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Competency Management in Central Europe: A Comparison of Czech, Hungarian and Slovenian Competency Needs

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After a strong focus on transition processes in Central East European countries (CEE), this topic has been displaced by more dramatic merger and reorganization processes or the recent financial crisis. This obscures the fact that we know almost nothing about the management competencies in these countries, which is an important building or stumbling block for future development. Therefore, we will examine the individual competencies of almost 300 top and middle managers in the Czech Republic, Hungary and Slovenia, and we will compare the different sets of competencies and interpret them according to the given economic situation in these countries.

Keywords: Competency Management, Human Resources, Transition Economies, Czech Republic, Hungary, Slovenia

1 Introduction

Almost two decades of research on transitional processes in CEE has produced extensive studies on changes in these countries. In the beginning, the research was focused predominantly on the field of study of the introduction of the new economic system (Thiessen, 1994; Bird, 1995; Lieberman, 1997; Meske, 1998; Nellis, 1999). Later, these studies were supplemented by studies of changes in other segments of the society. Consequently, we currently have numerous extensive studies from the field of transitional processes in the CEE. (Aslund, 2002; Galenson, 2004; Podkaminer, 2004; Gabrisch and Hölscher, 2005; Berglöf and Roland, 2007; Roberts, 2009; Jeffries, 2009; Bafoil and Turner 2009).

It is true that the initial and highest interest in studies of transitional processes in the CEE has already passed. The restructuring processes in transition countries and reasons for or ways out of the financial crisis remain a current topic for experts in different fields of research. However, new and interesting findings regarding the processes of social transformations are still appearing. In their research, the authors continue to reemphasize that the complexity and the mutual causal link among transitional processes in individual social sub-structures are so complicated that they render a comprehensive approach impossible, and demands more focused research with the aid of partial analyses.

A special place within the research of restructuring economic systems in transition countries belongs to the study of management (Lungwitz, 1998; Roderick, 1999; Edwards and Lawrence, 2000; Geib and Pfaff, 2000; Lohr, 2003; Bluhm, 2007; Dickmann et al., 2008; Chadraba and Springer, 2008; Lang et al., 2009). Managers were particularly exposed to the processes of restructuring economic structures. Due to the privatization processes and the current consolidation of ownership structures, managers in the transition environment

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have frequently found themselves taking over key initiatives in directing the development of the organization. We often denote them as 'change agents' or accelerators of business transition processes (Lang et al., 2001).

In the area of studying managers and their roles concerning change processes in transition countries, the role and significance of their competencies has become, not merely a short-lived trend, but a necessary and integral part of the strategic planning for the sustained development of the organization. Individual competency management occupies a special place in the construction of the competitive capacities of the organization. Especially in transition economies like the Czech Republic, Hungary and Slovenia, human resources must be regarded as a key factor for the present and future success of the economy.

2 Theoretical background

2.1 The resource-based theory

There are different definitions of the resource-based theory, so - as an example -

Daft notes: "from a resource-based perspective, organizational effectiveness is defined as the ability of the organization, in either absolute or relative terms, to obtain scarce and valued resources and successfully integrate and manage them" (Daft, 2001: 67). Questions about how to ensure long-term strategic advantages with individual resources and capabilities are put to the forefront. The authors such as Penrose (1959), Porter (1980, 1983), Rumelt (1984), Wernerfeld (1984) use two basic assumptions about organizations resources and capabilities as quoted by Barney and Hesterly:

- "that resources and capabilities can vary significantly across firms (the assumptions of organizations heterogeneity;
- that these differences can be stable (the assumptions of resource immobility" (Barney and Hesterly, 1999:127).

To ensure long-term business success, managers have to analyze their own potentials and available resources, and identify those areas of activity on which their organizations can develop strategic advantages, which the competition has difficulty to imitate. Imitability is an important component of the resource-based view of the organization. If another organization can acquire or develop the same, or substitute, resource as an organization that already possesses them, then they cannot be a source of competitive advantage for any organization.

The following individual resource types are most frequently mentioned in professional literature (Barney, 1991; Barney and Hesterly, 1999: 127; Staehle, 1999:792-793):

- physical resources (for example: the machines, factories, and other tangibles used by a organization)
- human resources (for example: the experience, intelligence, training, judgement and wisdom of individuals associated with a organization)
- financial resources (equity capital, debt capital, retained earnings.)
- organizational resources (for example: teamwork, trust, friendship, and reputation of groups of individuals associated with an organization)

When assuring necessary resources, management has to strive to form external connections that will lower one-sided dependence and establish as high a mutual inter-dependence with suppliers as possible.

Research within the framework of the resource-based theory has been and is still carried out in various directions (Conner, 1991). A well-known direction is focused on the links between the resource-based theory with the theory on strategic actions of organizations for gaining strategic advantages. As Gulati et. al. note "this view emphasizes how organizations are able to combine rare and unique collections of resources within a single organization to create synergies and achieve a competitive advantage over competing organizations (Gulati et. al., 2002: 296). A second argument of the resource-based view focuses on an organization's capabilities, that is its dynamic ability to combine inputs (Teece et al., 1997). This article tries to follow both arguments with a focus on the competencies of managers and its change over time.

If the concept of the resource-based theory is transferred into the field of human resources, then human resources can represent an independent potential that can be transformed, by means of human resources management (HRM) instruments, into a special factor of the competitive advantage of a company (Dyer and Reeves, 1995; Colbert, 2004; Clardy, 2008). The resource-based view is used widely in HRM literature to explain the strategic importance of human resources (Abhayawansa and Abeysekera, 2008). As a result, the authors Wright and McMahan (1992) state: "that human resources can be a source of sustainable competitive advantage by satisfying four criteria:

- employees must add positive value to the organisation,
- skills and competencies possessed by employees should be unique or rare among current and potential competitors,
- the human resource represented by the organizations employees must be imperfectly imitable and
- an organization's human resources cannot be substituted by another source from competing organizations" (Wright and McMahan, 1992: 310).

