

Prerequisites to guarantee life-long employability

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Abstract *Can employees in possession of a high degree of professional expertise look forward to unlimited mobility and employability? Are they able to cope easily with new job assignments and re-employment in different fields? These thought-provoking questions and others are well worthwhile further investigation. In view of improvements in human resource management, it would seem of importance to find out to what extent their career performance is exemplary and whether it should be imitated. For this reason, this article discusses the relationship between five dimensions of professional expertise and the degree of future employability of 406 higher level employees. The central position is that the possession of expertise is necessary to guarantee employability throughout the career.*

Introduction

Recently, the concept of employability (the capability of being employed in a job) has received a lot of attention both in organisations and in the media (Gaspersz and Ott, 1996; Van Dam, 1998). Employability or functional flexibility allows employers to achieve a more effective internal allocation of labour through improved deployment (Atkinson, 1984).

In terms of mobility enhancement, it seems wise to both acquire more than one area of professional expertise within adjacent or radically different fields, and to acquire a strategy, in order to be able to master a new area of expertise in another territory as quickly as possible. It is, after all, exceptionally difficult, if not impossible, to predict the progress of every individual career. Many changes and transitions (Barton, 1982) take place suddenly and unpredictably. It is therefore equally difficult to predict what type of professional expertise will be needed at a later stage.

One should bear in mind that actual experience in acquiring more than one area of expertise is a basic condition for the efficient acquisition of and ability to master a strategy for developing new areas of expertise. Horizontal mobility would be refreshing for the employee and profitable for the organisation. On the one hand, professional expertise reaches other parts of the organisation, while at the same time the employee is enabled to expand, supplement and renew his or her knowledge and skills.

Yet, the tension between specialised expertise and more transferable expertise will endure as long as companies value the contribution of experts who are long-term incumbents in their job. Management persists in high-level performance in the here-and-now while at the same time it has to keep an eye on investment in career development to enable future high-level performance (see also Arnold, 1997; Arthur and Rousseau, 1996; Herriot and Stickland, 1996; Newell, 2000).



Current HRM policies and practices are under immense pressure and there is an urgent need for empirical data on the content and context of the psychological contract (Anderson and Schalk, 1998; Hall and Mirvis, 1995; Waterman *et al.*, 1994). “The old contract was forged in a period of full employment, stability, growth, and predictability and was built on steady financial rewards, investment in training, and expectations of advancement in return for hard work and loyalty (an exchange of compliance for security). The new contract revolves around a motivational currency of job enrichment and competency development. Promotion is more opportunistic and less time-served. Those who perform get rewarded, with both increased responsibility and accountability.” (Sparrow, 1996, p. 480). In order to understand which knowledge and skills are important in order to “stay on the run”, the concept of professional expertise (competence) will be explained in the next section.

The definition of professional expertise

In this section a multi-dimensional operationalisation of the concept of professional expertise will be dealt with. A multi-dimensional approach for the measurement of professional expertise is useful for at least three reasons. Firstly, as individuals continue in their career, their knowledge and skills become increasingly differentiated and specialised. The wide variety of experiences accrued by professional development results in a certain degree of expertise in various domains and in different aspects. A multi-dimensional operationalisation permits the measurement and comparison of performance levels attained in these different domains and in relation to these different aspects.

Secondly, a multi-dimensional approach is useful in identifying those components most in need of being updated. It is likely that the level of competence attained by an expert varies with respect to these different components. Throughout his or her career he or she may remain competent in some dimensions but less competent in others.

Thirdly, a multi-dimensional approach is useful in examining how specific factors in the individual or in the working environment support or limit performance in particular expertise elements. Up to now little research has been done aimed at examining the relationships between specific influential factors and particular dimensions of professional expertise (see Van der Heijden, 1998 for the results of a study into the relationship between individual, job-related and organisational factors on the one hand and professional expertise on the other).

A multi-dimensional operationalisation of the concept of professional expertise should in any case comprise the different types of knowledge that are inherent to a certain professional field. These different types of knowledge are declarative knowledge (“knowing that”), procedural knowledge (“knowing how”) and conditional knowledge (“knowing when and where or under what conditions”) (Alexander *et al.*, 1991). The intended dimension is termed the knowledge dimension and is closely related to the second dimension, called the meta-cognitive knowledge dimension (“knowing about knowing” or “knowing

that one knows"). This second dimension, that has to do with self-insight or self-consciousness, is known by a wide variety of names: meta-cognitive knowledge, meta-knowledge, executive control knowledge, self-knowledge, regulative knowledge and meta-cognitive strategic knowledge, to mention but a few (see also Flavell, 1976).

The third dimension has to do with the skills an employee needs to perform the required professional tasks. Once the activities and responsibilities have been defined, it is clear which skills are necessary to perform a given job. A person can only be referred to as an expert if his or her overt behaviour demonstrates the capacity to perform well in a particular domain. This third component of professional expertise is called the dimension of skill requirement.

