

Competence Development in Organisations: Its Use in Practice

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Abstract

Creating competence has become a major issue in both profit and not-for-profit organisations as has the concept of the learning organisation. Competence development systems are being perceived as instrumental tools to make the concept of the learning organisation practical and to add strategic value in terms of the organisational, human resource development, and training and learning functions of the organisation. This paper presents the results of a European online survey focused on collecting the experiences of those organisations working with competence instruments. By performing statistical analyses: Cronbach's alpha Coefficient, Chi-square Tests, Kendall's Tau, and Mann-Whitney Tests, the conclusions point to generally positive perceptions of working with instruments for competence development. By analysing the perceived effects of working with competence instruments and the relationships between these effects and various factors such as orientation towards training and development, experience organisations have with implementing the concept and the types of instruments used two approaches are evident regarding instrument use; for organisational development and for employee development. But the ambiguity regarding competence and competence instruments requires further clarification of definitions and evaluation of implementation.

Keywords: *Competence development, organisational competence, organisational strategy, competence concept, competence profiles, organisational learning, human resource development*

1. Introduction

Performance improvement has been accepted as an important and relevant topic for profit organisations (Hill & Jones, 2004). However, performance improvement, is increasingly creeping into public, and other not-for-profit, organisational dialogue. If performance improvement is relevant for all types of organisations, does competence development possess a similarly broad scope? In public organisations accountability, Human Resource Management (HRM) and research and development come under the sphere of competence development (Brans & Hondeghem, 2005; Zook Jr., 2006). Educational institutions present a special case in this regard as their core business is competence development. Do they also implement competence development? How? Which instruments do they use?

Competence development has been a popular research issue since the 1970s when competence-based education and training and competence development became popular. The Dublin descriptors in higher education, the European Qualification Framework, the EU initiative on Life Long Learning, they all use the concept of competence. Many studies have been conducted in these fields (Grant et al., 1979; Arguelles et al., 2000; U.S. Department of Education, 2002; Rychen et al., 2003).

Competence studies in the field of corporate strategy and human resource management have been conducted by Nybø (2004), Zaugg and Thom (2003), Lynskey (1999), Chiesa, Giglioli and Manzini (1999), and Onyeiwu (2003) to name but a few.

In the field of corporate competence development, studies were conducted by various researchers (Arbeidsgruppe QUEM, 2000; Tjepkema et al., 2002; Lans et al., 2004). Parallel studies have been undertaken in vocational education (Wesselink et al., 2005; 2006). These build upon earlier research in over 800 organisations (Mulder, 2002) and a pilot-study conducted to gather data from selected EU-member states (Mulder & Bruin-Mosch, 2005).

The present study of this article is based on data from nearly 900 organisations in 13 member states. The aim of this research is to establish the types of competence instruments used in organisations in general and discern the effects of their use. This contribution will firstly present the objectives guiding the research followed by outlining the theoretical framework in which this work is contextualised. The methods and techniques will follow and then some results will be presented and conclusions posited.

2. Theoretical Framework

The ability to improve organisational performance continues to be an ever pertinent issue in this day and age. How do organisations attain and sustain a competitive advantage in the present climate of change? The idea of competitive advantage underlies much of the literature on organisational learning (Senge, 1990; Nyhan, 1998; Dreijer, 2000) strategic management (Porter, 1980; Hill & Jones, 2004), core competence (Prahalad & Hamel, 1990), human resource management and development (Garavan et al, 2002), competence development (Mulder, 2000; 2001), the competence concept (Norris, 1991; Ellström, 1997; Delamare le Deist & Winterton, 2005) and organisational change. Coping with change and integrating organisational, human resource, and training and development strategies have become popular strategic management themes behind sustaining a competitive advantage and achieving superior organisational performance; competence and competence development have featured highly in this regard (Heffernan & Flood, 2000). Competence prevails as a research issue and potential organisational practice because of its supposed rational economic evaluation of social and organisational action (Norris, 1991).

As already stated, competence development has been an active research topic since the 1970s. It is perceived as a strategic management tool to cope with the current business environment (Nyhan, 1998). The market has changed from one of mass production to one of customisation where quality, price, and speed of delivery are stressed. This change has brought about new circumstances in which many organisations struggle to cope: new and emerging customer segments, cultural diversity in a global marketplace, market volatility, raised customer expectations about quality of products and services, and the impact of the internet on an organisation's core business (Markowitsch et al., 2001). In the job market there has been a growth in higher-level jobs such as managerial and professional positions that require flexibility and problem-solving skills. The growth of the services sector has

also created conditions where often the intangible service aspect of any organisation tends to be the most visible value adding factor (Levitt, 1972).

