The mediating role of competencies in training effectiveness

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Many organisations use a competency framework to structure HR(D) processes within the organisation. However, the validity of these frameworks is not always ensured. This research shows a method to validate a competency framework for HRD purposes by demonstrating the mediating effect between training and behaviour. It illustrates how competencies that are affected by training and positively affect behaviour at the job have a high validity. To execute this research, a survey-study was undertaken at a large HR-service provider in the Netherlands. A total of 152 employees attended the training program in February 2009 and participated in this research by completing a self-survey. The results show that five out of 22 identified competencies significantly mediate the relationship between training and behaviour, and can therefore be indicated as competencies that have a high validity. Furthermore, a way of indicating the return on investment of a given competency is given. This resulted in two out of 22 competencies indicated to realise a high return on investment. Discussions and implications for practice and future research are also included.

Competencies play an important role in the practice of human resource development, especially in linking the individual within the organisation to the organisational strategy. The popularity of competency management has increased in the last three decades. It is estimated that over 60% of organisations use a competency framework as a fundamental element of their training strategy (Chartered Institute of Personnel and Development [CIPD], 2007). A competency can be defined as a basic personal characteristic that is a determining factor for acting successfully in a job or situation (McClelland, 1993). A competency framework can be seen as an integrated set of competencies.

Research on competencies show that competency is strongly connected to performance on the job (McClelland, 1993; Jackson & Schuler, 2003). Furthermore, competencies can be improved by means

of a training intervention (Lucia & Lepsinger, 1999). Therefore, competencies are seen as the ultimate mediator between training interventions and performance on the job.

Previously many research has been done on the subject of competencies, including some studies about the validity of competency frameworks. However, previous research on the validity of competency frameworks mainly focuses on determining the validity of an organisation-specific framework, by using an extensive number of validity tests (Koyano, Shibata, Nakazato, Haga & Suyama, 1991; Stewart, 2006). Spencer (2003) argues that competence as a concept has meaning only to the extent it empirically predicts a criterion level of performance.

For HRD practitioners the validity of their competency framework is crucial. Having determined a competency framework, one must be sure this framework is valid and therefore represents the domain that is critical for organisational results. For HRD purposes, only those competencies that can be developed are relevant. Therefore, this research will examine whether competencies contribute to performance as a result of training. The examination of this contribution is relevant as it validates the use of a given set of competencies as an interface between training and critical behaviour. Therefore, in this research a method to validate a competency framework for HRD purposes is presented.

Theoretical Framework

Literature on competencies reflects a research path of over 30 years. It was McClelland (1973) who introduced the concept of competency into the human resource literature. He describes a competency when treated in isolation. A competency framework can even be more powerful, as it can be defined as the integrated set of competencies required for excellent performance (Boyatzis, 2006).

During the past three decades competencies has flourished enormously in research and practice. Competency frameworks and competency management have become standard practice in human resource management and development (Stoof, Martens, van Merriënboer & Bastiaens, 2002; Sultana, 2008; Meriot, 2005). During the years, many organisations have addressed issues such as organisational transformation, performance improvement, employee development, and succession planning by the implementation of competency frameworks (Draganidis & Mentzas, 2006). Draganidis and Mentzas (2006) state that the main reasons for using competency frameworks are the

following. First, competency frameworks can provide identification of the skills, knowledge, behaviours and capabilities needed to meet current and future personnel selection needs, in alignment with the differentiations in strategies and organisation priorities. Second, competency frameworks can focus the individual and group development plans to eliminate the gap between the competencies requested by a project, job role, or enterprise strategy and those available (Draganidis & Mentzas, 2006). These processes within the organisation are essential in realising maximum results. This underlines the necessity of a well validated competency framework.

Boyatzis (2006) describes a major validity problem in studies on competency management: problems in assessment of the competencies (i.e., the measurement methods used). With regard to this validity problem, competencies are often extracted from attitude surveys, focus groups, or expert panels. These sources, while at face-value are valid, tend to generate lists of socially desired characteristics which may or may not have relevance to performance because they are embedded in the organisations' culture (Boyatzis, 1982). The evidence of validity lies in whether a high score on a competency measure is more often associated with successful performance across a variety of position than one would expect by chance (McClelland, 1998). However, very few competency frameworks developed in most organisations meet this standard (Spencer, 2003).

Construct of competencies

Previous research has given different meanings to the competency concept. McClelland (1993) describes competencies as basic personal characteristics that determine factors for acting successfully in a job or situation. The definition of Jackson and Schuler (2003) shows that a competency is the skills, knowledge, abilities, and other characteristics that someone needs to perform a job effectively. Furthermore, Draganidis and Mentzas (2006) define a competency as "a combination of tacit and explicit knowledge, behaviour and skills that gives someone the potential for effectiveness in task performance" (p.53). All aforementioned definitions have in common that they approach competency on the individual level, and that competency is essential in effectively performing a task. Parry (1996) offers an extensive definition of competency at the individual level: "a competency is a cluster of related knowledge, skills, and attitudes that affects a major part of one's job (a role or responsibility),

that correlates with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development" (Parry, 1996, p. 50). This definition is in line with the aforementioned definitions as a competency is more than a skill, includes knowledge, and relates to performance. Furthermore, it explicitly adds that a competency can be improved. In this research the definition of Parry (1996) was used.

Training effectiveness

Training evaluation models

There have been many attempts to relate training interventions to organisational results. Over the last decades, many levels of effectiveness have been presented by numerous scholars. Perhaps the most popular framework that attempts to relate training efforts to organisational results is the four-level framework of Donald Kirkpatrick, consisting of the following four levels: reaction, learning, behaviour and results (Kirkpatrick, 1994). Research on training evaluation models that have been proposed since Kirkpatrick's framework was first introduced, show that many use the four levels as a basis for their thinking (Tamkin, Yarnall & Kerrin, 2002). The models of Hamblin (1974) and Philips (1994) are largely comparable to Kirkpatrick, but they add a fifth level to separate out the assessment of monetary benefits of the training compared to its costs. Kaufman, Keller and Watkins (1995) expanded Kirkpatrick's model by including societal contribution as an evaluation criteria. Furthermore the model also included some additions to the other levels, such as the inclusion of needs assessment and planning in the evaluation, an examination of the desired or expected results, and a review of the availability and quality of resources. Whether the additions mentioned are relevant, depends on the objectives of a training intervention and the organisation as a whole. In this research, the model of Kirkpatrick (1994) is used, as this one is widely known in the HRD field and provides a basic structure to distinguish the multiple levels of effect in this research.

Measuring effectiveness

Different ways in measuring effectiveness can be distinguished, which can be described by means of different orders of effectiveness. For first order effectiveness, the effect is measured on a single

level. For second order effectiveness, the effect is measured on two levels. For third order of effectiveness, effect is measured on three levels.

It has been mentioned by many scholars that HRD practitioners should not be satisfied with measuring the effectiveness of their training on just level one of Kirkpatrick (Dyer, 1994; Mole, 1996; Philips, 2003). These evaluations are often referred to as happy sheets. Advocates like Phillips (2003) argue that HRD practitioners should measure the effectiveness of training on all levels. Stoel (2009) adds another dimension to the discussion. He disagrees with Phillips and states that the relation between the measures is more important than the measures on a single level. One level validates the other level, where the higher the correlation is the higher the extent of validity.