The three dimensions that have been discussed so far are fairly commonplace to earlier conceptualisations of the construct of expertise (Bereiter and Scardamalia, 1993; Chi *et al.*, 1988; Ericsson, 1996; Ericsson and Smith, 1991). Nevertheless, we do not share the opinion that expertise is fully explained by these three dimensions (Boerlijst *et al.*, 1996; Van der Heijden and Boerlijst, 1997). Measurement of cognitive abilities and skills is not enough to fully cover the construct of professional development (Ericsson and Lehmann, 1996; Trost, 1993). Motivational aspects and self-insight, as well as social skills, social recognition and growth capacities are important interactors and moderators. That is to say, there is a compelling reason for the proposal of a broader type of measurement, in which cognitive abilities and overt skills play an explicit, but partial role (Van der Heijden, 1997). Thus, there is a need for alternative perspectives for the measurement of expertise.

Expertise can only exist by virtue of being respected by knowledgeable people in the organisation. There are a lot of people who have a vast amount of knowledge and/or skills. However, not all of them can be considered highly skilled or experts, owing to a lack of social intelligence, communicative skills and so on (Tomic and Van der Molen, 1997). This fourth important aspect of professional expertise can be labelled the dimension of acquirement of social recognition. For the development of professional expertise, it is very important to be recognised as a promising employee. From our earlier study, "Over-forties in the organisation", we have concluded that the possibility to experience further development correlates closely with the reputation a person has within the organisation (Boerlijst *et al.*, 1993).

A fifth dimension that has been added to previous conceptualisation frameworks is the dimension of growth and flexibility. People who are capable of acquiring more than one area of expertise within adjacent or radically different fields, or who are capable of acquiring a strategy to master a new area of expertise or expert performance in another territory can be termed "flexperts" (Van der Heijden, 1996). These are people who are both flexible and in possession of expertise.

They are, for example, good at adjusting flexibly to technological changes and they demonstrate that they know how to respond quickly and alertly at times when there are opportunities in adjacent areas.

Theoretical background and hypotheses

From the study, "Over-forties in the organisation" (Boerlijst, 1994; Boerlijst and Van der Heijden, 1996; Boerlijst *et al.*, 1993), we have been able to conclude that many highly qualified employees are confronted with a drawback, namely a progressively declining degree of re-employability when entering later stages of their career. What is meant here is re-employment in a function that is different from the present one in the sense that it involves other tasks and calls for different skills and expertise.

Immobility (meant here in its functional, not in a geographical sense) is perhaps no problem for employees who perform reasonably well and for whom it can be predicted that their present function or position will not alter very much and will not lose its significance or importance for the organisation during their remaining career. In former times this was the rule, not the exception. Nowadays in most companies and organisations it is just the reverse (see also Boerlijst *et al.*, 1993).

Reshuffling of targets and aims, reorganisations and transformations of departments, positions and functions are the order of the day, because of changing markets, technology, etc. (Arnold, 1997; Arthur and Rousseau, 1996). Quite a few "traditional" functions lose their utility suddenly and often unexpectedly. For the employees involved, this can imply losing their present job and having to look out for something different, within or outside their company. If their existing expertise and skills are not wanted or needed elsewhere, and if they lack the ability, flexibility or motivation to face a more or less new functional field, with new work targets and demands of different skills and expertise, then they are in serious trouble. Their immobility means that they cannot be placed in another job or position without serious loss of productivity. Acquiring the skills and expertise needed for a new, unfamiliar job invariably calls for serious investments in time and money, at least where this job is not built up of highly routine-based tasks, and in terms of position and income comparable with the one lost.

The estimate of employability in the above-mentioned study (Boerlijst, 1994; Boerlijst and Van der Heijden, 1996; Boerlijst *et al.*, 1993) was a composite measure. The variable reflects the time an employee has already spent in his or her present function as well as the likelihood, according to his or her supervisor, that the employee will be given a different function in the near future. An employee is thought to be highly employable if the time spent in his or her function is very short, that is to say less than two years, and if it is likely that he or she will be given move to another function in the foreseeable future, that is to say within the next five years. On the other hand, an employee is thought to be completely unemployable if he or she has already held the present function for over seven years and is envisaged as remaining in that function for at least another five years.

The study has shown that the employability of employees of 40-46 is estimated as being low to very low in the case of half of them. The situation becomes worse as employees grow older. The senior group of the over-50s is

thought of as almost completely unemployable. Upward mobility, in particular, seems to be impossible for many older workers. Fifty-five percent of the employees of 40-52 at the middle level and 40 percent of those at the higher level are considered by the superior to be at "the top of their ability." In the case of the employees of 53 and older, this percentage is around 90. Transition to a higher function is deemed no longer to be feasible for these persons.

In the study that is reported in this article, a high degree of employability means that in the following five years, there is a good likelihood of moving to another upward or equivalent function in the same or different domains as the present job. The scale items will be given in the section on the research methodology. In conformance with our earlier research results, the first hypothesis in the study reads that there is a negative relationship between age and the degree of employability (*H1*).