To address new market challenges companies need to be flexible, responsive and multi-skilled. They aim towards: enhanced organisational performance (growth in revenue, lower staff turnover, higher productivity); the development of new modes of behaviour amongst employees stressing collaboration, self-management and responsibility; the creation of organisational learning environments where employees take the initiative, cooperate, learn, and share knowledge and insights (Markowitsch et al. 2001). According to the strategic management literature, differentiation and cost structure are at the root of competitive advantage (Hill & Jones, 2004). Firm resources and capabilities combine to form distinctive competencies for that organisation. These competencies can be in terms of superior efficiency, quality, innovation, or customer responsiveness which in turn differentiate an organisation and reduce its costs which creates value and profitability (Hill & Jones, 2004). Many companies today see competence development as key to competitive advantage and as a strategy to improve individual performance, organisational performance, and to create knowledge at all levels of the organisation (Hoffmann, 1999).

In the majority of cases the concept of competence remains a disputed theory. Hoffmann (1999) says that the concept of competence is defined by the rationale behind its purpose: Is it for performance (used to improve), standards of quality (used to standardise) or is it underlying attributes of individuals (used to determine syllabus/content of learning)? The definition is often dependent on the approach. Hoffmann (1999) cites two main approaches to competence: the U.S. approach, predicated on the seminal works of McClelland (1971) and Boyatzis (1982) are based around behaviour leading to superior performance; the U.K. approach is based around outcomes from a job when it is performed properly; to identify the skills, knowledge and personal characteristics required to get a job done. Norris (1991) outlined three approaches or definitions of competence: behaviourist, generic, and cognitive. The behaviourist approach is outcome or product oriented where actions, behaviours or outcomes can be described and achievements in performance are qualities of persons. The generic approach establishes competencies through behavioural event or critical incident interviewing to identify the general abilities associated with expert performers. The cognitive approach sees competence as the potential performance of an actor; the underlying attributes of a person (Hoffmann, 1999).

To further compound the ambiguity around competence Ellström (1997) identified five meanings of competence: competence as an attribute of the individual or their potential capacity to successfully handle a certain situation; competence as job requirements or the prescribed qualifications required of the job; competence-in-use or the competence used by the individual in performing the job; competence as adaptation (identify competence by the successful performance of certain tasks that the individual cannot change or improve) or competence as developed (competence as the capacity to reflect and act); and change-oriented human competence (competence as cognitive-rational or intuitive-contextual). Furthermore distinctions have been made by Achtenhagen (2005); corporate pedagogical approach, Rauner and Klaus (1989); vocational pedagogical approach, Breuer and Kummer (1990); learning psychological approach in terms of qualifications, aptitudes, and competence.

At an organisational level competence is used to describe organisational strengths/unique capabilities, “core competencies” to create competitive advantage (Prahalad & Hamel, 1990). This also encroaches on the literature on firm resources. The resource based view of the firm looks at acquiring/creating unique, rare or specialised resources to achieve a sustainable competitive advantage; and competence development underpins this line of thinking (Barry, 1991; 2001).

From various organisational studies the most prominent elements cited as part of competence development were: induction training, performance appraisal, continuous on- and off-the-job learning, self-assessment, knowledge management, and customer satisfaction. Organisations that based firm performance on competence development emphasised: leadership skills, customer focus, results orientation, problem-solving, communication skills and team-work skills as important elements of their strategic thinking (Markowitsch et al. 2001). Mulder (2001), following a survey of over 200 organisations, identified eight functions of working with competence: strategic, to be able to guide organisations and persons in the right direction; communicative, to make goals and expectations explicit; vertical alignment, to align organisational strategy with other processes such as personnel or training and learning policies; horizontal alignment, the synchronisation of personnel instruments; dynamism, concentration on personal development through competence profiles to bring about continued learning; developmental, the use of the concept of competence to bring about personal development at various levels of the organisation; employability, competence profiles and assessment generally lead to learning projects and thereby employability; and performance improvement, facilitates the development of desired behaviour in line with desired performance.

3. Research Questions

In this study competence development is viewed as part of creating a learning organisation. The definition of competence used in this research is based on Mulder’s (2001, p.9) working definition of the term competence:

“Competence is the capability of a person or an organisation to reach specific achievements. Personal competencies comprise: integrated performance oriented capabilities, which consist of clusters of knowledge structures and also cognitive, interactive, affective and where necessary psychomotor capabilities, and attitudes and values, which are conditional for carrying out tasks, solving problems and more generally, effectively functioning in a certain profession, organisation, position or role.”