A general assumption underpinning strategic HRM literature is that employees *per se* are not a source of sustainable competitive advantage. Effective HRM practices need to be in place to transform the human resources in an organization to human capital that generates long-lasting value to the organization (Coff, 1997; Abhayawansa and Abeysekera, 2008; Chadwick and Dadu, 2009). Human resources are gaining increasing importance in modern society. Individuals' knowledge and abilities are becoming more and more important for developing the specific competitive advantages of an individual organization

2.2 Competency management

Competency management represents a holistic field of research, ranging from strategic to organizational to individual

competencies (for a more detailed overview, see Elliot and Dweck, 2005; Tidd, 2006; Mühlbacher, 2007). The following focuses on the definition of individual competency and the development of these competencies, both of which are needed to answer our research question. Due to the limited space of this article, a number of interesting aspects will have to be omitted here and left to future research. Recent work on individual competency management (see for example Probst et al., 2000; Sarges, 2001; Erpenbeck and von Rosenstiel 2003, 2007; Kauffeld et al., 2009) primarily emphasizes the fact that competencies are strongly oriented towards the future. This enables a person to tackle upcoming challenges, whose nature cannot be predicted or determined, in a self-organized manner. Thus, discussions regarding competencies are of importance whenever strategic personnel planning and development take center stage in times of great uncertainty.

This requires a change in perspective within human resource management. Both the current requirements and the competencies necessary in the future must become the focal point of the analysis and must be seen as a strategic competitive advantage for the company (McCall, 1998; Nahapiet and Sumantra, 1998). From this point of view, the question of in which specific competencies a company should invest in order to realize value added in the future (in the sense of return on investment) at first remains unanswered. Only the answer to this question, however, makes it possible to use further education as a strategic instrument of management development. Particularly regarding anticipated competencies, one should keep in mind that this data (in accordance with a Delphi study) are explorative prognoses. Apart, therefore, from the comparison of the current distribution of competencies, this study, therefore, can only serve the function of generating hypotheses.

Definition of competency

The definition of competency changes with each theory used, namely it has a fixed meaning only within the specific construct of a particular competency theory. In a narrow sense, competencies are the dispositions of self-organized actions. As they are internal, unobservable dispositions, competencies are always subjective characteristics, attributed on the basis of problem-and-solution orientation, by informing a person of an objective – without a specific solution – and then measuring the degree to which the objective was achieved. Competency is defined here as accomplishing or even exceeding a set objective (Erpenbeck and von Rosenstiel, 2003; Tobin and Pettingell, 2008). The most important objectives of professional competency development are the establishment and promotion of professional action competency. Here, the integration of cognitive, emotional-motivational, volitional and social aspects of human behavior in work situations is the main focus of interest (Heyse, 1997).

Competency models and drivers of change

Boyatzis is seen as the founder of competency management. In 1982, he created the first career model for managers that make a connection between the individual development of the hierarchical position and the competencies employed. According to this, there are three very distinct development stages: (1) the 'performance mode', mostly to be found with aspiring new managers and operative management, (2) the 'learning mode' of middle management and (3) the 'development mode' of the top management. (Boyatzis, 1993: 3+).

The first stage is mainly characterised by a stringent orientation towards success. Once this need has been fulfilled, the next development step focuses on looking for diversified experiences, before the third stage emphasises a generative orientation, namely supporting the next generation (see Erikson, 1959); thus, the quest for meaning is replaced by the desire to pass on one's own life experience. Following Conger (1989), Boyatzis assumes that these expectations result in the reinforcement of certain roles. These comprise process-oriented professionals in operative management, middle managers who function as allocators of organisational resources and strategy-oriented leaders in top management.

'Effective performance of a job is the attainment of specific results (in the other words outcomes) required by the job through specific actions while maintaining or being consistent with policies, procedures, and conditions of the organizational environment.' (Boyatzis, 1982: 12) The organizational environment consists of internal factors like corporate strategy or culture, structures and processes and external factors like the legal, political and societal frameword. (Boyatzis, 1982)

Based on their survey, in which more than 400 interviews were conducted with managers from 20 companies located in the USA, Europe and Asia, which were further supported by documentary analysis, Bartlett and Goshal detect a fundamental role change in management and critically challenge the classic role distribution in management. In hierarchical organisations, the managers at the top set the direction by establishing strategies and controlling resources. The middle-level managers act as administrative controllers who pass on information and handle fund allocation. The line managers find themselves in the role of an operative executor, swamped with instructions and checks from above (Bartlett and Goshal, 1998: 80).

These administrative tasks increasingly result in a lack of flexibility and innovation in companies. This role allocation also represents a highly standardised and at times even efficient, but at the same time deeply depersonalised management systems, which interpret human resources not as a strategic competitive advantage, but just as 'cogwheels in the machine'. For this reason, top managers should increasingly make use of leadership competencies and thus imbue their employees with a sense of personal responsibility and individual appreciation, instead just setting collective performance targets and monitoring their realisation. This can be achieved, in particular, by positively transmitting norms and values of corporate culture as well as by a motivating vision. This view is based on the assumption that ultimately managers are not loyal to a particular company but to particular values that they believe in and find satisfying. Middle managers, in contrast, should move on from being controllers to acting as coaches for the line managers, who can be seen as the real entrepreneurs in the company and whose job is to promote the innovative development of new business fields (Bartlett and Goshal 1998, 81+).

With their model, Bartlett and Goshal show that individual competencies are not just subject to change, but that

this change also has an effect on the distribution of tasks and competencies between the hierarchical levels. The drivers of their model focus mainly on the need to change hierarchical structures within companies into more heterarchical networks and the externally induced change of values (Bartlett and Goshal, 1998: 84+). Unfortunately, the lack of clearly defined and non-overlapping categories of competencies makes the model operational, and thus using it in practice or testing it empirically impossible. It is exactly this, namely a relational analysis that paper sets out to achieve.

Apart from a core area that is common to most competency models and that covers analytical and strategic thinking, performance orientation, the ability to communicate and work in teams, as well as leadership competency – and hence the term 'ability to communicate' often has no more explanatory power than a classic job ad for a vacant management position – all additional competency types remain so vague in most cases that there is further room for interpretation that in the end makes it impossible to make an objective prediction as to individual capacity to perform. This has been criticised by Woodruffe (2003: 85): 'Unfortunately, there are also plenty of examples of competency frameworks that would serve as a poor basis of an assessment or development centre.'