We assume that the absence of relevant expertise and too sluggish a development of new skills and expert performance close off paths to re-employment in new job fields. The extent of professional knowledge (*H2*) and meta-cognitive knowledge (*H3*) as well as skills (*H4*) are important in this respect. Moreover, the extent of acknowledgement or social recognition (*H5*) that the employee commands determines the likelihood of transition.

In this connection, learning strategies for mastering new expertise and the transferability of these are seen as important in the context of continuing to be a valuable employee. Since the life-cycles of occupations and functions offered by organisations have shortened tremendously in the last 20 years, the mastering of these learning and coping strategies is relevant in the case of all employees regardless of age. That is to say, the relationship between the dimension of growth and flexibility and the degree of employability is expected to be positive as well (*H6*).

As far as the relationships between the five dimensions of professional expertise and employability are concerned, no interactions are predicted.

Research methodology

Respondents and data collection

In each organisation involved in this study, once the agreement was made to participate, I had a discussion with a representative from the personnel department. There was an explanation of the criteria for participation and we identified samples of employees, and their immediate supervisors, appropriate for our questionnaires. These criteria concerned the minimum level of functioning of the employees (middle or higher level employees), with the target of an equal distribution over three age groups (20-34 years, 35-49 years and 50+) and a reflection of different types of existing functions in the organisation. We asked the respondents to indicate their present level of functioning. This characteristic was measured by one item scored on a seven-point scale ranging from 1 (lower vocational level) to 7 (academic level). The categories (based on the Dutch vocational education system) were re-categorised into three levels of functioning: lower level, middle level and higher level. Because our sample

consisted of people from middle and higher levels of functioning, nobody indicated a function at a lower level. This category was only used to check whether all the respondents corresponded to our intended sample: namely the middle and higher level employees.

The reason for limiting selection to employees active at least at a middle level of functioning or in a middle management position and not employees from lower levels was explained earlier by Boerlijst *et al.* (1993) in their research on the over-forties. Looking for study data which can be generalised for application in the future, we made allowances for the possibility that the present workers, particularly the older ones, will be difficult to compare, on one point at least, with the employees who will be populating our companies in 20 years' time. Until 20 years ago, simple functions and simple tasks were dominant in most working organisations. As a consequence, the bulk of older employees in our existing working population have a rather low level of education. As the complexity and level of difficulty of future functions will on average be higher than it is now, we have every reason to expect that the average educational level will likewise have undergone a sharp rise by the year 2010. The immense changes in the business environment, implying the globalisation of businesses, the consequent opening up of new markets, the advances in information technology and the growth of consumerism have all added to the competitive pressures which working organisations face (Hamel and Prahalad, 1994).

As we are particularly interested in the consequences of growing older, we decided to make a comparison of three successive age groups of the working population, namely the starters (20-34 years), the middle-aged (35-49 years) and the seniors (50+). In this way the whole professional career has been covered by comparing these three age groups.

The category of employees aged 35-49 years roughly corresponds to a category that is indicated in the term "mid-career" (Hunt and Collins, 1983; Janssen, 1992). Psychogerontological research has shown that the midlife experience is not strictly bound to a particular age. Some people already experience major changes in their thirties (mid-thirty crisis) whilst others only note them when they are 40 or almost 50 (Munnichs, 1989, p. 224). In order to make a division into age groups with a similar range and at the same time framing a division with a separate category for these middle-aged employees, the above-mentioned division was proposed. In Table I, the number of respondents for each organisation is given. A subdivision is made for the two different data sources: the employees and their corresponding immediate supervisors.

Despite the effort to obtain a balanced division of the two sexes in this study, from the total sample 83.4 per cent of the respondents are male and 16.6 per cent are female. However, it is generally known that in the higher regions of the organisation most functions are fulfilled by men. In this respect, the composition of our sample can be interpreted as an advantage because the

Table I.

Number and response rate of employees and supervisors, per organisation

Organisation	Number and response rate of self-ratings (n (%))	Number and response rate of supervisor ratings (n (%))
Akzo Nobel	93 (30.5)	94 (39.7)
Hewlett Packard	42 (65.6)	48 (75.0)
Ministry of Justice	53 (31.4)	41 (24.3)
Ministry of Transport, Public Works and Water Management	64 (37.2)	82 (47.7)
Philips Communications and Processing Services	81 (25.4)	60 (18.8)
Rabobank Organisation	72 (75.0)	79 (82.0)
Unilever Research Laboratory	135 (35.0)	33 (25.6)
University of Twente	19 (100.0)	17 (89.5)
Total	559 (50.0)	454 (50.3)

division is in fact really representative for the actual situation in Dutch working organisations and consequently more accurate.

The age distribution in the final sample of individual employees is as follows: starters 27.4 per cent, middle-aged 45.8 per cent and seniors 26.8 per cent, while the distribution according to level of functioning is: middle level 24.9 per cent and higher level 75.1 per cent.