As Stoel (2009) proposes, one level of training effectiveness validates the other level. In previous research on the validation of competency frameworks it is often proposed that competencies should relate to performance on the job (Boyatzis, 1982; Spencer, 2003). These propositions are all based on the subject of criterion validity. Criterion validity asks whether the measure really predicts the dependent variable it is supposed to predict (Holton & Burnett, 2005). Criterion validity is relevant for training effectiveness as the different levels of effect are expected to relate to each other. So it is expected that competencies on level two are related to behaviour on level three. When an increase in competencies does not result in an increase in behaviour, no valuable effect was realised. As Spencer (2003) proposes, a competency which does not predict measurable performance is no competency.

In this research, a method to validate a competency framework for HRD purposes is presented. Therefore, second order effectiveness analysis was performed in which level two and three as described by Kirkpatrick are included. The competency framework can be indicated as valid as it significantly predicts critical behaviour. Critical behaviour is defined as the key behaviour that significantly influences the results (Brinkerhoff, 2005). Furthermore training was included in this research, as for HRD purposes only that competencies that can be developed during training are relevant. Because of the aforementioned considerations, the competency framework was validated by means of mediation between training and critical behaviour. A visual overview is presented in Figure 1. Furthermore, to optimize the competency framework and to be sure that single competencies that do not significantly predict critical behaviour are excluded. Therefore, the mediation of single

competencies was examined as this indicates the contribution of single competencies to critical behaviour as a result of training. This results in the identification of a robust and valid competency framework, in which only competencies which make a significant difference are included. When using this competency framework in training on competencies, one is sure that attention is paid to those competencies that make a difference in critical behaviour as a result of training. By investing in the development of these competencies, high results are expected. This indicates a high return on investment (ROI).

Figure 1. The mediating role of competencies between training and critical behaviour.

Return on Investment

For organisations, and therefore also for HRD departments, it is important to compare the costs to the benefits for investments that need to be done. In this light, cost-effectiveness is an important concept. Cost-effectiveness is defined as the relative expenditure compared to the outcomes, thus comparing the costs to the effects (Levin, 1983). Newby (1992) also describes cost-effectiveness analysis for training situations. He describes that it is useful in training situations as the costs can often be specified but the training outcomes, although identifiable, do not have an obvious monetary value. Philips (2003) and Kearns and Miller (1997) argue that gathering hard monetary data is possible in every situation. They argue that the objectives should be clearly defined so that they spell out the financial implications.

In this research, evaluation is done on the level of competencies and behaviour as mentioned by Kirkpatrick. However, although no monetary data is collected, it is still possible to discuss about optimal decisions related to the costs and the benefits of an investment. To realise this, the model of Bergenhenegouwen, ten Horn and Mooijman (1997) presented in Figure 2 gives some structure. This model describes the two variables “possibility of learning” and “importance” for different type of

competencies. The possibility of learning can be described as to what extent a competency is easy to teach or develop. The variable importance indicates to what extent a competency determines how a person acts in specific situation (Bergenhenegouwen et al., 1997).

The model of Bergenhenegouwen et al. (1997) shows an inversed proportional relationship between the variables of possibility of learning and importance. This statement is important for this research, as it suggests that all competencies that are important in predicting behaviour on the workplace are hard to learn to someone. Furthermore, all competencies that are easy to learn are not important in predicting behaviour in the workplace. In practice, it is more likely that variations of these extremes are found, as the importance of a competency depends on the specific situation or job.

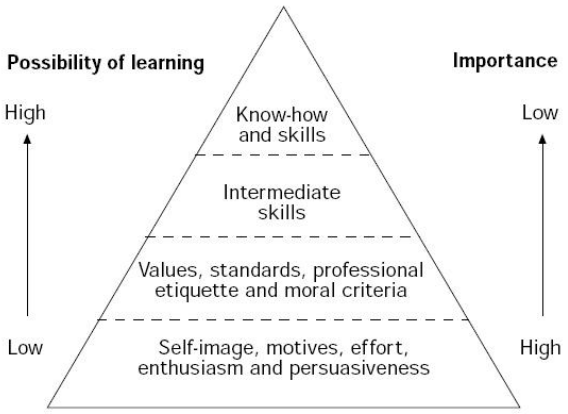

Figure 2. Human competency in the form of an "iceberg" (Bergenhenegouwen et al., 1997).

To compare the model of Bergenhenegouwen to ROI, it is assumed that a competency that has a high possibility of learning, needs less training investment (in terms of attention or money) compared to a competency that has a low possibility of learning. When a competency has a high possibility of learning and a high importance, a low investment with a high result is expected. Therefore, in this research, it is expected that the ROI of a competency can be indicated by the product of its possibility of learning and its importance. A visual overview is presented in Figure 3.

The dotted line in Figure 2 indicates the ROI according to the model of Bergenhenegouwen et al. (1997), as this model suggests an inversed proportional relationship between the two variables. The arrow indicates the ROI, as a competency that has a high possibility of learning and high importance realises a higher ROI than a competency that has a low possibility of learning and low importance.

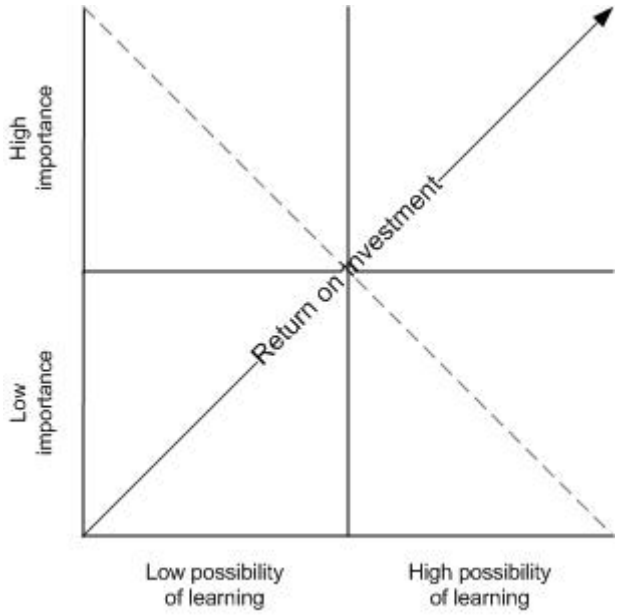

Figure 3. The ROI of a competency indicated by its possibility of learning and its importance

Methods

The training program

For the purpose of this research a training program for consultants working for a HR-service provider in the Netherlands was evaluated. This organisation is a full service HR-service provider with thousands of offices all over the world and has a market leader position in the Netherlands. One of their main businesses is mediating between flex workers and client organisations, which is done by consultants.

The training program that was evaluated is a program designed for consultants who have been working for the company for about nine months. In general, all consultants will participate in this program. The training program consists of five training sessions and focuses on the sales process, which includes all contact and interaction with client organisations.

Study 1

To measure the competencies and the critical behaviour of the consultants, critical sales behaviour and sales competencies of consultants were identified. As behaviour and competencies are closely

related to each other, both concepts were identified independently. In this way no interaction in identifying the concepts was possible.

Identify critical behaviour

Participants

To identify critical behaviour, group discussions were held. In this group discussions, consultants and managers participated. The managers were included in this research as they have a more overall view on critical sales behaviour of consultants. In total fourteen consultants participated in two separate group discussions. Of the participants 79 per cent were female, which reflected the actual division of consultants over the organisation. The average tenure of the participants with the company was 26.5 months, with a range of 15 to 53 months. Consultants with tenure in the company of less than 12 months were excluded, as their experiences in practice are too limited to talk about critical behaviour. Five managers participated in the group discussions. Their average tenure with the organisation was 12 years, with a range of 7 to 25 years.