Woodruffe, therefore, concludes that ultimately competency models can only be differentiated in terms of time horizon and hierarchy. 'The competencies in a list must be reviewed to decide which are likely to remain important, which are likely to increase in importance and which are likely to become less important over time. This makes sense if the job analysis has concentrated on both present and future requirements. For most purposes, it is better to concentrate on the future. After all, the organization is assessing and developing managers of the future, not of the present. Categorizing competencies in terms of seniority will show which are core throughout a person's career, which drop out with seniority, and which become salient only with seniority. This seems perfectly legitimate, and is based on comparing competency lists at different (hierarchical) levels' (Woodruffe, 1993: 34). The differentiations by hierarchical level and present versus future orientation called for at this point are also found in the empirical survey described in this paper, which makes a comparative analysis possible.

This removes the main point of criticism regarding task-oriented competency models that, by using them, a role culture already established can be made permanent. In the MCI standard, for instance, a functional distribution of tasks between top, middle and operative management is established that does not take into account future developments. Furthermore, different functional areas in a company need different approaches (Lester, 1994). Admittedly, it is conceded that it is not only individual competencies, but mainly specific bundles of competencies required for assuming a particular function that have a significant effect on efficiency and effectiveness (Brittain and Ryder, 1999). These bundles, however, should be as heterogeneous as possible within the company in order to avoid short-sightedness and inflexibility (Buckingham, 1999).

A more extensive competencies model has been designed within the AMA (American Management Association). The model content (Tobin and Pettingell 2008: 49+):

- Knowing and managing yourself (emotional intelligence, self-confidence, self-development, building trust and personal accountability, resilience and stress tolerance, action orientation, time management, flexibility and agility, critical and analytical thinking, creative thinking);
- Knowing and managing others (oral communication, written communication, valuing diversity, building teams, networking, partnering, building relationships, influencing, managing conflict, managing people performance, clarifying roles and accountabilities, delegating, empowering others, motivating others, coaching, developing top talent);
- Knowing and managing the business (problem solving, decision making, managing and leading change, driving innovation, customer focus, resource management, operational and tactical planning, results orientation, quality orientation, mastering complexity, business and financial acumen, strategic planning, strategic thinking, global perspective, organizational design, organizational savvy, human resource planning, monitoring the external environment).

All these categorizations have been reworked. In newer classifications, for instance, functional and methodological competencies are combined, because of their proximity and the desired generation of a general competency model, which separates self-dispositive actions from personal dispositions and introduces a new class: leadership competency. As a result, the following five classes of competencies can be distinguished (Kasper et al., 2005):

- Self-dispositive competencies, which represent the self-organized use of one's own resources (such as time, know-how)
- Methodological competencies, comprising all analytical and solution-oriented behaviors
- Social-communicative competencies, covering the area of social interaction (excluding leadership)
- Leadership competencies, including the full range of leadership, motivation and personnel development
- Personal competencies, mainly manifesting themselves in extraordinary personality traits

Based on this classification, the empirical data are coded and then, in a second step, analyzed with regard to the influence of the external and the internal environment, in order to answer the research question: Which management competencies do Czech, Hungarian and Slovenian managers have and how are these competencies influenced by external and internal drivers of change?

3 Research

3.1 Methodology and Sample

To observe the development of competencies in Eastern Europe, we conducted a survey and collected data concerning the currently needed and expected needs for the competencies of top and middle managers in the Czech Republic, Hungary

and Slovenia. We used open questions and the answers were coded with a theoretically based category scheme (see Mühlbacher, 2007) and analyzed by using BibTechMon, a bibliometric network analysis tool developed by the Seibersdorf Research Center in Austria. This software checks qualitative data for similarities on the basis of the Jaccard index, a statistic used for comparing the similarity and diversity of sample sets, defined as the size of the intersection divided by the size of the union of two sample sets, and creates a network of the attributes of two groups that are used by both or individually (Tan, Steinbach and Kumar, 2005)

The Jaccard index is used to compare the similarity and diversity of sample sets and is defined as the size of the intersection divided by the size of the union of sample sets. Apart from mere countings this allows to analyse and present the data as two-dimensional relations by so-called co-word maps, the visual representation of co-occurrences of keywords. This kind of representation should help to get a better overview than by the use of matrices, which become easily confusing, depending on the number of keywords. (Kopcsa and Schiebel, 1998)

Questionnaires were collected at the beginning of the financial crisis, from the second half of 2008 until the first half of 2009, from:

- 107 participants in four Executive MBA classes of the University of Technology, Brno, Czech Republic
- 86 questionnaires collected by college students during a seminar in northern Hungary (around Eger)
- 105 participants of numerous executive management courses of the University of Maribor in Slovenia

The sample comprises 36 top managers and 71 middle managers from the Czech Republic, 22 top managers and 64 middle managers from Hungary and 34 top managers and 71 middle managers from Slovenia. Both hierarchical groups are thus in the representative range. Regarding the breakdown by sector, the following emerges:

Table 1: Breakdown by sector

Sector	Percentage		
	CZ	HU	SLO
Banking and Insurance	25.7	8.1	2.8
Capital goods	15.8	15.1	6.3
Consumer goods	12.9	19.8	26.1
Services	11.9	2.3	14.4
Trade	9.9	26.8	15.3
Public sector	9.9	9.3	16.2
IT & Telecommunications	6.9	2.3	2.7
Consulting	4.0	7.0	4.5
Others (for instance: utilities, health and cultural organizations)	3.0	9.3	11.7
Total:	**100.0**	**100.0**	**100.0**

This breakdown satisfactorily reflects regional differences. While, in addition to being a well-developed banking area, the greater Brno region is mainly characterized by a technology focus on the engineering and electronics industries; the structurally rather weak Eastern Hungary is mainly dominated by the retail, construction and automobile industries. Slovenia, in contrast, has a high share of companies in the consumer goods, trade and services sectors. Only the public sector is – mainly due to a special focus on management education in the health sector – slightly overrepresented.