The survey

In the survey, three types of questionnaires have been used to determine the relationship between professional expertise and employability. Questionnaire A pertains to the self-ratings of professional expertise and had to be filled in by the individual employee while item set B had to be filled in by the corresponding immediate supervisor. Item sets A and B are nominally identical, except for the fact that the items in the self-ratings questionnaire refer to the employee him or herself, and the ones in the questionnaires for the supervisors refer to a particular employee. Questionnaire C examines among other things the amount of employability and was only filled in by the employees. They seem to be in the best position to account for the likelihood of employability. It is their evaluation of possibilities to move to another job that matters.

For the measurement of professional expertise a questionnaire was used consisting of 78 items in total (Van der Heijden, 1998). All items refer to attributes or behaviours typically attributed to experts or outstanding performers in various field. Each item referred to one of the five dimensions. In administering the questionnaire to the supervisors, all items were adjusted into sentences like: "In that period my employee fulfilled the role of mentor for . . ." and "I think that my employee is . . . at adjusting flexibly to technological changes". A six-point rating scale was added to each item rating from 1 ("very little", "never", "not at all", "very small", "very uncertain" and so on) to 6 ("very great deal of", "very often", "extremely", "to a considerable degree", "very large",

“highly unsuitable”, “very good” and so on – wording dependent on item content) on which an individual’s assumed position, relative to the item in question, could be measured.

For a full version of the questionnaire (the original Dutch version and its English translation) one is referred to Van der Heijden (2000). For a thorough outline on the operationalisation of the concept of professional expertise in five measurement scales, the descriptives and psychometric evaluation from both a pilot study as well as the main study, see Van der Heijden, 1998 and Van der Heijden, 2000. In Table II the reliability coefficients, using Cronbach’s α are given.

It appears that we have succeeded in constructing a seemingly valid and reliable multitrait instrument for measuring degrees of individual expert performance. Both for the self-ratings and for the supervisor ratings, the scales appear to be very homogeneous and demonstrate highly acceptable levels of internal consistency. Expertise is considered to be a multi-dimensional quality. The five dimensions are not fully mutually exclusive; they represent correlated aspects of expertise. This is why the representation, i.e. the factor structure is oblique rather than orthogonal.

There is a considerable overlap in the meaning of the scales, given the relatively high inter-scale correlations, but the distinctive power of the different scales is satisfactory, given the higher intra-scale correlations and the remaining outcomes of the multitrait-multimethod analysis and the quantitative validation studies, regarding the convergent and discriminant validity (Van der Heijden, 1998, 2000).

For each scale of professional expertise, the reliability of the supervisor ratings is higher compared with that of the self-ratings. It has been suggested (Van der Heijden, 1998) that the greater directional diversity (lower inter-item coefficients) of the self-ratings does not prove that employees give a less valid, but rather a somewhat more differentiated self-image. Each item refers to different behaviour, a different behavioural style or a different outcome. Moreover, we have to bear in mind the fact that supervisors, although responsible, tend to be only superficially acquainted with their employees, especially as far as the higher level employees are concerned (see also Boerlijst, 1994; Boerlijst *et al.*, 1993).

Knowledge and meta-cognitive knowledge of a given employee are perhaps the most difficult person-bound factors for other people to assess validly and

Scale	Number of items	Alpha self-ratings	Alpha supervisor ratings
Knowledge	17	0.83	0.93
Meta-cognition	15	0.86	0.94
Skill requirement	12	0.84	0.94
Social recognition	15	0.83	0.94
Growth and flexibility	19	0.87	0.93

Table II.
Reliability coefficients
of each scale as
expressed by
Cronbach’s α

supervisors may find this somewhat problematic. This is why we preferred to use the self-ratings for the scales of knowledge and meta-cognitive knowledge. As far as the quantity of skills, social recognition and growth and flexibility are concerned, the assessments made by the supervisor were used. Skills, apparent from overt behaviour, an evaluation of the degree of acknowledgement and an estimate of a person's growth potential are attributes that we preferred to be assessed by the individual's immediate supervisor – the one who is in general expected to deliver the annual performance review.

For the measurement of the dependent variable "employability" 8 items have been used, with the following formulation: "What is the likelihood of transition to . . . ?" The type of job transition on the dotted line being respectively; another job in the same domain as the employee's present job, another job in another domain as the employee's present job, a higher job in the employee's own job domain, a higher job in the employee's own organisation or concern, a higher job outside the employee's organisation or concern, an equivalent job in the employee's own organisational unit, an equivalent job in the employee's own organisation or concern, an equivalent job outside the employee's organisation or concern. For each item a four-point rating scale has been ranging from 1 (very unlikely) to 4 (very likely). The reliability index, using Cronbach's α , for the total item-set is 0.68.

Results

The first section describes the differences in the degree of employability in the three age groups. The relationship between the scales of professional expertise and the degree of employability is examined in the next section. Because of the need to delineate the amount of work required within the framework of the study as a whole (Van der Heijden, 1998), we decided to restrict ourselves to data on higher level employees. Based on our insights obtained via the study "Over-forties in the organisation" (Boerlijst *et al.*, 1993), we concluded that middle and higher level employees should be treated as two separate categories in our analyses. Because of the differences in management's attitude towards, approach to and treatment of these two categories, repercussions regarding the expertise ratings were expected.