Procedure

To identify critical sales behaviour of consultants, three group discussions were held: two group discussions with consultants and one group discussion with managers. Both groups of participants participated in separate sessions, as previous experiences in the target organisation showed that consultants have a tendency to give social desirable answers when participating together with managers. The group discussions were led by an independent discussion leader and recorded by means of video. Each group discussion consisted of three parts. In this first part, participants were asked to describe a recent sales success. Subsequently, the critical behaviour they showed in this situation was questioned. Based on these stories a list of critical behaviour was constructed. In the second part, the same participants were asked to select the five most critical sales behaviours from 35 behaviour indicators. These behaviour indicators were constructed previously by the organisation. In the third part, the critical behaviours identified in both previous parts were compared and discussed.

Identify competencies

Participants

To identify sales competencies, interviews were held. The consultants participating in the interviews were selected in the same way as the consultants who participated in the group discussions. No consultants were participating in both activities. Of the participating consultants, 80 per cent were female. The average tenure with the organisation was 20.2 months, with a range from 12 to 33 months. With regard to these numbers, the participants reflected the actual diversity in the organisation. No rayon managers participated in the interviews to identify sales competencies, as competencies are internal to a person and therefore not directly visible to managers.

Procedure

In order to identify the most important sales competencies of consultants, ten interviews were conducted. In these interviews participants were asked for the knowledge, skills and attitudes that are essential in order to show effective sales behaviour on the job and what they want to learn in order to improve their sales results. The answers on the questions above are all sales competencies. The interviews were recorded and based on this records a transcript was made. From these records, the competencies mentioned by the different participants were identified. The integration of the competencies mentioned in the different interviews was done by means of agglomerative hierarchical cluster analysis, and performed by two independent persons. Categories that were mentioned less than three times were excluded.

Study 2

Procedure

The training program evaluated in this research consists of five training sessions, one session per month. Two or three times a month a new group of participants enrols in the program, which results in an ongoing process of participants starting and finishing the training program. Due to practical limitations, a cross-sectional research design was used instead of a longitudinal research design. In this

research all participants who participated in the training program in February 2009, irrespective whether they participated in the first or last training session, were included.

Absolute data collection

At the start of each training session in February 2009 the participants in different stages of the training program completed a self-report survey to assess their actual competencies and critical behaviour. This survey is presented in Appendix 3. Consultants who finished the program one month before February 2009 were approached by email to complete the survey about their actual competencies and critical behaviour online. So the absolute data is collected from different participants, participating in different training sessions.

To check whether the self-report survey reflects the behaviour of participants in an accurate way, managers of the participants were included in this research. Managers were included as they are they are also the ones who have conversations about functioning with the consultants, and should therefore be able to rate them accurately. Direct managers of the participating consultants were asked to rate their consultants by means of a short questionnaire consisting of three criteria.

Relative data collection

At the start of the successive training session, one month after the training session in February 2009, the consultants completed another self-report survey. In this survey they assessed their change in competencies and critical behaviour compared to the previous session one month earlier. The relative survey is presented in Appendix 4. Only the participants who participated in the third session in February 2009 were excluded, as this session is more an intermediate progression session instead of a training session that results in concrete learning results. Consultants who had their final training session in February 2009 were approached by e-mail and asked to complete this second survey by means of an online questionnaire. An overview of the total data collection is presented in Table 1.

Table 1.

Research design.

	Moment of measurement					
	Start of training 1	Start of training 2	Start of training 3	Start of training 4	Start of training 5	One month after training 5 (digital)
Cohort 1	O_A X_1	O_R (X_2)				
Cohort 2		O_A X_2 .	O_R (X_3)			
Cohort 3			O_A (X_3)			
Cohort 4				O_A X_4	O_R (X_5)	
Cohort 5					O_A X_5 .	O_R
Cohort 6						O_A

Note. O_A is the absolute measure (February 2009), X_X is training session X, O_R is the relative measure (March 2009).

Participants

Absolute data collection

Of the 152 consultants who participated in the training program in February 2009, 141 completed the survey. This results in a response rate of 92.8%. Of the 23 consultants who finished the program one month before February 2009, 11 completed the online survey (response rate: 47.8%). In total, the direct managers of 173 consultants were approached. This resulted in a response of 86 scores of consultants by managers (response rate: 49.7%). Due to incorrect survey completion only 52 scores given by managers were matched to the survey scores of consultants.

Relative data collection

Consultants who were participating in the training program in March 2009 were asked to complete the second survey. In total, 32 consultants completed the second survey during the successive training session. Twenty-five consultants completed the online survey, which resulted in a response rate of online surveys of 69.4%. Thus in total, 57 second surveys were completed. Due to incomplete survey completion, four surveys had to be discarded, leaving a final sample of 52 surveys that were matched with the first survey.

Measures

In this section, the operationalization of competencies and critical behaviour is described.

In this research*, competencies* were operationalized as the participant's perception of his or her own competency. This was measured by means of the propositions of sales competencies identified by means of the interviews. In February 2009, the actual competencies and critical behaviour were measured. Therefore participants were asked to identify to what extent they agree with the propositions, using a 5-point Likert scale (1 = certainly not, 5 = certainly). At the start of the successive training sessions in March 2009, the change since the previous training sessions was measured. Therefore participants were asked to identify to what extent the propositions are less, the same, or more applicable to them as a result of the previous training session, using a 5-point Likert scale (1 = less, 3 = the same, 5 = more). The variable competencies is created by the mean of the scores on all single competencies. When the role of single competencies is examined, only this competency is included in the analysis.

Critical behaviour was operationalized as the participant's perception of the extent to what he or she shows critical behaviour. This was measured by means of the propositions of critical behaviour, identified by means of group discussions. In February 2009 (the actual data collection), participants were asked to rate how often each proposition was relevant to them, using a 5-point Likert scale (1 = never, 5 = always). At the start of the successive training session in March 2009 (the relative data collection), participants were asked to identify to what extent the propositions are less, the same, or more applicable to them since the previous training session, using a 5-point Likert scale (1 = less, 3 = the same, 5 = more). In both measurement moments an extra option of "not relevant" was added to the scale for critical behaviour, as some behaviour is not relevant in certain job specializations of consultants. The variable critical behaviour is created by the mean of the score on all single critical behaviour indicators.

Training was operationalized as the number of training sessions a participants has attended. For the data collection of this research, different cohorts were identified. These cohorts differed in the number of training sessions participants had attended, varying from zero to five training sessions. As each

cohort exists of approximately the same number of participants, this variable was not normal distributed.

Data-analysis

To validate the competency framework in this research, absolute data was used. As the absolute data collected from different cohorts was compared to each other, the design of this research is mainly cross-sectional. To begin with, descriptive statistics were used to calculate means and standard deviations of competencies and critical behaviour for the six cohorts distinguished in this research. Second, Spearman's correlation was calculated to test interrelationships among the research variables. The reason Spearman's correlation was used instead of Pearson's correlation was the lack of normality in the variable training. Third, hierarchical regression analysis was conducted to validate the competency framework in this research by means of mediation. To test for mediation, the four mediation criteria of Baron and Kenny (1986) were used. Baron and Kenny (1986) describe that mediation can be said to occur when (1) the independent variable significantly affects the mediator, (2) the independent variable significantly affects the dependent variable in the absence of the mediator, (3) the mediator has a significant unique effect on the dependent variable, and (4) the effect of the independent variable on the dependent variable shrinks upon the addition of the mediator to the model.

Results

Study 1

Identifying critical behaviour

By combining the results of all three discussions, nine behaviour indicators previously identified by the organisation were indicated as critical. Two of these behaviour indicators consisted of two parts and were therefore split, resulting in 11 critical behaviours previously identified by the organisation. Beside the critical behaviours previously identified by the organisation, some additions were made by the participants. This resulted in 11 critical behaviours, which makes a final set of 22 critical

behaviours identified by the participants of the group discussions. In Appendix 1, the final list of 22 propositions representing the critical behaviour is presented.