Regarding the mention of functions held by the interviewees, multiple answers were possible (see Table 2). Here it can be seen that Slovenian managers fulfill their tasks in, on average, 1.5 functional areas, while the respective values are about 1.7 in Hungary and 1.9 in the Czech Republic. This would indicate that the functional specialization has so far developed the furthest in Slovenia. However, this result has to be interpreted critically, particularly regarding its relational analysis.

Table 2: Functional areas of the interviewees

Functional area	Frequency		
	CZ (n=194)	HU (n=146)	SLO (n=171)
Marketing	47	23	17
Finance & Investment	28	19	22
Project Management	27	10	25
Organization	24	23	26
Production	22	17	16
Human Resources	12	14	17
IT	12	8	13
Logistics	9	24	13
Research and evelopment	7	2	6
Others	6	6	16

3.2 Empirical Results and Discussion

For the following analysis, we used country-specific, hierarchical allocations as descriptors as well as the 10 management competencies mentioned most frequently. These were:

Table 3: Ranking of Competencies

Competency	Frequency
Communication	113
Leadership	96
Marketing	66
Organizational Design	59
Strategic Management	52
Finance & Controlling	50
Foreign Languages	46
Process Management	40
Analytical Thinking	39
Decision Making	34

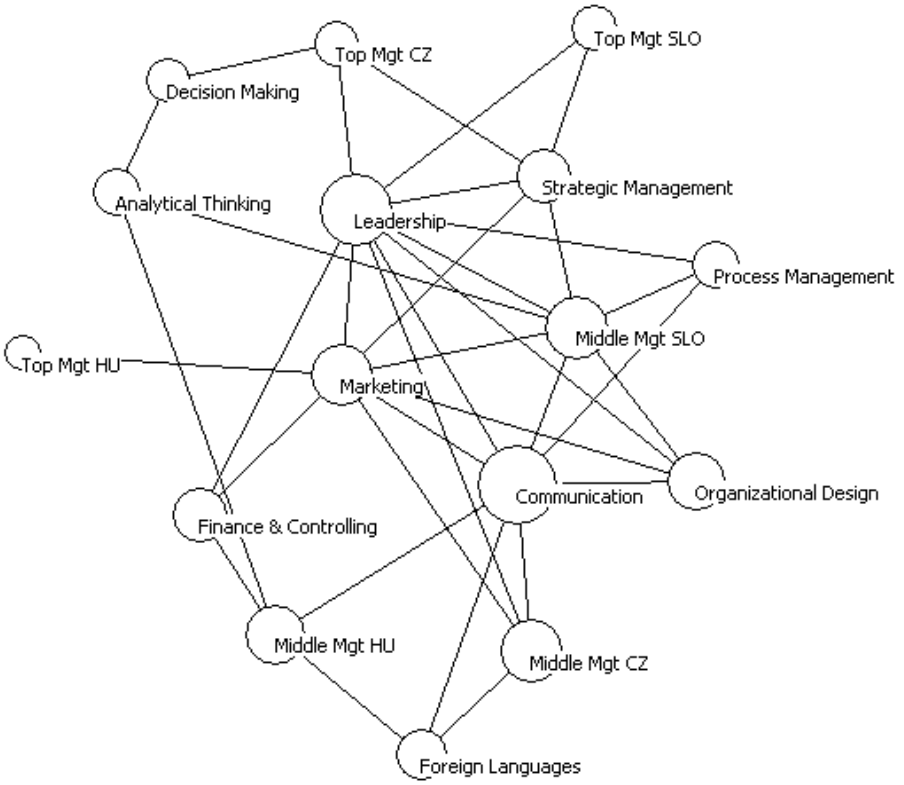

Figure 1: Co-word Map of Competencies

The co-word map thus derived shows a network density of 0.875 and a total number of 105 connections. This means that all management levels are linked to all competencies and also all competencies with each other. We then focused on the 35 strongest connections. These show Jaccard indices from 0.12 to 0.22. No stronger connections exist.

The figure above shows the central role of the competencies of communication, leadership and marketing. These clearly resemble the main current requirements from management in Eastern Europe. The remaining seven competencies, however, are also highly integrated.

From a country-specific, hierarchical perspective, middle management in Slovenia must be seen as strongly integrative. With seven connections to the competencies of communication, leadership, marketing, organizational design, strategic management, process management and analytical thinking, it has a role that goes far beyond that of classic middle management. This might also be due to the relatively low integration of Slovenian top management, which is caused by recent privatization processes and the dynamic changes of the ownership structure.

Middle management in the Czech Republic and Hungary, with four competencies each, already shows much less integration. While Czech middle managers focus on the three most important management competencies in Eastern Europe – communication, leadership, and marketing – and support these only with foreign language competency, Hungarian middle managers are, apart from communication, content with finance and controlling, foreign languages, and analytical thinking.

What is particularly surprising is the low integration of top management in all three countries. The strengths of Czech and Slovenian top management, for instance, are the classic ones of leadership and strategic management. The additional connection of Czech top management to decision making can be seen as an indication of rather authoritarian leadership. Hungarian top management, with its practically singular orientation towards marketing, is the strongest promoter of this disintegration.

A further interesting point is that – apart from decision making – core business competencies such as organizational design, process management or finance and controlling are connected to management only once. This suggests a lack of internal orientation of the companies in the three countries surveyed.

After analysing the current competencies, we will now take a look at the drivers of change that will, or at least should, influence the expected changes of competency in the future. Table 4 gives an overview of the ten most important drivers and also states their general assessment as opportunity or threat.

This ranking shows a very optimistic tendency of the managers. Seven out of ten drivers of change are seen as opportunities, while only market concentration, change in human resources – both also assessed positively in this sample – and the overall economic situation are seen critically.

Table 4: Drivers of Change

Driver	Frequency
Market Concentration – Threat	101
Change in Human Resources – Threat	97
Change in Human Resources – Opportunity	96
Economic Situation – Threat	94
Corporate Strategy – Opportunity	84
Market Concentration – Opportunity	79
Changed Organizational Structures – Opportunity	77
Process Optimization – Opportunity	75
New Management Techniques – Opportunity	74
Innovation – Opportunity	68

This co-word map shows a network density of 0.794 and a total number of 108 lines. To make sure that all management levels are linked to at least one driver, we focus on the 59 strongest connections. Below this number, Czech and Hungarian top managers would lose their connections to the co-word map. The Jaccard indices range from 0.13 to 0.35 and again no stronger connections exist at all.