The researchers are aware that there are various differences in terms of the use of the terms “competence”, “competency”, “competencies” and “competences”. For the purposes of this article we regard “competence” as a general ability and “competencies” as components of competence. However it should be noted that from a European perspective “competence” is viewed in a holistic or professional development orientation and “competences” as components of competence. Furthermore one cannot omit “competency” which maintains a more specific,

behavioural or behaviourism oriented perspective. As use is dependent on the author we have used the terms according to the author's original use when speaking about their work.

This study is guided by four main research questions:

1. What competence instruments are being used by profit, not-for-profit, and educational organisations within selected EU member states?
2. What are the perceived effects of the use of these competence instruments in organisations?
3. What are the relationships between the perceived effects of the use of competence instruments and various factors such as country, organisational size, business/economic sector, orientation towards training and development, and experience with the concept?
4. Do the factors stage of implementation, instrument use or perceived effects at organisational, HRM and training and development level influence negative views of competence development?

4. Methods and Techniques

4.1 Research Framework

This research is primarily a descriptive analysis of an online survey study that was aimed at collecting the experiences of those (profit, not-for-profit, and education and training organisations) within the ETV (European Training Village) contacts' database that work with the competence concept and competence instruments. In this way an overview could be gained of the status of competence development within the respondent organisations.

4.2 Research Design

The research design in this case is an online survey. The survey "Competence Development in Organisations" was used in this study. It is the follow-up to a study conducted by Mulder (2001) in the Netherlands for the Foundation of Management Studies, The Hague. That study concentrated on large organisations in the public and private sector as they are considered the most advanced in regard to competence development (Mulder, 2001). Therefore a similar technique was employed for this study with the questionnaire designed around those previous findings and experiences. According to Mulder (2001) the concept of competence can play a role in six practical contexts: the organisational strategy context, usually by identifying the core competencies of the organisation to add value to organisational strategy; the personnel management context, by aligning the different HRM (Human Resource Management) instruments and using competence profiles in selection, placement, assessment, and development; the training and development context, by using competence oriented assessments as a basis for more relevant learning programmes; the education and labour link context, by using competence profiles in curriculum development to more appropriately determine the content of training programmes; the sectorial training policy or economic structure policy context, this applies to national bodies using core competencies to direct macro policy. These six contexts are represented in the competence instruments identified in the survey questionnaire. Therefore the aim was

to address the practical context of instruments-in-use irrespective of conceptual origin of the instrument.

The two main approaches to the use of competence instruments (Mulder, 2002): 1. for organisational development (testing, selection, placement) and 2. for employee development (formative assessment, personal development plans, competence development activities, portfolios for career development) are highlighted and should appear in the findings here. Mulder (2002) highlighted the state of competence development in four business organisation case studies: Dow Benelux, Ericsson, Aalsmeer Flower Auction, Bloemenveiling Aalsmeer, and Rabobank Nederland. In all four organisations competence was implemented but in different ways and was therefore distinctly operationalised in either the personnel policy or organisational policy contexts.

4.3 Research Instrument

The survey “Competence Development in Organisations” launched on the European Training Village (ETV) website of the European Centre for the Development of Vocational Training (CEDEFOP) in 2005 and again in 2006 was circulated online to all ETV contacts, specifically with the aim of obtaining an overview of the current status regarding competence development within organisations in the EU. In total the questionnaire consisted of 28 questions with 103 items covering the following areas:

- Background organisational information (Question 1-6)
- Extent of competence development within each organisation (Question 7-23 and 28). Question 9 dealt specifically with the fourteen listed competence development instruments used by the respondent organisations.
- Perceived effects of competence development on organisational (Question 24), HRM (Question 25), and training and learning functions (Question 26)
- General views of the competence concept (Question 27)

4.4 Respondents

The survey was distributed in four language versions: English, French, Dutch, and German; all translated by professional translators. Therefore the total potential respondent population comprised some 10,000 ETV members worldwide. However because of the nature of the ETV the majority of respondents came from educational organisations. The first survey from 2005 yielded 643 responses and the second round, in 2006, yielded 704 (total n=1347). After data cleaning and selection the final data set comprised 1022 respondents across 13 countries.

The total response group of over 1347 respondents was cleaned to include only those who used and understood the competence concept and competence instruments. This step was taken because of the high “do not know” response rate regarding competence and competence instruments and is primarily related to the confusion and ambiguity surrounding the concept both for researchers and practitioners.

The initial data cleansing process firstly looked at the geographical distribution of respondents. Since the study was aimed at the European Union, the response group was quite varied and the number of respondents per country varied between one and sixty; it was decided to select those EU member states of which there were 20 respondents or more. Subsequently all those remaining respondents who answered either “no” or “do not know” to the question “does your organisation work with instruments for competence development?” (Question 7) were excluded from the analysis resulting in a total response group of 1022 people.