Differences in the degree of employability in three successive career stages

The group means for the interval scale variable employability are respectively 18.89 (SD 2.70) for the starters ($n = 113$), 17.71 (SD 3.72) for the middle-aged ($n = 190$) and 13.80 (SD 4.05) for the seniors ($n = 103$). In order to gain greater insight into the relationship between age and the different types of employability, the frequency distribution for the different types of employability has also been depicted in Table III.

In accordance with our earlier study on the over-forties (Boerlijst, 1994; Boerlijst *et al.*, 1993) we are able to conclude that the degree of employability, especially in a job in another domain or to a higher level of functioning, sharply diminishes with age.

Scale items	Answer category	Starters (<i>n</i> = 115) (<i>n</i> (%))	Middle-aged (<i>n</i> = 191) (<i>n</i> (%))	Seniors (<i>n</i> = 112) (<i>n</i> (%))
What is the likelihood of transition to another job in the same domain as your present job?	Very unlikely	10 (8.8)	25 (13.2)	32 (29.6)
	Not very likely	30 (26.5)	49 (25.8)	29 (26.9)
	Fairly likely	43 (38.1)	77 (40.5)	35 (32.4)
	Very likely	30 (26.5)	39 (20.5)	12 (11.1)
What is the likelihood of transition to another job in another domain as your present job?	Very unlikely	12 (10.6)	30 (15.8)	47 (45.6)
	Not very likely	31 (27.4)	75 (39.5)	32 (31.1)
	Fairly likely	48 (42.5)	71 (37.4)	20 (19.4)
	Very likely	22 (19.5)	14 (7.4)	4 (3.9)
What is the likelihood of transition to a higher job in your own organisational unit?	Very unlikely	15 (13.3)	46 (24.2)	60 (56.1)
	Not very likely	37 (32.7)	84 (44.2)	33 (30.8)
	Fairly likely	47 (41.6)	44 (23.2)	12 (11.2)
	Very likely	14 (12.4)	16 (8.4)	2 (1.9)
What is the likelihood of transition to a higher job in your own organisation or concern?	Very unlikely	15 (13.3)	44 (23.3)	65 (60.7)
	Not very likely	38 (33.6)	75 (39.5)	29 (27.1)
	Fairly likely	44 (38.9)	57 (30.0)	12 (11.2)
	Very likely	16 (14.2)	14 (7.4)	1 (0.9)
What is the likelihood of transition to a higher job outside your organisation or concern?	Very unlikely	26 (23.0)	77 (40.5)	82 (76.6)
	Not very likely	46 (40.7)	75 (39.5)	19 (17.8)
	Fairly likely	35 (31.0)	35 (18.4)	5 (4.7)
	Very likely	6 (5.3)	3 (1.6)	1 (0.9)
What is the likelihood of transition to an equivalent job in your own organisational unit?	Very unlikely	46 (40.7)	53 (27.9)	30 (27.8)
	Not very likely	35 (31.0)	49 (25.8)	32 (29.6)
	Fairly likely	21 (18.6)	69 (36.3)	37 (34.3)
	Very likely	11 (9.7)	19 (10.0)	9 (8.3)
What is the likelihood of transition to an equivalent job in your own organisation or concern?	Very unlikely	27 (23.9)	30 (15.8)	38 (35.2)
	Not very likely	42 (37.2)	71 (37.4)	29 (26.9)
	Fairly likely	35 (31.0)	77 (40.5)	35 (32.4)
	Very likely	9 (8.0)	12 (6.3)	6 (5.6)
What is the likelihood of transition to an equivalent job outside your organisation or concern?	Very unlikely	45 (39.8)	78 (41.1)	78 (72.2)
	Not very likely	40 (35.4)	75 (39.5)	22 (20.4)
	Fairly likely	23 (20.4)	30 (15.8)	5 (4.6)
	Very likely	5 (4.4)	7 (3.7)	3 (2.8)

Table III.
Frequency distribution
and response rate in
higher level employees,
per age group for the
constituent items on
the scale of
“employability”

A one-way ANOVA was applied to test whether the predictor means in the three age groups are equal. This technique examines the variability of the observations within each group as well as the variability between the group means (Norusis, 1993, p. 269). There was a significant main effect of age in the amount of employability ($F = 61.38, p < 0.001$). Post-hoc multiple comparisons (using Scheffé's test) indicate that the starters are significantly more employable, compared with both the middle-aged ($t(289.36) = 3.17, p < 0.01$) and the seniors ($t(174.94) = 10.76, p < 0.001$). Furthermore, the middle-aged score significantly higher compared with the seniors ($t(291) = 8.33, p < 0.001$).

H1 is supported by this outcome. The relationship between age and employability is negative. The older the employee, the lower his or her employability.