Slovenian middle managers seem to plan with an assumption of a bright future and focus on six opportunities, that is change in human resources, market concentration, changed organizational structures, process optimization, new management techniques and innovation. The only obstacle is seen in the change in human resources, mainly as a lack of skilled professionals.

Hungarian middle managers see market concentration processes, the change in human resources and the economic situation as threats, which might be balanced by the positive perception of human resources and the belief in corporate strategy.

Czech middle managers regard market concentration, the change of organizational structures and innovation as very positive. This leads us to the assumption that the current development is also seen as a 'natural' selection process that will be survived by the strongest. Of course, some Czech middle managers also see the market concentration process more pessimistically.

Slovenian top managers take the current economic situation very seriously and focus on human resources and the

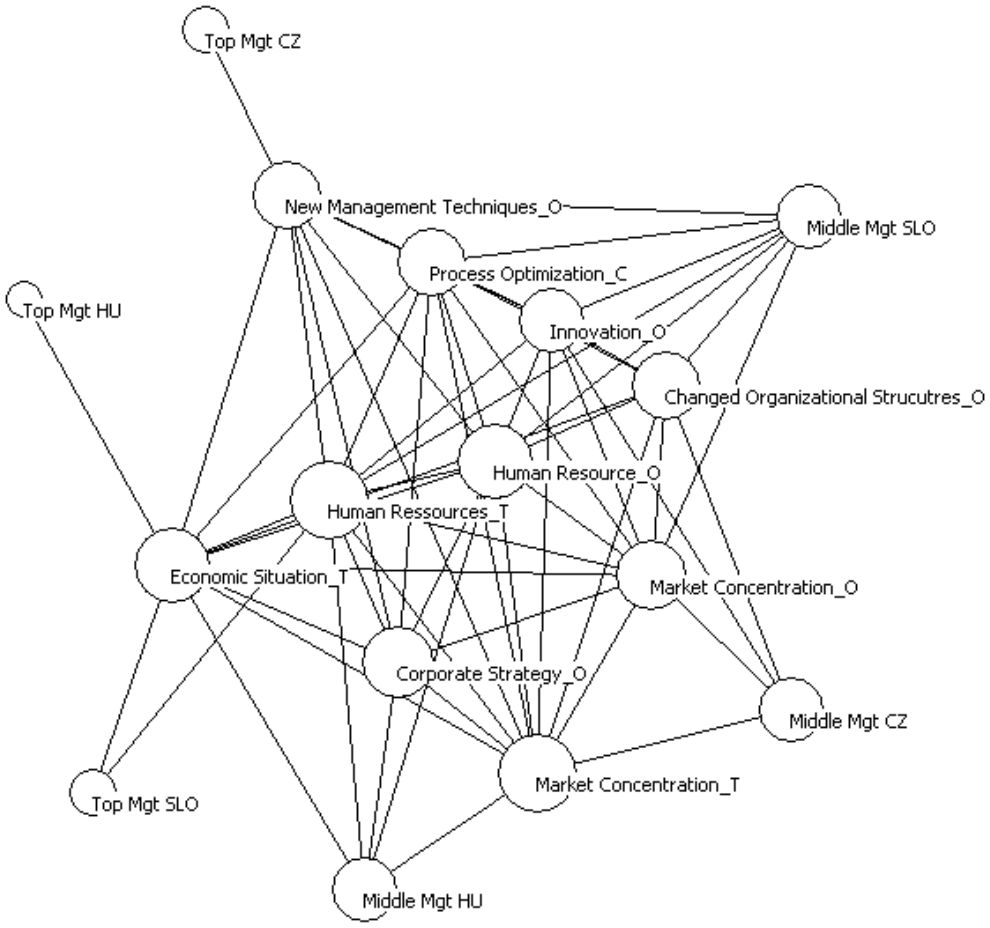

Figure 2: Co-word Map of Drivers of Change

economic situation as a threat. The last perspective is also shared with the Hungarian top managers. Only the Czech top managers seem to perceive the future more optimistically and focus on new management techniques as an opportunity.

In a last step, we again used country-specific, hierarchical allocations as descriptors and the 10 previously mentioned management competencies as most important for the future.

Table 5: Ranking of Competencies Needed in the Future

Competency	Frequency
Leadership	76
Communication	69
Foreign Languages	50
Marketing	50
Strategic Management	50
Finance & Controlling	48
Willingness to Learn	39
Ability to Innovate	38
Organizational Design	38
Process Management	31

The management competencies of willingness to learn and the ability to innovate are completely new. These two replace the competencies of analytical thinking and decision making. Despite the change of positions between foreign languages and organizational design, the ranking stays still the same.

The newly derived co-word map shows a network density of 0.772 and a total number of (again) 105 lines. Therefore, the density decreases – mainly because of the increased uncertainty of the assumptions concerning the future – but all management levels are still linked to all competencies; again, all competencies are connected with each other. Because of the higher uncertainty level, we now focus on the 40 strongest connections. These now show marginally lower Jaccard indices from 0.10 to 0.21; again, no stronger connections exist at all.

Figure 3 shows that Slovenian middle managers keep their maximum of seven connections; however, marketing and analytical thinking are replaced by the two new competencies: willingness to learn and ability to innovate. Middle managers in the Czech Republic and Hungary each have one connection less than before. In the future, the competency portfolio of Czech middle managers nearly stays the same, despite the reduction of communication skills, whereas Hungarian middle managers get rid of analytical thinking.

