies in the area of Communication**

The Communication competency area comprises the competencies related to behavior focused on mutual interaction and communication, personal demeanor and social skills.

**20. Oral communication:** Conveying ideas and opinions clearly to others, making use of unambiguous language, gestures and non-verbal communication; adapting language and terminology appropriately.

**21. Oral presentation:** Presenting ideas and facts clearly, making use of appropriate aids; tailoring presentation to needs of audience.

**22. Written communication:** Expressing ideas and opinions clearly in properly structured, well-organized and grammatically correct reports or documents utilizing language and terminology appropriate to the reader.

**23. Listening:** Attentive listening, as demonstrated by the capacity to pick up significant information from verbal communications; continuing to ask questions; investigating reactions.

**24. Sensitivity:** Showing oneself to be aware of other people and the environment and of one's own influence on both. Behavior reflecting recognition of the feelings of others.

**25. Persuasiveness:** Attempting to persuade others to adopt a certain standpoint and trying to come to agreement by making use of appropriate arguments and methods.

**26. Negotiating:** Communicating one's own standpoints and arguments effectively and pointing out common goals in a manner leading to agreement and acceptance by all parties.

**27. Impact:** Making and maintaining a favorable first impression on others; inspiring confidence in others.

**28. Teamwork:** Contributing actively to a joint result or solution to a problem, even when such teamwork concerns a matter which is not of immediate personal interest.

**29. Sociability:** Mingling effortlessly with other people; at ease when approaching others or on social occasions.



### **Competencies in the area of Personality**

The Personality competency area comprises the competencies related to behaviour which is determined to a great extent by people's personal, individual natures.

**30. Adaptability:** Maintaining effectiveness by adapting to changing circumstances, tasks, responsibilities and people.

**31. Stress tolerance:** Continuing to perform effectively when facing time pressure, adversity, disappointment and opposition.

**32. Independence:** Acting on the basis of one's own convictions rather than trying to please others; going one's own way.

**33. Tenacity:** Staying with a plan of action or point of view until the desired goal has been attained or is no longer reasonably attainable.

**34. Behavioral flexibility:** Modifying one's behavior to reach a set goal when problems or opportunities arise.

### **Competencies in the area of Motivation**

The Motivation competency area comprises the competencies related to behavior which is determined to a great extent by the personal attitude and motivation of individuals.

**35. Initiative:** Recognizing opportunities and acting on them; self-starting rather than waiting passively to see what happens.

**36. Work standards:** Setting high standards regarding one's own work and acting accordingly; showing dissatisfaction with merely average performance.

**37. Ambition:** Displaying behavior focused on reaching a higher position or assuming more responsibilities.

**38. Self-development:** Possessing insight into one's own strengths and weaknesses; on this basis, initiating activities to increase/enhance one's knowledge, skills and competencies in order to perform more effectively.

**39. Integrity:** Upholding generally accepted social and ethical standards in job-related activities.

**40. Discipline:** Complying with organizational policy and/or procedures; seeking confirmation from the proper authorities in case of ambiguous or changing circumstances.

**41. Organizational loyalty:** Bringing one's own behavior into line with the culture, requirements, priorities and goals of the organization.

**42. Results orientation:** Actively focused on achieving results and objectives; ready to take action in case of disappointing results.

**43. Quality orientation:** Setting high standards regarding the quality of products and services and acting accordingly.