Outcomes concerning the regression of employability on scales of professional expertise

In the regression analyses, the nominal scale variable “age” has been inserted into the regression equation by using dummy variables, and the predictor variable has been inserted as a covariate. Age cannot be ignored in studying the relationship between professional expertise and employability. From our study on age effects on expertise ratings (Van der Heijden, in press) we were able to conclude that age-related stereotyping is an important phenomenon where assessments concerning certain quality and performance aspects are made. By and large, supervisors have a more positive view concerning the capabilities of younger employees. Our data indicate that supervisors make a difference in evaluating the higher level over-fifties compared with the evaluation of the middle-aged and the starters. Employees themselves attach less importance to age than supervisors do.

Due to the before mentioned age-related stereotyping, we have focused on the question whether the dimensions of professional expertise have the same effect on the amount of employability in each age group. In other words, we have asked ourselves the question as to whether the interaction between age and a specific dimension of professional expertise is significant or whether the simple addition of the effects of both age and the predictor variable, i.e. the expertise dimension, is enough to predict the degree of employability.

The interaction effects were tested hierarchically. Firstly, a regression analysis without interaction was tested, and subsequently it was examined whether the interaction added a significant contribution. Where this is not the case, the results of the analysis without interaction terms are given and interpreted. Where the interaction is significant, the analysis including the interaction terms was interpreted. All regression analyses were performed at a 0.05 significance level.

The regression of employability on professional knowledge is not significant. The same has been found where meta-cognitive knowledge is the predictor variable. Both *H2* and *H3* must be rejected. However, where one of the other three dimensions of professional expertise is taken to be the predictor variable, interesting interactions between professional skills, social recognition and growth potential on the one hand and age in their effect on employability were observed? Tables IV-VI depict the results relating to the accompanying regression analyses. In Figures 1-3 the interaction effects are portrayed.

With these outcomes *H4-H6* must be rejected. Only in the case of the starters is the relationship between a particular dimension of professional expertise and the degree of employability positive and fairly strong. In the seniors, where the number of skills is the predictor, the relationship is negligible. Where the predictor is the extent of social recognition, the relationship seems to be weakly negative. When the degree of growth potential is the predictor, the relationship is weakly positive.

In the case of the middle-aged, the relationship is negative where skills or growth potential are the predictors, and negligible when the extent of social recognition is the predictor variable.

Conclusions and discussion

We appear to have succeeded in developing a reliable measurement instrument to measure degrees of professional expertise. All five scales are extremely homogeneous and the outcomes regarding the discriminant and convergent

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Variables	B-coefficient	β -coefficient	Employability		R^2	F
			ΔR^2	Multiple R		
1. Middle-aged	6.69 ^a	0.82 ^a				
2. Seniors	- 1.04 ^a	- 0.11 ^a	0.01			
3. Skills	1.14*	0.19*	0.02			
4. Middle-aged \times skills	- 1.75*	- 1.01*				
5. Senior \times skills	- 0.92 ^a	- 0.43 ^a	0.03	0.52	0.27	15.10 *** (df 5, 208)

Notes: $n = 214$. ^aNot significant. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table IV.
Hierarchical multiple regression analysis with employability as dependent variable and with age and skills as predictor variables

Variables	B-coefficient	β -coefficient	Employability		R^2	F
			ΔR^2	Multiple R		
1. Middle-aged	3.32 ^a	0.41 ^a				
2. Seniors	0.82 ^a	0.09 ^a	0.005			
3. Social recognition	1.05*	0.20*	0.02			
4. Middle-aged \times soc. recogn.	- 1.12 ^a	- 0.61 ^a				
5. Senior \times soc. recogn.	- 1.51*	- 0.65*	0.03	0.51	0.26	14.83 *** (df 5, 208)

Notes: $n = 214$. ^aNot significant. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table V.
Hierarchical multiple regression analysis with employability as dependent variable and with age and social recognition as predictor variables

Variables	B-coefficient	β -coefficient	Employability		R^2	F
			ΔR^2	Multiple R		
1. Middle-aged	8.27*	1.02*				
2. Seniors	- 1.47 ^a	- 0.16 ^a	0.02			
3. Growth and flexibility	1.48*	0.22*	0.02			
4. Middle-aged \times growth	- 2.42**	- 1.20**				
5. Senior \times growth	- 0.93 ^a	- 0.37 ^a	0.04	0.52	0.27	15.74*** (df 5, 208)

Notes: $n = 214$. ^aNot significant. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table VI.
Hierarchical multiple regression analysis with employability as dependent variable and with age and growth and flexibility as predictor variables

Figure 1.
Interaction effect
between “age” and “the
number of professional
skills”, with the degree
of employability as the
dependent