Slovenian top managers focus on the willingness to learn and on marketing, which replace the classical top management competencies of leadership and strategic management. This might lead to a critical situation in which learning and

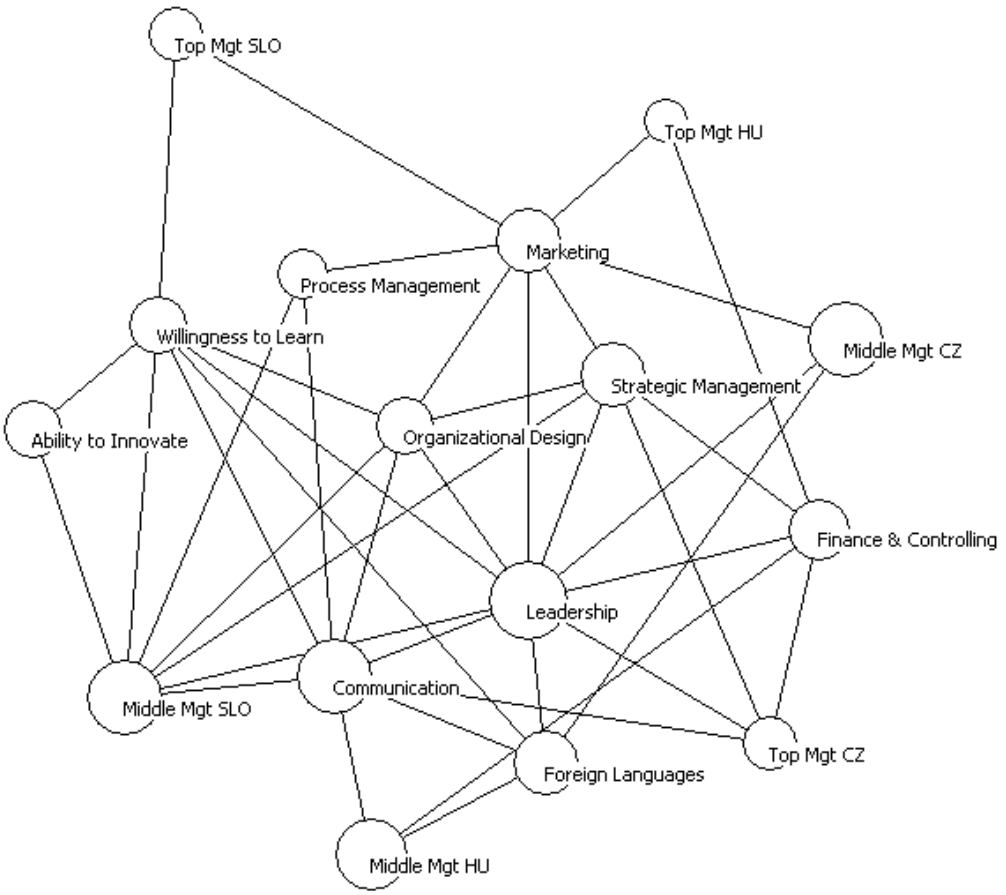

Figure 3: Co-word Map of Competencies Needed in the Future

innovation are appreciated but not guided by strategic goals and leadership. This lack of competencies will be dangerous for future development.

Leadership and strategic management keep their importance for Czech top managers. Furthermore, they reduce decision-making skills in general and replace them with communication and finance & controlling. This set of competencies seems to be optimal for handling the economic crisis. Therefore, this analysis has to highlight this change, which also goes hand-in-hand with the reduction of authoritarian leadership, which can often be observed in critical situations, but does not automatically lead to the best results.

Finally, the Hungarian top management decided to enlarge their marketing focus – most probably due to the financial crisis – with finance & controlling. From an external point of view, this only seems to be a reaction to the external drivers and not a needed pro-active handling of the current situation.

4 Conclusion

For a long time in business studies, management competencies have been seen as an uneven bundle that is heavily influenced by the hierarchical levels and functional elements within a company (Mumford, Campion and Morgeson, 2007). In this context, it is often forgotten that leadership is a social process of interaction that has mainly two objectives: (1) the emergent coordination of the corporate actors' actions (= generating a social order) and (2) promoting change in and of organizations (Uhl-Bien, 2006). Therefore, future research should be more concerned with the question of what competencies are expected of managers and what relations they have with one another.

Compared to the question on functional task areas (see Table 2), this relational method of analysis provides a completely different picture. Slovenian managers, who are considered to be the most focused, show (both top and middle management) the highest level of integration with a total of nine competency connections. Czech managers are considered to be the least focused, and with seven competency connections rank in the middle, while Hungarian management with just five connections comes last. From this difference, a necessary differentiation between explicitly declared cognition and implicitly relational actions has to be derived.

Slovenian middle managers show integrative management skills and their focus on a majority of internal, positive connotated drivers will lead to a future and employee oriented management style in the next years. Middle managers of the Czech Republic are more concentrated on managerial core functions and a mix of market concentration, internal change management, and innovation that can be regarded as a kind of 'surviving of the fittest' management model. Despite of these two contradictory ways, Hungarian middle managers have mainly to focus on the current crisis with a strong orientation torwards finance and controlling and the threats of market concentration processes, the current economic situation, and a lack of human resources – so the have to be seen as a kind of trouble shooters.

The top managers of all three contries are definitely less integrated. Czech and Slovenian managers show typical role models of strategic leaders, whereas Hungarian top managers only focussing on marketing. According to the drivers we can find an interesting switch: Slovenian top managers regard the future much more pessimistic and Czech top managers are much more optimistic than their colleagues from the middle management. Therefore, Slovenian top managers try to change their portfolio of skills and foster willingness to learn and marketing – so they endanger their position by a possible lack of strategic leadership, while Czech top managers stick to their competences and just reduce the authoritarian leadership style – but keep their strong position using financial control mechanisms. Hungarian top managers react too late to the financial crisis and show a certain unwillingness to change their behavior.

In the end, if one looks at the importance attributed to a competency (measured in number of mentions or evaluated), there seems to be a high alignment of management core competencies globally. However, if – as in our case – relational analyses are used, it can immediately be seen that role models diverge significantly from each other even in neighboring countries.

To briefly summarize, Czech management – with a special focus on the top management – seems to follow the most convincing competency changes to deal with the current drivers of change. Slovenian managers mainly focus on the willingness to learn and ability to innovate – both competencies that are ideally suitable for handling an uncertain and critical future – but here a lack of strategic direction also has to be stated. Whether Hungarian management can cope remains questionable and has to be described as a reactive approach without any clear guidelines for the future.