It must be mentioned that the very nature of the response group does not provide for any reliable generalisations to be made. Participation was voluntary and based on the contact list from the ETV; primarily composed of public and educational organisations. Therefore there was little control over respondents or their experience with competence. As such, the validity of comparison is restricted because of the inability to standardise the response group. However, as a preliminary exploratory study, the survey population can still provide valuable information regarding the state of competence development within the organisations studied because the analysis concentrated on those who work with competence development and their experience is valid.

4.5 Data Analysis

Research Question 1:

To investigate instrument use respondents were asked to respond either “yes” or “no” to signify whether their organisation uses each of the 14 listed competence instruments (Question 9).

In order to present the findings in terms of education and training, not-for-profit, and profit organisations the initial sectoral categories (Question 4) were collapsed into the three categories of education and training; n=377 (university, library, private training provider, vocational teacher training, public training provider, non-university higher education, education innovation centre, vocational school, education testing centre, training authority), not-for-profit; n=277 (non-profit making organisation, public administration, ministry, professional association, sectoral organisation, employer organisation, EU body, trade union, chamber of commerce, non-EU international organisation) and profit/other; n=271 (company, other private sector organisation, publisher, other).

A cross-tabulation to investigate the types of organisations adopting competence instruments was carried out involving the nominal variables (country-Question 1; organisational size-Question 3; economic sector-Question 4; and stage of implementation of competence development-Question 10) and ordinal variables (use of the various competence instruments x 14-Question 9; and orientation towards training and development-Question 28), with Chramer’s V also calculated as an appropriate measure of association (table 3).

To look at the instruments further Chronbach’s alpha (α) for all 14 competence instruments was calculated. This allowed for the creation of a new collective variable

of all fourteen instruments. Then, the differences between various factors of interest (country, organisational size, economic sector, orientation towards training and development, and experience with the competence concept) and this new key variable were assessed using Kruskal Wallace (Kw) for ordinal variables (level promotion of training and development) and Mann-Whitney U Test for nominal variables (country, organisational size, economic sector, stage of implementation of competence).

Research Question 2:

The second question addresses the potential added value that respondents perceive in using competence instruments. The idea behind implementing or adopting competency development is threefold in our view. There are organisational effects (Question 24), HRM effects (Question 25), and training and development effects (Question 26); primarily the alignment of business strategy with HR systems and training and learning systems to improve performance outcomes (Markowitsch et al., 2001; Mulder 2002).

To investigate the perceived effects at various levels, respondents were asked to rate the extent to which working with competence instruments has had an effect on eleven organisational factors (Question 24), fourteen HRM factors (Question 25), and twelve training and development factors (Question 26) on a five point scale (1=no; 2=weak; 3=moderate; 4=considerable; 5=strong). Mean and standard deviation were calculated for all effects and presented in table 4.

Research Question 3:

Chronbach's alpha (α) for all 11 organisational factor items (Question 24) was calculated as well as for the 14 HRM items (Question 25) and the 12 training and development items (Question 26) in order to create three new collective variables in each case. The differences between various factors of interest (country, organisational size, economic sector, orientation towards training and development, and experience with the competence concept) and these three new key variable were assessed using Kruskal Wallace (Kw) for ordinal variables (level promotion of training and development) and Mann-Whitney U Test for nominal variables (country, economic sector, stage of implementation of competence, organisational size).

Research Question 4:

Perceptions of competence development were further examined by looking at a series of negative statements regarding the effects of competence development (Question 27). Respondents were asked their level of agreement with nine negative statements on a likert-type scale ranging from 1 to 5 (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree). Chronbach's alpha (α) for all nine negative statements was calculated to create a new attitude variable. The variable was then tested against stage of implementation, the three combination effects variables (organisational, HRM, and training and development), and the combination instruments variable (used in research question 1), to determine if any significant relationships between these factors exist. Mann-Whitney U Test for nominal variables was used to test stage of implementation. Kendall's tau test (Kt) for ordinal variables was used to measure these statements against the perceived effects (table 5).

5. Results

The first part of these findings present an overview of the 1022 respondents included in the final analysis. A total of 723 respondents admit to working with instruments for competence development (290 do not work with competence instruments and 9 people did not respond-Question 7). Respondents were primarily from France (n=110), Germany (n=100), United Kingdom (n=96), and the Netherlands (n=95). The types of respondent organisations were primarily education (n=363), public sector (n=209), other (n=104), health and social work (n=49), commercial services (n=35), and manufacturing non-food (n=28). Respondents characterised their jobs as training specialist (n=152), consultant (n=124), human resources (n=96), management (n=81), and researchers (n=76).