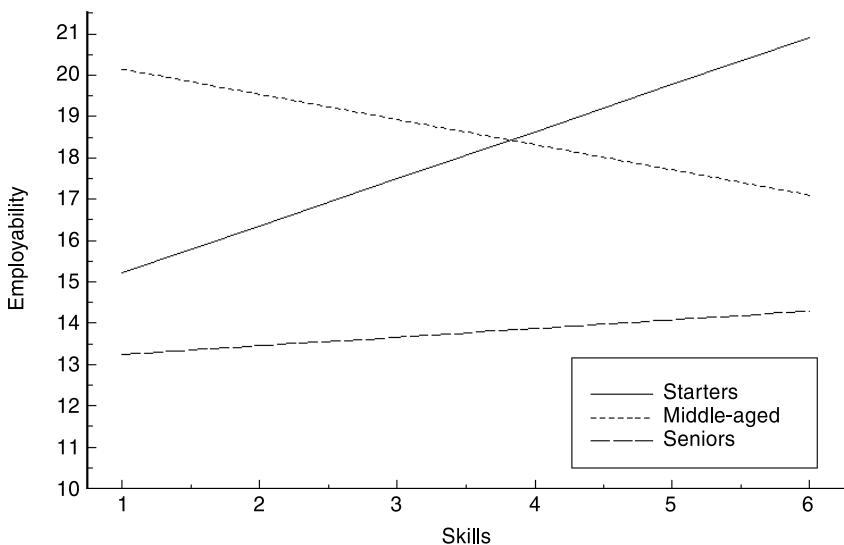
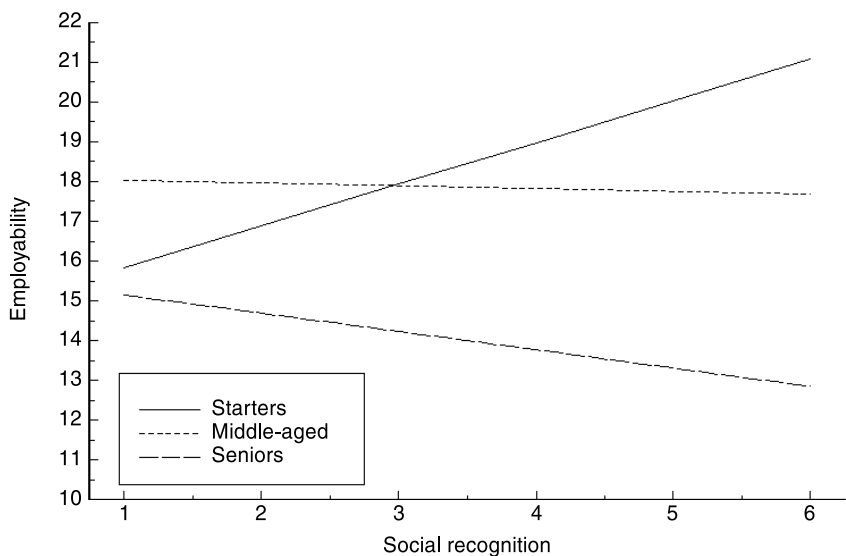


Figure 2.
Interaction effect
between “age” and “the
extent of social
recognition”, with the
degree of employability
as the dependent



validity indicate that the distinctive power of the five scales is satisfactory. A single factor seems by no means sufficient to explain the observed covariance matrices (see Van der Heijden, 1998, 2000) for all details regarding these aspects of the study.

Concerning the measurement scales on professional expertise, it would be interesting to investigate the degree of overlap between, on the one hand, performance indicators used in companies (for example assessment centres as simulation for management selection) and, on the other hand, the results obtained with the measurement instrument that has been developed in this study.

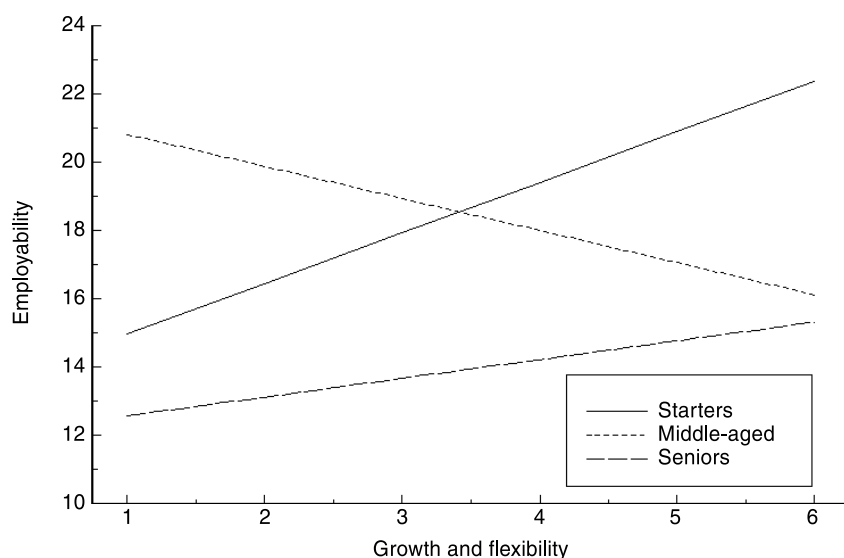


Figure 3.
Interaction effect
between “age” and “the
degree of growth and
flexibility”, with the
degree of employability
as the dependent

An interesting improvement of the measurements might consist of asking raters to give concrete examples of performances or behaviours of the ratees that could illustrate why they give a particular rating to a particular item. It is expected that a certain amount of sifting of responses occurs. The differentiation between item meanings will probably increase and the scale homogeneities will lessen, but the end result will be that the ratings will be explicitly founded on empirical verifiable observations of behaviour and performance.