Identifying competencies

In the ten interviews that were conducted, multiple competencies were mentioned by the participants. By performing agglomerative hierarchical cluster analysis, all mentioned competencies were categorized. This resulted in 34 different categories of competencies. Categories that were mentioned less than three times were excluded as these were mentioned only once or twice and are therefore not seen as essential competencies in order to perform more effectively. This resulted in a final set of 22 competencies. In Appendix 2, the final list of 22 propositions representing the competencies is presented. In this research, all 22 identified competencies represent the competency framework.

Study 2

Descriptive statistics

In Table 2, the means and standard deviations are showed for the different cohorts distinguished in this research. Overall showing that the higher the cohort one is participating in, the more competencies one has and critical behaviour one shows.

Table 2.

Means and standard deviations of competencies and critical behaviour of the different cohorts.

Cohort	Moment of measurement		Competencies	Critical behaviour
		N	mean (SD)	mean (SD)
1	Start of training 1	23	3.78 (.27)	3.62 (.56)
2	Start of training 2	24	3.76 (.29)	3.52 (.52)
3	Start of training 3	35	3.95 (.27)	3.72 (.47)
4	Start of training 4	34	3.93 (.32)	3.71 (.40)
5	Start of training 5	25	4.02 (.25)	3.75 (.46)
6	One month after training 5	11	4.04 (.39)	4.26 (.33)

Note. Competencies and critical behaviour are scored on 5-point scales.

Inter-correlations of the control variables and research variables are presented in Table 3. To calculate the bivariate correlations between these variables, Spearman's rank correlation coefficient was used as the variable training was not normal distributed. According to the definitions, only positive relationships are expected. Therefore significance is tested one-tailed. The results indicated that training, competencies, and critical behaviour are positively and significantly related to each other. The variable score by manager does not show any significant correlation with the other research variables. Further, the control variables do not show any significant correlation with the research variables, therefore these control variables are not taken into account in the next analyses.

Table 3.

Inter-correlations of the research variables.

Variables	1	2	3	4	5
(1) Gender					
(2) Age	-.131 [a]				
(3) Training	.033 [a]	.057 [a]			
(4) Competencies	-.104 [a]	.112 [a]	.242** [a]		
(5) Critical behaviour	-.034 [a]	.060 [a]	.239** [a]	.607*** [a]	
(6) Score by manager	-.241 [b]	-.057 [b]	.058 [b]	.042 [b]	-.024 [b]

[a] n = 152. [b] n = 52.

*p<.05. **p<.01. ***p<.001. One-tailed tests.

Causality

The analyses executed in this research were mainly based on data derived according to a cross-sectional research design, meaning that different groups were measured at different stages of the training process. By comparing the different cohorts to each other, a time series of data was created. But as the data was derived from different cohorts, causality statements are not statistically valid. Although, based on literature described before, a causal relationship between training, competencies and critical behaviour was expected. This expectation was supported by the data collected by means of the relative measure. The mean score for the change in competencies is 3.52 on a 5-point Likert scale, in which 3 was "neutral" (no change) and 5 was "a lot". Furthermore, the change in competencies as a result of training correlates significantly with the change in critical behaviour (r = .734, p<.001).

These results indicate a causal relationship between these variables training, competencies and critical behaviour. Therefore, although a cross-sectional research design was used, this research used regression analysis to determine the mediating role of competencies between training and critical behaviour.

Competencies as mediator

To examine the validity of the competency framework, the extent to what competencies mediate between training and critical behaviour is determined. In order to test for mediation, hierarchical regression analysis was performed with regard to the four mediation criteria of Baron & Kenny (1986).

Criterion 1 tests whether the amount of training a participant has followed affects the competencies a participant has. Hierarchical regression analysis shows that the amount of training sessions a participant has followed explains 6.4% of the variance in competencies (β = .254, p<.01), satisfying criterion 1.

To test for criterion 2, it is tested whether the amount of training a participant has followed affects the critical behaviour a participant shows. Hierarchical regression analysis, as presented in step 1 Table 4, shows that the amount of training a participant has followed explains 6.4% of the variance in critical behaviour (β = .253, p<.01), satisfying criterion 2.

To test for criterion 3, it is tested whether the competencies a participant has affects the critical behaviour a participant shows. Regression analysis shows that competencies explains 35.2% of the variance in critical behaviour (β = .594, p<.001), satisfying criterion 3.

To test for criterion 4, competencies are added to the model in step 2 of Table 4. When in step 2 the variable competencies is added, the significant effect of training on competencies disappears (from β = .253, p<.01 to β = .112, p = ns). In total, step 2 explains 36% of the variance in critical behaviour. These results indicate that competencies partly mediate the relationship between training and critical behaviour, and are therefore responsible for the link between training and critical behaviour.

With regard to the validity of the competencies, it can be concluded that the competencies explain 35% of the variance in critical behaviour. In the next section mediation is tested for the single

competencies, thereby examining their single contribution to the link between training and critical behaviour.

Table 4.

Hierarchical regression analysis results.

Dependent variable		*Independent or mediator variable*	β	R^2	Δ R^2
Critical behaviour	Step 1	Training	.253**	.064	
	Step 2	Training	.112	.364	.300
		Competencies	.566***		

*p<.05. **p<.01. ***p<.001.

Single competencies as mediator

In the previous section, the mediating role of competencies on the relationship between training and critical behaviour was tested. In this section the mediating role of the single competencies on the relationship between training and critical behaviour was tested. By testing the role of single competencies, their single contribution to training effectiveness can be determined. To test for mediation, four steps were taken.

Step A: Correlation analysis

By means of correlation analysis the relationship of the single competency with the variables training and critical behaviour was tested. As for a mediator correlation with both other variables is required, only that single competencies that significant correlate with training and critical behaviour were included in the next step.

Table 5 in Appendix 5 presents the correlations of the single competencies with the variables training and critical behaviour. To calculate the bivariate correlations between the variables, Spearman's rank correlation coefficient was used. The results indicate that ten of the competencies significantly correlate with the variable training, nineteen single competencies show a significant statistical relationship with critical behaviour. The ten single competencies that significantly correlate with both variables are included in the next step.

Table 6.

Hierarchical regression analysis results for single competencies, testing criterion 1.

Independent variable		*Dependent variable*	β	R^2
Training	Step 1	Single competency 2	.128	.016
	Step 2	Single competency 3	.148	.022
	Step 3	Single competency 11	.160*	.026
	Step 4	Single competency 12	.155	.024
	Step 5	Single competency 14	.071	.005
	Step 6	Single competency 16	.208*	.043
	Step 7	Single competency 17	.324***	.105
	Step 8	Single competency 18	.390***	.152
	Step 9	Single competency 21	.312***	.097
	Step 10	Single competency 22	.147	.022

*p<.05, **p<.01, ***p<.001

Table 7.

Hierarchical regression analysis results for single competencies, testing criterion 2,3, and 4

Dependent variable		*Independent or mediator variable*	β	R^2	Δ R^2
Critical behaviour	Step 1	Training	.253**	.064	
	Step 2	Training	.216**	.117	.053
		Single competency 11	.234**		
	Step 3	Training	.203*	.121	.057
		Single competency 16	.244**		
	Step 4	Training	.139	.179	.115
		Single competency 17	.357***		
	Step 5	Training	.125	.158	.094
		Single competency 18	.332***		
	Step 6	Training	.192*	.098	.034
		Single competency 21	.195*		

Note. In step 2 to 6, Δ R^2 is calculated by comparing the R^2 of step 2 to 6 to the R^2 of step 1.