Table 1 summarises these findings below:

Table 1 Profile of Respondents According to Country, Organisational Size, Business Sector, Type of Organisation, Field of Work of Respondent, Respondent job characterisation, and stage of implementation of competence management (f=Frequency)

Variables	f	%
Country (n=895; missing n=127)		
France	110	10.8
Germany	100	9.8
United Kingdom	96	9.4
The Netherlands	95	9.3
Italy	87	8.5
Belgium	72	7.0
Spain	72	7.0
Portugal	65	6.4
Greece	61	6.0
Ireland	38	3.7
Finland	37	3.6
Austria	34	3.3
Sweden	28	2.7
Size of Organisation (n=1003; missing n=19)		
Large	413	40.4
Medium	235	23.0
Small	196	19.2
Micro	159	15.6
Business Sector (n=925; missing n=97)		
Education and Training	377	36.9
Not-for-profit	277	27.1
Profit/other	271	26.5
Type of Organisation (n=885; missing n=137)		
Education	363	35.5
Public sector	209	20.5
Other	104	10.2
Health and social work	49	4.8
Commercial services	35	3.4
Manufacturing non-food	28	2.7
Transportation, communication	20	2.0
Financial services	19	1.9
Private household with employed persons	14	1.4

Wholesale, retail and repair	11	1.1
Manufacturing food	9	0.9
Public utilities (Electricity - Gas - Water)	8	0.8
Construction	8	0.8
Agriculture and fishing	5	0.5
Real estate, renting	3	0.3
Field of Work (n=953; missing n=69)		
Training specialist	152	14.9
Consultant	124	12.1
Human resources	96	9.4
Management	81	7.9
Researcher	76	7.4
Teacher	70	6.8
Educational scientist	57	5.6
Administrator	51	5.0
Governor	48	4.7
Other	48	4.7
ICT	35	3.4
Professor	32	3.1
Guidance specialist	24	2.3
Marketing/sales	18	1.8
Purchasing/logistics	11	1.1
Financial-accounting	9	0.9
Coach	8	0.8
Environment	6	0.6
Production	4	0.4
Law	3	0.3
Job Characterisation of respondents (n=932; missing n=90)		
Middle management/line manager	303	29.6
Higher management/executive level	283	27.7
Technical specialist/engineer/quality control	157	15.4
Staff/carry out primary work process	76	7.4
Other	73	7.1
Support staff	40	3.9
Stage of Implementation of Competence (n=830; missing n=192)		
Implementation	350	34.2
Introduction	344	33.7
Evaluation	136	13.3

5.1 Research Question 1: competence instrument use by country, size, sector, orientation towards training and development, and stage of implementation

The first research question seeks to establish the types of organisations adopting the competence concept and, in particular, the instruments used.

Results show the greatest affirmative response rate to working with instruments for competence management within each country came firstly from Sweden (96.3% yes), followed by Finland (91.4% yes), the United Kingdom (86.5% yes), and the Netherlands (78.9% yes), as illustrated in figure 1.