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Management kompetenc v Srednji Evropi: Primerjava čeških, madžarskih in slovenskih potreb po kompetentnosti

Po prevladujoči osredotočenosti na tranzicijski proces v državah Srednje in Vzhodne Evrope je bila ta tema zapostavljena zaradi bolj dramatičnih procesov združevanja in reorganiziranja ter trenutne finančne krize. V senci je tako ostalo dejstvo, da ne vemo skoraj ničesar o managerskih kompetencah v teh državah, ki lahko pomembno prispevajo ali pa ovirajo prihodnji razvoj. Zato bomo analizirali individualne kompetence skoraj 300 višjih in srednjih manangerjev v Češki republiki, na Madžarskem in v Sloveniji, primerjali različne skupine kompetenc in jih interpretirali v skladu z danimi gospodarskimi razmerami v teh državah.

Ključne besede: management kompetenc, človeški viri, tranzicijsko gospodarstvo, Češka republika, Madžarska, Slovenija

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Integrating Management Competencies Development with an Organizational Culture Formation

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The paper presents the first results of the IGA/2012/7 project "Versatility of Organizational Management and its Reflection in the Area of Organizational Culture". The paper tries to answer in particular a question if there exist and what are the relations between a process of management competencies development and process of organizational culture creation and change. The research is based upon two methods: (1) Leadership Versatility Index® (LVI®) and Denison Organizational Culture Survey (DOCS). The research data are presented in a form of two cases. Qualitative analysis of these data has led to two preliminary conclusions: (1) Some of the research expectations concerning an existence of the relations between organization´s management versatility and organizational culture might be confirmed in a future; (2) DOCS data can bring a new light on the LVI® results and on the process of management competencies development. They help managers to understand that a change and development of their management competencies is not their personal business but a need with important strategic consequences for the whole organization. Reliable answers to all research questions and hypothesises are conditioned by a statistical analysis of the data collected in more organizations, however.

Key words: leadership, management, versatility, organizational culture, competencies development

1 Introduction

This paper presents the first results of a three years long research project focused on an identification of the relationships between organizations´ management versatility and organizational culture. As such it is based upon the findings (i.e. Morgan 1986, Holland 1997; Hogan 2006, Kaiser and Overfield, 2010, Hartnell et al., 2011) about an existence of the relationships between personality of the key organizational managers and inner organizational environment. On a theoretical level the project refers to the two conceptions: (1) theory of versatile leadership (i.e. Kaplan and Kaiser 2006; Pavlica et al. 2010) which represents a new original approach to leadership definition as well as to management competencies measurement and development; (2) Denison´s dynamic model of organizational culture (Denison et al. 2012). These approaches will be described in a more detailed way in chapter 2 (Methods). On a more practical level this project tries to integrate and harmonize a process of managers´ competencies development with a process of organizational culture management.

History offered us tens of the different views of leadership in organizations, however only a limited number of these theories have found a wider application in companies during the past 40 years.

- Contingency approach. As its main authors are usually presented Vroom and Yetton (Osland et al., 2001). As the main ambition and goal of this approach can be seen an attempt to define principles and rules determining effectiveness of the different leadership styles. This theory has uprooted a myth about an existence of one optimum leadership style.
- Approaches based upon cross-cultural research. As their "father" has been identified Dutch psychologist Hofstede (Gatley et al., 1996). The main contribution of Hofstede

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and his followers rests in a demonstration of the relations between particular leadership styles effectiveness and a wider cultural environment.
- Situational leadership theory which has been usually associated with Hersey and Blanchard (1993). This conception stresses a need to base a management and development of the employees upon a systematic assessment of their personal and professional maturity.
- Coaching which has become strongly influential during the two past decades (i.e. Whitmore 2009). This view stresses a need to approach different social subjects (individuals, groups and organizations) as autonomous entities which are themselves capable to manage effectively both their (personal) problems and the process of their own development and learning.
- Paradox approach (also "Competing Values Framework") proposed in 80-ies of the past century by an American sociologist Quinn (Osland et al., 2001, Kaiser and Overfield 2010). Quinn argued that conflicting needs (orientation towards human relations VS towards rational goals; focus on internal processes VS focus on opening the system to external affects) are inherent in complex organizations.
- 360° feedback methodology which has been used widely during the past decade. This approach tries to incorporate objectivity into the process of leadership effectiveness measurement. Managers are usually evaluated by their superiors, colleagues and subordinates.

All of the conceptions listed above have delivered several important "messages"about leadership:
- Particular effectiveness of each leadership style is always conditioned by a complex of the different external – culture, organization, situation at hand, employees etc. – factors.
- Managers´ attention to and evaluation of the external conditions should be combined with an individual approach to employees.
- Coaching represents a useful leadership and staff development technique.
- Each management style/behavior has its "competing"/"conflicting" however functional opposite. Different managerial approaches and techniques should be combined in a flexible and to a specific context/situation responsive way.
- The process of an organization's management competencies development becomes more effective when it refers to the results of the instruments providing a feedback mediated by different groups of social actors – managers´ superiors, colleagues, subordinates etc.

Regardless to their value and contribution it is possible to identify also some of the limitations and liabilities of the popular leadership theories and approaches:
- Sometimes too complicated and abstract recommendations and techniques. This is obvious in particular on a contingency approach.
- Simplified perception of managerial work and role – i.e. common attempts to "squeeze" managers into one of the traditional leadership styles (autocratic, democratic, liberal etc.). These attempts are based on a belief in an existence of a "typical" model of an individual behaviour. Several important facts have been ignored in this respect, however: (1) Psychological research demonstrates that an occurrence of the "pure" types is rare – majority of the population fall within the so called "mixed" types. (2) In a long-term perspective each individual behaves contradictory – even the most outstanding autocrat can behave as a liberal sometimes and the opposite. (3) Styles tend to be defined in a contrast way as mutually self-exclusive alternatives. Within each of them it is possible to apply the same conducts and skills, however – i.e. a fact that a certain manager has been labelled as an "autocrat" does not mean necessarily that he/she cannot listen or discuss as an "liberal" or "democrat".
- Predominantly behaviouristic view of the managerial competencies as the conducts independent on manager's personality and organizational context.