*p<.05. **p<.01. ***p<.001

Step B: Criterion 1

In this step, criterion 1 of Baron and Kenny (1986) was tested for the ten single competencies that significantly correlate with training and critical behaviour by means of hierarchical regression analysis. The results in Table 6 show that training significantly affects five single competencies.

Step C: Criteria 2, 3 and 4

In order to test to what extent the single competencies mediate the relationship between training and critical behaviour, regression analysis was performed for the single competencies that are significantly affected by training and therefore satisfy criterion 1. Table 7, step 1 shows that training significantly affects critical behaviour, which satisfies criterion 2. The results in step 2 to 6 show that all five single competencies significantly affect critical behaviour, satisfying criterion 3. Criterion 4 is also satisfied by all five single competencies, as the beta weight for the variable training in step 2 to 6 is in all steps smaller than the beta weight for the variable training in step 1. All five single competencies are mediating the relationship between training and critical behaviour, as the significant effect of training critical behaviour shrinks in all cases but does not disappear completely. Table 7 shows that single competency 17 and single competency 18 are the strongest mediators, as in these cases the significant effect of training on critical behaviour disappears. Further, these single competencies both realise a high percentage explained variance in critical behaviour.

Step D: The mediators combined

In step A to C, the mediation of the single competencies on the relationship between training and critical behaviour was tested. The results show that five single competencies significantly mediate the relationship between training and critical behaviour. In this step the influence of this significantly mediating single competencies together is tested.

In step 7 of the hierarchical regression analysis, presented in Table 8, the five competencies that all independently of each other mediate the relationship between training and critical behaviour were all added to the model. This model explains 24.9% of the variance in critical behaviour. The effect of training on critical behaviour shrunk almost completely (from $\beta = .253$, $p<.01$ to $\beta = .051$, p = ns). It is remarkable that only one competency significantly affects critical behaviour.

Table 8.

Hierarchical regression analysis results.

Dependent variable		*Independent or mediator variable*	β	R^2	Δ R^2
Critical behaviour	Step 1	Training	.253**	.064	
	Step 7	Training	.051	.249	.185
		Single competency 11	.144		
		Single competency 16	.127		
		Single competency 17	.166		
		Single competency 18	.189*		
		Single competency 21	.088		
	Step 8	Training	.095	.203	.139
		Single competency 17	.259**		
		Single competency 18	.196*		

Note. In step 7 and 8, Δ R^2 is calculated by comparing the R^2 of step 7 and 8 to the R^2 of step 1.
*p<.05, **p<.01, ***p<.001

In step 8, presented in Table 8, only the two strongest mediators that diminished the significant effect of training on critical behaviour as presented in Table 7 are added to the model. In this step the effect of training on critical behaviour has almost completely disappeared (from β = .253, p<.01 to β = .095, p = ns). Further, both mediating variables have a significant effect on critical behaviour and the model explains 20.3% of the variance in critical behaviour. Concluding this step, the five single competencies together explain 5% more variance than the two single competencies do. However, the two single competencies both significantly affect critical behaviour.

Concluding, the results show that the validity of the competency framework used for this study can be restricted to a limited number of competencies that influence critical behaviour as a result of training.

Return on Investment

The correlation between the single competency and critical behaviour is used as an indicator for the variable importance, as this describes the extent to what there is a relationship between the single competency and the behaviour on the job. The variable possibility of learning is indicated by the

correlation between the single competency and the training, controlled for the amount of attention that has been paid to the development of the single competency during the training. Thereby, it is assumed that the correlation between training and a single competency can be described by the possibility of learning of the single competency and the amount of attention that has been paid to the development of the single competency during the training program. To measure the amount of attention, a short survey was completed by the trainers of the training program (N=6). In this survey they indicated for each single competency how much attention was paid during the program.

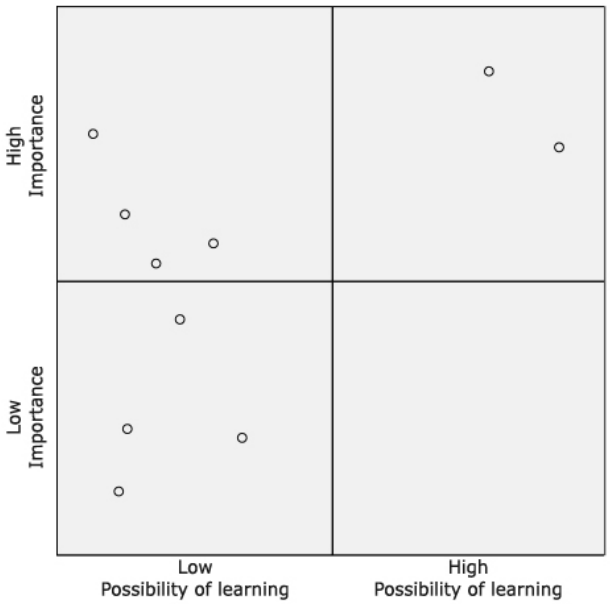

Figure 4. The ROI of single competencies indicated by the possibility of learning and importance.

The results of the translation of the results to the model are presented in Figure 4. This figure shows that two competencies potentially have a high ROI, as they had a high possibility of learning and a high importance. These two single competencies are single competency number 17 and single competency number 18, which also explained most of the variance in critical behaviour as presented in Table 8, step 8.

Discussion

In study 1 of this research, competencies and critical behaviour was identified. This resulted in 22 propositions with regard to competencies and 22 propositions with regard to critical behaviour. For the identification of the competencies, no previously identified concepts were used. By means of ten interviews, the competencies were identified. Therefore, the reliability of the competencies can be questioned.

In study 2 of this research, a competency framework was validated and optimized. To validate this competency framework, the mediating effect of all 22 competencies between training and critical behaviour was tested. The results showed that 35.2% of the variance in critical behaviour can be explained by the competencies. Further, it was showed that competencies significantly mediate the relationship between training and critical behaviour. However, to create a valid and robust competency framework, further analysis was necessary.

To identify the competencies that contributed most to critical behaviour as a result of training, mediation analysis for single competencies was executed. The results show that five competencies significantly mediate the relationship between training and critical behaviour, together explaining 24.9% of the variance in critical behaviour. Two of these competencies explain together 20.3% of the variance in critical behaviour. Therefore, it can be concluded that most of the 22 competencies do not contribute to critical behaviour as a result of training. The percentage explained variance in this research reaches the 35%. This percentage explained variance of competencies on critical behaviour is high, as behaviour on the job is also influenced by many other factors (Baldwin & Ford, 1988; Velada et al., 2003).

With regard to the optimization of the competency framework, only that competencies should be included that significantly mediate between training and critical behaviour. However, before drawing conclusions about including or excluding competencies in a competency framework, the measurement of competencies should be extended. As was already mentioned before, the reliability of the identified competencies can not be ensured. Furthermore, the single competencies were measured by means of only one item, which may have resulted in a low validity of the measure of single competencies.

As was already mentioned in the results section, the score of the manager did not show any significant correlation with the other research variables. A possible explanation for the fact that no significant correlation was found is that the score of the manager is too general. The manager had to answer three basic questions about the consultant, resulting in a low variance of results. Another possible explanation is that the critical capabilities and critical behaviour as identified in this research are not related to results on the workplace, or participants are not able to complete a self-survey which reflects the real situation on the job.