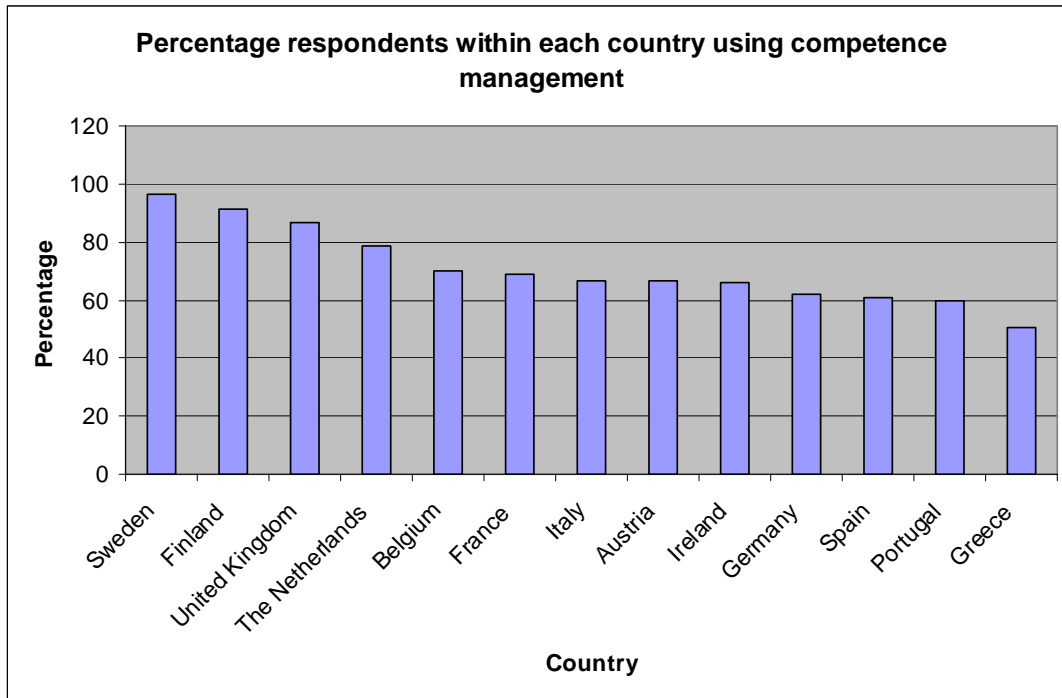


Figure 1. Percentage of respondent organisations within each country that use instruments for competence management

Overall, the three most used instruments, as listed in table 2, were: 1. defining the core competence of the organisation; 2. arranging facilities for learning; 3. use of personal development plans. The lowest used instrument was using competence assessment in remuneration. It is interesting to note at this stage that the most popular competence instruments are primarily associated with employee development and the Human Resource function which must facilitate co-ordinate and support rather than simply supply training and development (Sambrook & Stewart, 1999; Poell, Pluijmen & Van der Krogt, 2003).

Table 2 Respondent Use of Competence Instruments (N)

Rank	Competence Instrument	Yes	No
1	Define the core competency of the organisation	608	104
2	Arrange facilities for learning	562	152
3	Use of personal development plans	459	231
4	Develop competence profiles of job families	454	210
5	Develop competence based personnel management	435	228
6	Develop competence profiles of job holders	423	204
7	Distinguish competence centres	418	238
8	Using competence assessment in selection of new employees	388	245
9	Acknowledge informally acquired competence	381	239
10	Using competence assessment for employee evaluation	374	281
11	Market products/services with competence on the label	358	283
12	Assign coaches to employees for competence development	284	361
13	Appoint competence managers	267	348
14	Use of competence assessment in remuneration	177	441

On a country scale “defining the core competency of the organisation” was used by 73% or more of respondents in each country and “arranging facilities for learning” was also used by 61% or more of all countries (see appendix).

More specifically research question one aimed to address the types of organisations that adopted the various listed competence instruments. As already mentioned, country, organisational size, economic sector, orientation towards training and development, and stage of implementation of competence development were cross-tabulated and tested using Cramer’s V to discover any associations with the fourteen listed competence instruments (see table 3). The Cramer’s V calculation did not reveal any significant relationships between the abovementioned variables and the fourteen listed competence instruments.

In the cross-tabulations it was found that across all organisation sizes, sectors, training and development orientation and stage of implementation “defining the core competency of the organisation” and “arranging facilities for learning” were the two most popular instruments respectively. This holds also for the thirteen countries included in the study except for the case of France whose second most popular instrument was “develop competence profiles of job holders”; the case of the Netherlands with “use of personal development plans” placed first, ahead of “defining the core competency of the organisation”; Ireland and the UK both rated “arranging facilities for learning” first followed by “use of personal development plans”; and Portugal and Finland both reversed the order for these top two instruments. One other exception was noted for organisations with no orientation/promotion of employee training and development. The two most popular instruments in these organisations were “appointing competence managers” (rated first and equal to “defining the core competence of the organisation”) followed by “marketing competence on the label of the product or service”.

For the three defined economic sectors the two most used instruments were again “define the core competency of the organisation” and “arrange facilities for learning” respectively. The third most used instruments differed for the not-for-profit sector; for the education and training and the profit/other sectors it was “use of personal development plans”; for the not-for-profit sector it was “develop competence profiles of job holders”.

In terms of the third most used instrument for organisational size both the medium and large organisations used “develop competence profiles of job holders” while the micro organisations tended towards “develop competence based personnel management” and the small organisations went for “distinguish competence centres”.

Those with considerable and strong orientation/promotion of employee training and development ranked “use of personal development plans” in third place and those with weak and moderate levels gave third priority to “distinguish competence centres”. The organisations with no orientation/promotion of training and development ranked “distinguish competence centres”, “develop competence profiles of job families”, and “acknowledge informally acquired competence” equally as the third most used competence instrument.