If this proves successful, the validity of the instrument will increase and be easier to clarify. The latter refers to the fact that demonstrative examples given by raters could give an insight into the intrinsic content of professional expertise and expert performance available in an organisation. The way in which this can be done is by means of highly structured interviews. They are more dynamic in that possibilities for putting extra questions on a certain topic are within the researcher’s reach.

The items comprising the scale of “employability” not only refer to the adequacy of knowledge and skills but also to incentives and opportunities offered to employees in the light of an enhancement of their employability. Further research should indicate whether our measurements really pertain to the adequacy of capabilities of transfer, or whether they are strongly contaminated by the opportunities for transfer, on account of the situation pertaining in the job-market, or organisational structure. It is very well imaginable that next to indications of actual job transfer also labour market aspects, organisational characteristics, employee willingness and managerial perceptions and attitude, to mention but a few, have to be taken into account in order to make valid assessments of potential individual employability. An extensive literature study together with some in-depth interviews with highly

qualified and highly employable experts may lead to a refinement of the former conceptual framework and to an operationalisation of employability that is valuable in all kinds of domains employing professionals with varying levels of expertise (Van der Heijden, 1998).

Regarding the relationship between age and employability, it appears that the degree of employability indeed decreases with the age of the employee, especially where the transition to a new job field, or to a higher job is concerned.

In the context of the furtherance of the employee's degree of employability, we have found that, contrary to our expectations, the contributions of professional knowledge and meta-cognitive knowledge are not significant. However, regarding the other dimensions of professional expertise, some unexpected interaction effects have been found. In the starters, both the number of professional skills, the extent of social recognition and the degree of growth and flexibility are profitable in the context of their development of employability. In the middle-aged, the possession of skills or growth potential appears to be unfavourable, while the relationship between employability and social recognition is negligible. For the seniors, only the contribution of growth and flexibility appears to be relevant. The relationship between skills and employability is negligible while the relationship between social recognition and employability is slightly negative.

In order to be qualified for a transition to another job, starters should possess a large number of professional skills, they should be acknowledged by their supervisor, and the supervisor must have confidence in their growth potential. In the middle-aged, about the opposite seems to be the case, while in the seniors, the possession of growth potential might be of help with regard to the development of employability.

It is conceivable that especially in the middle-aged the instrumental style of management plays an important role here (Boerlijst *et al.*, 1993). Once the employee has been valued in terms of his or her base of professional skills, and his or her capabilities to adjust flexibly to changing circumstances or unexpected technological alterations, to mention only a few possibilities, the supervisor might be inclined to prevent the employee from moving to another job or to another job field. The value that is inherent to the here-and-now-functioning of subordinates is very important, because it determines the career success of the supervisor him or herself.

In the case of the seniors, the situation seems to be different. To be eligible for transition to another function, the supervisor needs to have faith in a given employee's growth potential and flexibility. The situation could be such that once settled in a particular domain of professional expertise, the crucial factor with regard to employability is the opinion held by the supervisor on his or her degree of adaptability.

In conclusion, in order to positively influence the degree of employability throughout the career, one has to take into account the different effects that certain components of professional expertise have, depending on the age of the employee. It seems that for the starters it is crucial to concentrate on enlarging

the number of professional skills, and the extent of growth potential and social recognition, while for the seniors ascertaining a high degree of adaptability and flexibility is the key. In order to extend their possibilities, the starters should be enabled to participate in broader training and development programmes in new, but adjacent, domains, next to domain-specific educational activities. Besides, they should take career initiatives themselves by asking for career activities, asking for feedback on their performance, participating in relevant multidisciplinary networks and so on. The seniors should, in particular, be keen on the development of their employability in a broader sense. They should concentrate on enlarging their ability to meet successfully the future challenges in their job. In the light of the guidance of their added value, they should concentrate on the development of the capability of mastering the necessary new relevant expertise of the foreseeable future. In this respect, regular job changes could be very valuable.

We suppose that the middle-aged should try to convince the supervisor that contributing to a new department, maybe in a new job field, is favourable for the organisation as a whole. Interests and affinities for transition to another job have to be discussed in order to convince the supervisor that it is in the best interest of both employee and organisation to make career moves on a regular basis. The evaluation of middle management by top management is determinative in this respect. Only when supervisors are also rewarded for career development activities, instrumental leadership is not predominating.

Yet, many supervisors still neglect most actions that could lead to the timely development of professional knowledge and skills outside the realm of the employees' current job and its foreseeable immediate future. Most employees develop expertise, but mostly in too narrow a field to stay employable in the long run. At the point that their function or job becomes obsolete and they require re-employment in another job field, they are left out of account. As the life-cycle of occupations and functions offered by organisations has shortened tremendously in the last 30 years, the mastery of these learning and coping strategies and the transferability of these strategies are important topics for psychological research in organisations and should be the starting point for career development policy (Boerlijst and Van der Heijden, 1996).

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