The indication for the ROI, based on the possibility of learning and importance as indicated by Bergenhenegouwen, shows that only two competencies can be indicated as realising a high ROI. Furthermore, the spread of the competencies over the matrix is more extreme as expected. The results show that most competencies have a relative low possibility of learning. A more equal distribution was expected. However, as described before, these results can only be interpreted as an indicator for ROI. To determine an indication for ROI the amount of attention that has been paid to a certain competency during the training program was measured by means of a questionnaire completed by six trainers of the program. Therefore the reliability of this measure can be considered as low, which as a consequence of using this measure for the indication for ROI negatively influences the reliability of the indication for ROI too.

Theoretical and practical implications

Results of this study have potentially important implications for future research and practice. The main contribution of this research for future research and practice is the development of the method for the validation of a competency framework. In practice, this method can be used in order to create a more valid and robust competency framework. The results of this method give insight in the extent to what competencies develop during a training program and the extent to what competencies are related to critical behaviour on the job. By using a more valid and robust competency framework, the focus is only on those competencies that significantly contribute to critical behaviour as a result of training. The results of this research show that there are significant differences in the contribution of competencies to critical behaviour as a result of training. Consequently, for organisations to maximize

their training effect they should focus on the development of the contributing competencies. However, the method can be optimized at specific points, which is described in a next section; recommendations for future research.

Based on the results that were plotted in Figure 4, it can be concluded that the inversed proportional relationship between possibility of learning and importance as proposed by Bergenhenegouwen et al. (1997) is not found in this research. Therefore, it can be concluded that the model does not adequately describe the relationship between these variables. A possible explanation is that the model is very general. This while competencies are situational dependent, as in some situations specific knowledge which is easy to learn can be very important for showing the right behaviour on the job.

For the target organisation of this research, the results show that participants who followed a larger amount of training have more competencies and show more critical behaviour on the job. Furthermore, competencies that contribute to critical behaviour were identified. For the organisation and the developers of the training program, the results can be used to optimize the effect of the program in the future by making adaptations in competencies receiving focus in training.

Limitations of this research

Several limitations of this study should be noted. First, as was described before, this research has used a cross-sectional research design. As a consequence of this research design it is statistically not valid to make statements about causality. But as the relative data indicates that the research variables are causal related to each other, regression analysis has been performed to test for mediation.

A second limitation is that competencies and critical behaviour were measured by self-report, rather than actual measures, which may have influenced the pattern of results. Nevertheless, the questioning was practical oriented which possibly makes it easier for participants to answer the questions more fact based. Furthermore, the survey was anonymous and confidential, what might have enhanced the accuracy of the self-report data. Further, previous research showed evidence that participants can accurately answer self-report questions related to their performance (Velada et al., 2007). However, for future research it is suggested to use direct and objective measures of the participant's on the job performance. Furthermore, common method variance could be an issue as most of the data with regard

to competencies and critical behaviour was collected from the same source and at the same time. When including the manager, as was done in this research, it is recommended to ask questions that can be answered by the manager based on objective data or observations.

Another important limitation of this research is the type of collected data in combination with the analyses that were executed, like calculating the mean and performing regression analysis. The data was collected by means of a 5-point Likert scale, which consisted of five answer categories. Strictly seen, this data is from an ordinal level according to the theory of Stevens (1946). In practice, the scale can be seen somewhere between true ordinal and interval. Although the interval difference between two ordinal ranks was not constant, it was of the same order of magnitude and was therefore treated as an interval variable in this research.

Most of the data collection took place at the start of the training session by means of a paper and pencil survey. However, participants who already finished the program completed the survey online. Beside the difference in answering the questions, the environment of the participants also differed during the completion. Although no considerable differences were found, the differences in completing the survey possibly influenced the results of this research.

Finally, because data was collected from only one training within one organisation, these results may not generalize to other organisations or industries. This may be especially relevant for the findings regarding the type of competencies that realized critical behaviour as a result of training. It is likely that in other job or organisational contexts other competencies are more effective. Therefore, the external validity of the research's findings is restricted to the context of the training within the target organisation of this research. Consequently, future research should examine the generalizability of the results in different organisation and job contexts.

Recommendations for future research

As discussed in the paragraph about limitations of this research, the validity of this research method can be improved. Therefore, for future research it is recommended to execute a longitudinal research, so that statements about causality can be made. Furthermore, more objective measures collected from multiple sources would increase the internal validity of this research. A possible strategy might be

observing critical behaviour of participants on the job and assessing his or her competencies by means 360 degrees feedback (Boyatzis, 2006). By developing these measurement methods, the level of data collection should also be taken into account, as for the analyses done in this research interval level data is desirable. Furthermore, it is important that the data is collected in multiple training and organisational contexts to ensure the generalizability of the results. Therefore, to prove the added value of this validation method, the input variables need to be improved.

Other than the methodological recommendations, it is recommended to expand the research on the validation of competency frameworks and other levels of effect. By executing higher order effectiveness measurements, like including level 4 and 5 of Kirkpatrick, the method for validation can be strengthened. Furthermore, in this research an indication of ROI based on level 2 and 3 data was given. It is recommended to expand the research on indicators for ROI, as structure with regard to this subject can be very helpful for HRD practitioners.

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Appendices

Appendix 1: Propositions with regard to critical behaviour

1. Ik laat zien met de (prospectieve) klant mee te denken.
2. Ik doe voorstellen die aansluiten op de behoefte van de klant.
3. Ik zoek naar oplossingen die ook op de lange termijn bevredigend zijn voor de (prospectieve) klant.
4. Ik onderzoek in een gesprek steeds weer de verdere behoefte van de klant.
5. Ik raadpleeg contacten of ander relevante bronnen (zoals kranten en internet) om op de hoogte te blijven van de behoeften en wensen van mijn (prospectieve) klanten.
6. Ik laat zien op de hoogte te zijn van de interne organisatie, markten en producten/diensten van de klantorganisatie.
7. Ik verander zaken in mijn werkproces om iets sneller te kunnen doen of om betere resultaten te kunnen behalen.
8. Ik onderzoek of de klant volledig tevreden is over de geleverde kwaliteit.
9. Ik sluit deals met klanten.
10. Ik benader actief potentiële klanten.
11. Ik verkoop naast producten/diensten die de directe aanleiding waren voor het gesprek ook andere producten/diensten.
12. Ik luister goed naar de (prospectieve) klant en bepaal zo telkens opnieuw de behoefte.
13. Ik toon oprecht interesse in de klant en ben niet direct gefocust op het behalen van een sales resultaat.
14. Ik maak duidelijke afspraken met de klant, waardoor de klant precies weet waar hij aan toe is.
15. Ik kom afspraken die ik gemaakt heb met de klant altijd na.
16. Ik heb een relatie met de klant op basis van gelijkwaardigheid.
17. Ik maak gebruik van mijn netwerk (binnen en buiten de organisatie) om aan de behoefte van de klant te voldoen.
18. Ik onderzoek voorafgaand aan een gesprek wat er speelt in de klantorganisatie en sluit hier in het gesprek op aan.
19. Ik denk buiten de kaders van de organisatie wanneer dit het sales resultaat verhoogt.
20. Ik doe gemakkelijk een zakelijk voorstel in een klantgesprek.
21. Ik ga actief op potentiële klanten af en als er potentie is houd ik net zo lang vol totdat het gelukt is.
22. Ik verkoop ook producten/diensten van de organisatie die niet onder mijn eigen unit vallen.