Table 3 Cross-tabulation of Instruments Used and Economic Sector (% within each sector using instruments)

<i>Instrument</i>	<i>Economic Sector</i>			<i>Cramer's V</i>
	<i>Education and Training</i>	<i>Not-for-profit</i>	<i>Profit/other</i>	
Define the core competency of the organisation	81.3	87.4	88	0.089
Arrange facilities for learning	78.8	80.3	77.2	0.03
Develop competence profiles of job families	71.1	64.8	70.3	0.059
Use of personal development plans	69.1	60.7	70.2	0.086
Develop competence based personnel management	67.1	63.1	66.8	0.037
Develop competence profiles of job holders	65.8	68	68.4	0.025
Market products/services with competence on the label	62.6	48.3	55.9	0.119
Distinguish competence centres	62.3	62.7	68.5	0.057
Using competence assessment in selection of new employees	60.9	54.1	65.5	0.091
Acknowledge informally acquired competence	59.5	62.3	62.3	0.028
Using competence assessment for employee evaluation	50.6	59.9	62	0.104
Assign coaches to employees for competence development	42	44.1	45.5	0.03
Appoint competence managers	40.4	41.6	48.2	0.068
Use of competence assessment in remuneration	24.5	32.1	28.7	0.071

To look at the instruments further Chronbach's alpha (α) for all 14 competence instruments was calculated and a value of 0.807 was obtained, which allows for the creation of a new variable by combining the instrument items. Therefore, a new collective variable was formulated which indicates that respondents, on average, use competence instruments to a moderate or considerable extent although there is a great deal of variation in this, as would be expected with such a combination variable (M=

19.95, sd= 3.55). Then, the differences between various factors of interest (country, organisational size, economic sector, orientation towards training and development, and experience with the competence concept) and this new key variable were assessed using Kruskal Wallance (Kw) for ordinal variables (orientation/promotion of training and development) and Mann- Whitney U Test for nominal variables (country, organisational size, economic sector, stage of implementation of competence). Significant differences were found between competence instruments and: stage of implementation (MW = 6.0; Z= -3.783; Sig. = 0.00) and level of promotion of employee training and development ($X^2 = 82.532$; df. = 14; Sig. = 0.00). Therefore the use of instruments for competence development tends to be greatest at a later stage of implementation and where there is a greater orientation/ promotion of employee training and development.

5.2 Research Question 2: perceived effects of the use of competence instruments

To investigate the organisational effects respondents were asked to rate the extent to which working with competence instruments has had an effect on eleven organisational factors, fourteen HRM factors, and twelve training and development factors on a five point scale (1=no; 2=weak; 3=moderate; 4=considerable; 5=strong). The resulting mean scores varied for organisational factors between 3.3 and 2.9, for HRM factors between 3.27 and 2.29, and training and development factors between 3.28 and 3.01, as outlined in table 4.

Table 4 Perceived effects of working with competence on organisational, HRM and training & development factors (1=no; 2=weak; 3=moderate; 4=considerable; 5=strong)

Rank	Organisational Factors	Mean	S.D.
1	Improvement of quality management	3.30	1.23
2	Raising the level of customer satisfaction	3.30	1.22
3	Improvement of customer orientation	3.30	1.18
4	Increasing flexibility	3.20	1.23
5	Improvement of efficiency	3.20	1.18
6	Performance improvement of the organisation	3.20	1.16
7	Improvement of communication	3.20	1.16
8	Integrating cultural differences	2.91	1.30
9	Decrease in number of customer complaints	2.90	1.22
10	Decrease in number of malfunctions	2.90	1.21
11	Improvement of corporate governance	2.90	1.20
HRM Factors			
1	Improving performance of employees	3.27	1.19
2	Offering better development opportunities	3.22	1.25
3	Increasing motivation of employees	3.15	1.23
4	Increasing employee satisfaction	3.12	1.26
5	Improving assessment structure	3.12	1.25
6	Increasing employability of employees	3.07	1.25
7	Making expectations regarding employees more clear	3.07	1.21
8	Improving selection factors	3.04	1.24
9	Improving the integration of organisation and personnel policy	3.00	1.28
10	Improving recruitment factors	2.97	1.22

11	Improving career management	2.93	1.30
12	Alignment of personnel instruments	2.90	1.25
13	Reduction of absenteeism due to illness	2.39	1.21
14	Improvements in the structure of salaries and remuneration	2.29	1.22
<i>Training and Development Factors</i>			
1	Improved added value of training and development	3.28	1.22
2	Stimulating learning and development of employees	3.26	1.24
3	Improving learning culture in organisation	3.25	1.25
4	Improved basis for training and learning programs	3.23	1.20
5	Better basis for selection of training activities	3.22	1.26
6	Improved advice on participation in training	3.19	1.23
7	Better alignment with organisational strategy	3.19	1.22
8	Making better use of informal learning	3.14	1.26
9	Improving employee willingness to learn	3.14	1.21
10	Optimising the learning potential of the workplace	3.14	1.20
11	Better alignment with personnel management	3.12	1.21
12	Defining assessment criteria for result measurements	3.01	1.30

The top three organisational effects with a mean of 3.3 or more are: improvement of quality management, improvement of customer satisfaction, and improvement of customer orientation. The top HRM effects with a mean of 3.15 or more are: improving performance of employees, offering better development opportunities, and improving motivation of employees. The top three training and development factors with a mean of 3.25 or more are: improved added value of training and development, stimulating learning and development, and improving learning culture in the organisation.