Appendix 2: Propositions with regard to competencies

1. Ik ben in staat om volledig te achteralen wat de klant echt wil.
2. Ik herken de achterliggende boodschap in een klantgesprek.
3. Ik heb een proactieve houding.
4. Ik ben oprecht geïnteresseerd in de klant en zijn organisatie.
5. Ik wil de klant echt helpen.
6. Ik durf alle vragen te stellen die relevant zijn in een gesprek.
7. Ik ben in staat om buiten de gebaande paden te denken.
8. Ik ben enthousiast als het gaat om sales.
9. Ik ben in staat om het vertrouwen van een klant te winnen.
10. Ik ben in staat om altijd eerlijk te zijn naar een klant in wat ik voor hem/haar kan betekenen
11. Ik kan de klant helder en concreet vertellen wat ik van hem/haar verwacht en wat hij/zij van mij kan verwachten.
12. Ik ben zelfverzekerd in mijn klantgesprekken.
13. Ik kan een gestructureerd gesprek met de klant voeren.
14. Ik kan inspelen op de verschillende typen mensen die ik tegenover me heb.
15. Ik weet wat precies wat mijn organisatie in zijn geheel allemaal te bieden heeft.
16. Ik kan bedrijven overtuigen van de toegevoegde waarde van mijn organisatie.
17. Ik kan verschillende overtuigingstechnieken inzetten in mijn klantgesprekken.
18. Ik kan verschillende onderhandelingstechnieken inzetten in mijn klantgesprekken.
19. Ik heb veel doorzettingsvermogen
20. Ik sta volledig achter de producten/diensten die ik verkoop.
21. Ik ben me bewust van mijn sterke en zwakke punten op het gebied van sales.
22. Ik weet wat onze concurrentie doet.

Appendix 3: Absolute survey

Vragenlijst Passie & Resultaten in Sales

Geslacht: man/vrouw Geboortedatum (dd/mm/jjjj) : ……/……/……* Groep: ……

* Omdat we jouw antwoorden op deze vragenlijst graag willen koppelen aan jouw antwoorden op een vragenlijst tijdens de volgende trainingssessie vragen we je naar de bovenstaande gegevens. Deze gegevens zullen nooit gebruikt worden om de antwoorden terug te herleiden naar jou als persoon. De gegevens zullen geheel anoniem verwerkt worden.

Zou je willen aangeven in welke mate je het eens bent met de volgende uitspraken? *Probeer niet te lang over elke vraag na te denken.*

		zeker niet	**niet**	**neutraal**	**wel**	**zeker wel**
1	Ik ben in staat om volledig te achterhalen wat de klant echt wil.	O	O	O	O	O
2	Ik herken de achterliggende boodschap in een klantgesprek.	O	O	O	O	O
3	Ik heb een proactieve houding.	O	O	O	O	O
4	Ik ben oprecht geïnteresseerd in de klant en zijn organisatie.	O	O	O	O	O
5	Ik wil de klant echt helpen.	O	O	O	O	O
6	Ik durf alle vragen te stellen die relevant zijn in een gesprek.	O	O	O	O	O
7	Ik ben in staat om buiten de gebaande paden te denken.	O	O	O	O	O
8	Ik ben enthousiast als het gaat om sales.	O	O	O	O	O
9	Ik ben in staat om het vertrouwen van een klant te winnen.	O	O	O	O	O
10	Ik ben in staat om altijd eerlijk te zijn naar een klant in wat ik voor hem/haar kan betekenen.	O	O	O	O	O
11	Ik kan de klant helder en concreet vertellen wat ik van hem/haar verwacht en wat hij/zij van mij kan verwachten.	O	O	O	O	O
12	Ik ben zelfverzekerd in mijn klantgesprekken.	O	O	O	O	O
13	Ik kan een gestructureerd gesprek met de klant voeren.	O	O	O	O	O
14	Ik kan inspelen op de verschillende typen mensen die ik tegenover me heb.	O	O	O	O	O
15	Ik weet precies wat de organisatie in zijn geheel allemaal te bieden heeft.	O	O	O	O	O
16	Ik kan bedrijven overtuigen van de toegevoegde waarde van mijn organisatie.	O	O	O	O	O
17	Ik kan verschillende overtuigingstechnieken inzetten in mijn klantgesprekken.	O	O	O	O	O
18	Ik kan verschillende onderhandelingstechnieken inzetten in mijn klantgesprekken.	O	O	O	O	O
19	Ik heb veel doorzettingsvermogen.	O	O	O	O	O
20	Ik sta volledig achter de producten/diensten die ik verkoop.	O	O	O	O	O
21	Ik ben me bewust van mijn sterke en zwakke punten op het gebied van sales.	O	O	O	O	O
22	Ik weet wat onze concurrentie doet.	O	O	O	O	O

Zou je willen aangeven hoe vaak iedere uitspraak op jou van toepassing is? *Probeer niet te lang over elke vraag na te denken.*

Code	0	1	2	3	4	nvt
Betekenis	nooit	af en toe	regelmatig	meestal	(vrijwel) altijd	*

* De keuze "niet van toepassing" (nvt) kun je gebruiken wanneer deze actie in jouw huidige functie niet relevant is.

		0	**1**	**2**	**3**	**4**	**nvt**
1	Ik laat zien met de (prospectieve) klant mee te denken.	O	O	O	O	O	O
2	Ik doe voorstellen die aansluiten op de behoefte van de klant.	O	O	O	O	O	O
3	Ik zoek naar oplossingen die ook op de lange termijn bevredigend zijn voor de (prospectieve) klant.	O	O	O	O	O	O
4	Ik onderzoek in een gesprek steeds weer de verdere behoefte van de klant.	O	O	O	O	O	O
5	Ik raadpleeg voortdurend contacten of ander relevante bronnen (zoals kranten en internet) om op de hoogte te blijven van de behoeften en wensen van mijn (prospectieve) klanten.	O	O	O	O	O	O
6	Ik laat zien op de hoogte te zijn van de interne organisatie, markten en producten/diensten van de klantorganisatie.	O	O	O	O	O	O
7	Ik verander zaken in mijn werkproces om iets sneller te kunnen doen of om betere resultaten te kunnen behalen.	O	O	O	O	O	O
8	Ik onderzoek of de klant volledig tevreden is over de geleverde kwaliteit.	O	O	O	O	O	O
9	Ik sluit deals met klanten.	O	O	O	O	O	O
10	Ik benader actief potentiële klanten.	O	O	O	O	O	O
11	Ik verkoop naast producten/diensten die de directe aanleiding waren voor het gesprek ook andere producten/diensten.	O	O	O	O	O	O
12	Ik luister goed naar de (prospectieve) klant en bepaal zo telkens opnieuw de behoefte.	O	O	O	O	O	O
13	Ik toon oprecht interesse in de klant en ben niet direct gefocust op het behalen van een sales resultaat.	O	O	O	O	O	O
14	Ik maak duidelijke afspraken met de klant, waardoor de klant precies weet waar hij aan toe is.	O	O	O	O	O	O
15	Ik kom afspraken die ik gemaakt heb met de klant altijd na.	O	O	O	O	O	O
16	Ik heb een relatie met de klant op basis van gelijkwaardigheid.	O	O	O	O	O	O
17	Ik maak gebruik van mijn netwerk (binnen en buiten de organisatie) om aan de behoefte van de klant te voldoen.	O	O	O	O	O	O
18	Ik onderzoek voorafgaand aan een gesprek wat er speelt in de klantorganisatie en sluit hier in het gesprek op aan.	O	O	O	O	O	O
19	Ik denk buiten de kaders van de organisatie wanneer dit het sales resultaat verhoogt.	O	O	O	O	O	O
20	Ik doe gemakkelijk een zakelijk voorstel in een klantgesprek.	O	O	O	O	O	O
21	Ik ga actief op potentiële klanten af en als er potentie is houd ik net zo lang vol totdat het gelukt is.	O	O	O	O	O	O
22	Ik verkoop ook producten/diensten van de organisatie die niet onder mijn eigen unit vallen.	O	O	O	O	O	O

Appendix 4: Relative survey

Vragenlijst 2 - Passie & Resultaten in Sales

Geslacht: man/vrouw Geboortedatum (dd/mm/jjjj) : ……/……/……* Groep: ……

* Omdat we jouw antwoorden op deze vragenlijst graag willen koppelen aan jouw antwoorden op de vragenlijst die je tijdens de vorige trainingssessie hebt ingevuld vragen we je naar de bovenstaande gegevens. Deze gegevens zullen nooit gebruikt worden om de antwoorden terug te herleiden naar jou als persoon. De gegevens zullen geheel anoniem verwerkt worden.