5.3 Research Question 3: relationship between perceived effects and country, organisational size, economic sector, orientation towards training and development, and experience of implementation of the concept

Chronbach's alpha (α) for all 11 organisation factor items was calculated and a value of 0.964 was obtained, which allows for the creation of a new variable by combining the 11 aforementioned items. Similar calculations were made for the 14 HRM items and the 12 training and development items to achieve scores of 0.969 and 0.970 respectively.

The differences between various factors of interest (country, organisational size, economic sector, orientation towards training and development, and experience with the competence concept) and these three new key variables were assessed using Kruskal Wallace (Kw) for ordinal variables (orientation towards employee training and development) and Mann-Whitney U Test for nominal variables (country, economic sector, stage of implementation of competence, organisational size). The results showed significant relationships between orientation towards training and development and perceived organisational effects ($X^2 = 170.81$; df. = 44; Sig. = 0.00); perceived HRM effects ($X^2 = 177.36$; df. = 56; Sig. = 0.00); and perceived training and development effects ($X^2 = 175.30$; df. = 43; Sig. = 0.00). No significant differences were found between the three effects variables and country, organisational size, economic sector, and stage of implementation of competence development.

5.4 Research Question 4: relationship between negative perceptions of competence and stage of implementation, instrument use, perceived effects at organisational, HRM and training and development levels.

Cronbach’s alpha for the nine negative statements was calculated with a value of 0.816; allowing for the creation of an attitude variable. This negative statement attitude variable was not significantly related to stage of implementation but was negatively associated with the three effects variables and the collective instruments variable (see table 5).

Table 5 Relationship between perceived effects and negative statements and perceived effects and instruments

Perceived Effects	Kt (statements)	Kt (Instruments)
Organisational	-0.163	-0.319
HRM	-0.155	-0.342
Training and Learning	-0.166	-0.347

6. Conclusions

It appears that, in general, there are mainly positive effects perceived of working with instruments for competence development. The majority of instruments were used to a relatively high extent and most organisations surveyed were in the implementation stage of competence development. These apparent positive perceptions of working with competence development were further examined by looking at a series of negative statements regarding the effects of competence development such as it is still quite an ambiguous concept, there is resistance to its use, it can be expensive and increase bureaucracy, and competence profiles may not necessarily be reliable (Mulder. 2001; 2002).

The negative statements variable was not significantly associated with stage of implementation which would suggest that experience with competence does not necessarily improve perceptions of it, nor detract from it. However, it was found that the negative statements were negatively associated with the three perceived effects. Therefore the lower the perceived effectiveness at organisational, HRM and training and development level the greater the negative perception of competence development, which is logical. But the negative association with the collective instruments variable and negative statement shows that the lower the use of competence instruments the greater the level of agreement with the abovementioned negative statements. This indicates that greater instrument use reduces negative perceptions of them.

It can also be noted that there is a strong relationship between orientation toward training and development and the use of competence instruments as noted in research question 1. This point is further compounded by the relationship between training and development and perceived effects (research question 3). This positive association indicates the greater the orientation towards training and development the greater the perceived effects of working with competence instruments, which again is a valuable finding for practice.

Finally two approaches to competence development can certainly be discerned; the organisational development approach and the personnel development approach, which can be complimentary. In research question two the top three instruments for organisation, HRM, and training and development illustrated this dichotomy as already outlined by Mulder (2002). These approaches are further compounded by the types of instruments used as described in research question one. In general the two most popular instruments used were “defining the core competence of the organisation” and “arranging facilities for learning” emphasising both organisational and personnel development respectively.

The findings presented here are in line with previous studies conducted such as Mulder (2002) and Mulder and Bruin-Mosch (2005) that suggest generally positive perceptions of competence. However it must be stated that the meaning of competence has not been agreed upon and there are many definitions and therefore ambiguities of meaning remaining. The costs to implement competence can be high and there must be an open organisational culture of cooperation. There is the danger that competency profiles are not always valid and reliable and that they can lead to bureaucracy.

The research presented here is by no means the end of the story of competence. Different contexts require different types of competence instruments and competence development. Further studies should concentrate on specific sectors such as education or profit companies and also country comparisons. To what extent do the various sectoral institutions use competence? At what levels (organisational, HR, training) do they use it? How is it implemented? How is it evaluated? The individual employee perspective is also another research option as they would be best placed to detail the use of competence in practice.

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