Zou je willen aangeven of deze stellingen naar aanleiding van de afgelopen trainingsbijeenkomst minder, gelijk of meer van toepassing op jou zijn?

		veel minder	**minder**	**gelijk**	**meer**	**veel meer**
1	Ik ben in staat om volledig te achterhalen wat de klant echt wil.	O	O	O	O	O
2	Ik herken de achterliggende boodschap in een klantgesprek.	O	O	O	O	O
3	Ik heb een proactieve houding.	O	O	O	O	O
4	Ik ben oprecht geïnteresseerd in de klant en zijn organisatie.	O	O	O	O	O
5	Ik wil de klant echt helpen.	O	O	O	O	O
6	Ik durf alle vragen te stellen die relevant zijn in een gesprek.	O	O	O	O	O
7	Ik ben in staat om buiten de gebaande paden te denken.	O	O	O	O	O
8	Ik ben enthousiast als het gaat om sales.	O	O	O	O	O
9	Ik ben in staat om het vertrouwen van een klant te winnen.	O	O	O	O	O
10	Ik ben in staat om altijd eerlijk te zijn naar een klant in wat ik voor hem/haar kan betekenen.	O	O	O	O	O
11	Ik kan de klant helder en concreet vertellen wat ik van hem/haar verwacht en wat hij/zij van mij kan verwachten.	O	O	O	O	O
12	Ik ben zelfverzekerd in mijn klantgesprekken.	O	O	O	O	O
13	Ik kan een gestructureerd gesprek met de klant voeren.	O	O	O	O	O
14	Ik kan inspelen op de verschillende typen mensen die ik tegenover me heb.	O	O	O	O	O
15	Ik weet precies wat de organisatie in zijn geheel allemaal te bieden heeft.	O	O	O	O	O
16	Ik kan bedrijven overtuigen van de toegevoegde waarde van mijn organisatie.	O	O	O	O	O
17	Ik kan verschillende overtuigingstechnieken inzetten in mijn klantgesprekken.	O	O	O	O	O
18	Ik kan verschillende onderhandelingstechnieken inzetten in mijn klantgesprekken.	O	O	O	O	O
19	Ik heb veel doorzettingsvermogen.	O	O	O	O	O
20	Ik sta volledig achter de producten/diensten die ik verkoop.	O	O	O	O	O
21	Ik ben me bewust van mijn sterke en zwakke punten op het gebied van sales.	O	O	O	O	O
22	Ik weet wat onze concurrentie doet.	O	O	O	O	O

Zou je voor de onderstaande stellingen willen aangeven of deze stelling in de afgelopen maand (sinds de afgelopen trainingsbijeenkomst) minder, gelijk of meer van toepassing op jou geworden?

1 De keuze "niet van toepassing" (nvt) kun je gebruiken wanneer deze actie in jouw huidige functie niet relevant is.

		veel minder		**gelijk**		**veel meer**	**nvt[1]**
1	Ik laat zien met de (prospectieve) klant mee te denken.	O	O	O	O	O	O
2	Ik doe voorstellen die aansluiten op de behoefte van de klant.	O	O	O	O	O	O
3	Ik zoek naar oplossingen die ook op de lange termijn bevredigend zijn voor de (prospectieve) klant.	O	O	O	O	O	O
4	Ik onderzoek in een gesprek steeds weer de verdere behoefte van de klant.	O	O	O	O	O	O
5	Ik raadpleeg voortdurend contacten of ander relevante bronnen (zoals kranten en internet) om op de hoogte te blijven van de behoeften en wensen van mijn (prospectieve) klanten.	O	O	O	O	O	O
6	Ik laat zien op de hoogte te zijn van de interne organisatie, markten en producten/diensten van de klantorganisatie.	O	O	O	O	O	O
7	Ik verander zaken in mijn werkproces om iets sneller te kunnen doen of om betere resultaten te kunnen behalen.	O	O	O	O	O	O
8	Ik onderzoek of de klant volledig tevreden is over de geleverde kwaliteit.	O	O	O	O	O	O
9	Ik sluit deals met klanten.	O	O	O	O	O	O
10	Ik benader actief potentiële klanten.	O	O	O	O	O	O
11	Ik verkoop naast producten/diensten die de directe aanleiding waren voor het gesprek ook andere producten/diensten.	O	O	O	O	O	O
12	Ik luister goed naar de (prospectieve) klant en bepaal zo telkens opnieuw de behoefte.	O	O	O	O	O	O
13	Ik toon oprecht interesse in de klant en ben niet direct gefocust op het behalen van een sales resultaat.	O	O	O	O	O	O
14	Ik maak duidelijke afspraken met de klant, waardoor de klant precies weet waar hij aan toe is.	O	O	O	O	O	O
15	Ik kom afspraken die ik gemaakt heb met de klant altijd na.	O	O	O	O	O	O
16	Ik heb een relatie met de klant op basis van gelijkwaardigheid.	O	O	O	O	O	O
17	Ik maak gebruik van mijn netwerk (binnen en buiten de organisatie) om aan de behoefte van de klant te voldoen.	O	O	O	O	O	O
18	Ik onderzoek voorafgaand aan een gesprek wat er speelt in de klantorganisatie en sluit hier in het gesprek op aan.	O	O	O	O	O	O
19	Ik denk buiten de kaders van de organisatie wanneer dit het sales resultaat verhoogt.	O	O	O	O	O	O
20	Ik doe gemakkelijk een zakelijk voorstel in een klantgesprek.	O	O	O	O	O	O
21	Ik ga actief op potentiële klanten af en als er potentie is houd ik net zo lang vol totdat het gelukt is.	O	O	O	O	O	O
22	Ik verkoop ook producten/diensten van de organisatie die niet onder mijn eigen unit vallen.	O	O	O	O	O	O

Appendix 5: Correlation table for single competencies

Table 5.

Correlation of single competencies with training and critical behaviour and the reliabilities.

	Training	**Critical behaviour**
Single competency 1	-.056	.282***
Single competency 2	.157*	.213**
Single competency 3	.149*	.345***
Single competency 4	-.090	.079
Single competency 5	-.059	.002
Single competency 6	.018	.323***
Single competency 7	.089	.356***
Single competency 8	.048	.364***
Single competency 9	.047	.108
Single competency 10	.038	.251**
Single competency 11	.165*	.309***
Single competency 12	.222**	.287***
Single competency 13	.121	.242**
Single competency 14	.198**	.185*
Single competency 15	.135	.292***
Single competency 16	.246**	.296***
Single competency 17	.338***	.373***
Single competency 18	.408***	.339***
Single competency 19	.112	.142*
Single competency 20	.075	.204**
Single competency 21	.299***	.209**
Single competency 22	.146*	.262**

Note. *p<.05, **p<.01, ***p<.001