Conception of versatile leadership refers to tried elements of the approaches listed above (in particular to Competing Values Framework and Situational leadership) and offers a promising alternative for overcoming their main limitations. It points to a fact that today's managers work in a complex world. Every decision can be a trade-off in an economy fraught with paradoxical demands: Companies we compete with in one arena may be our partners in another. Maximizing profits today often conflicts with investing in tomorrow. The need to produce can clash with concern for people and human limits. To be up to the task, managers must be equally complex in their leadership (Pavlica et al., 2011).

Being a complex leader boils down to the ability to play multiple roles, even contradictory ones, without emphasizing some at the expense of others. Versatility means the ability to use opposing approaches, unrestricted by a bias in favour of some ways of leading and a prejudice against others. Versatile leadership can be seen also as a new way of understanding flexibility – "adjusting one's leadership style, methods, or approach in response to different or changing contextual demands in a way that facilitates group performance" (Kaiser and Overfield, 2010: 106) – in the area of management and leadership.

The extent to which managers are versatile is highly related to a team effectiveness. Statistical studies show that average versatility – effectiveness multiple correlation is $R = 0,71$, squaring this result leads to $R^2 = 0,50$. This means that versatility accounts for half of what separates the most well-regarded leaders from the least well-regarded (Kaiser and Kaplan 2007). A degree of manager´s versatility also positively correlates with a long-term success in his/her career (Kaplan and Kaiser, 2006, Pavlica et al., 2010).

The second theoretical underlying stone of our project is represented by Denison´s view of organizational culture. Also this approaches refers to the Quinn´s Competing Values Framework and as such it can be conceptually related to the versatile view of leadership. Denison and his team (Denison et al., 2012) has tried to understand the cultural traits that explain the difference between high- and low-performing organiza-

tions. Their studies have led to a proposal of a dynamic model which helps to identify both deficits and imbalances in the area of organizational culture.

In reference to the facts presented above this project tries to answer the following basic questions.

- "Long term research conducted by the authors of the versatile leadership conception proves significant relation between managers´ versatility and effectiveness (productivity and vitality) of their teams. Is it possible to identify also relations between the versatility of the key organizational managers and organizational culture as it has been defined and measured by the Denison´s model of organizational culture?"
- "What are the differences between cultures in organizations managed by versatile and lopsided managers?"
- "Does it make sense to integrate a process of management competencies development with a process of organizational culture formation and change?"

The research data we have collected and analysed during the first year of the project are offering a partial answer to the last basic question.

2 Methods

As was mentioned above this part of our paper offers more detailed descriptions of the versatile leadership conception and of the Denison´s model of organizational culture, including unique research techniques based upon these approaches. After this additional research questions and expectations are articulated.

As it has been indicated before, versatility represents a way which thinks about leadership in terms of pairs of opposites, opposing forces that are both useful and complementary (Kaplan and Kaiser, 2006; Pavlica et al., 2010). Many opposing dimensions of leadership have been identified over the years: autocratic vs. democratic, task-oriented vs. people-oriented, initiative vs. consideration, change vs. stability, transformational vs. transactional, and so on. Common to these pairings is that each side is an important function that has its place in effective leadership. "Either/or" won't do; organizations require leaders to be "both/and" when it comes to these opposing ways of leading.

Two broad distinctions have been joined to provide an inclusive model of opposites that make up managerial work. First is John Kotter´s classic distinction between leadership versus management. Kotter described management as "doing things right" and achieving efficiency and predictability through command and control. In contrast, he portrayed leadership as "doing the right things" and inspiring people with a vision of change.

A second broad distinction is between the interpersonal aspects of leadership and the organizational aspects of leadership. The interpersonal part concerns "how" one leads, and largely revolves around a self-assertive, directive style versus a more inclusive, supportive style. The organizational part concerns "what" one leads and revolves around the technical and tactical details of execution in the short-term versus planning ahead to position the organization or team with a strategy for the future.

Combining the Management versus Leadership distinction with the "How" versus "What" distinction leads to the model of opposing behaviors (Kaiser and Overfield, 2010) presented below (see Figure 1).

Degree of managers´ versatility is measured by the means of 360° feedback tool Leadership Versatility Index® (LVI®).

Most of the existing 360s use 5-point rating scales. Their problem is that they do not indicate when managers do something too much. Instead, they seem to assume that „more is better" and imply that a high score is the best score. Furthemore they do not tease apart overdoing it and underdoing it as distinct sources of ineffectiveness.

To remedy this problem a new rating scale (curvilinear scale, see Figure 2) was developed. It ranges from –4 to + 4. Values from –4 to –1 represent degrees of "too little" (deficits in manager´s conduct), values from +1 to +4 represent degrees of "too much" (excesses in manager´s behaviour). Ratings 0 represent "right amount" of a particular managerial behavior, approach or technique (Kaiser and Kaplan, 2007).

	Management Achieving efficiency through command and control	**Leadership** Inspiring people with vision and change
Interpersonal "How"	***Self-assertive and directive*** *Takes charge Declares Pushes*	***Inclusive and supportive*** *Empowers Listens Supports*
Organizational „What"	***Short-term, operational*** *Execution Efficiency Order*	***Long-term, strategic*** *Direction Growth Innovation*

Figure 1. A model of opposing behaviors

← Too little ←				The right amount	→ Too much →			
o -4	o -3	o -2	o -1	o 0	o +1	o +2	o +3	o +4

Figure 2. Curvilinear rating scale

In accordance to a model of opposing behaviours the LVI® measures manager´s versatility along two dimensions represented by opposites between: (1) Self-assertive, directive and Inclusive, supportive behaviour; (2) Short-term executive/operational and Long-term strategic behaviour. Each pole is represented by 12 items, the whole technique contains 24 pairs of opposing statements – descriptions of specific managerial behaviours (i.e. *Pushes people hard vs Shows appreciation; Future oriented vs Results oriented)*. LVI® measures also managers´s effectiveness in terms of a productivity (volume

and quality of the outputs) and vitality (morale, engagement with work and group cohesiveness) of his/her team.

Research with the LVI® also shows that truly well-rounded and versatile managers are in the minority. Versatility scores are percentages that can be interpreted like letter grades in school, where higher percentages indicate mastery: 90% A, 80% B, 70% C etc. The average versatile score in Kaplan DeVries Inc. normative database (with ratings for 1 123 senior managers) is 81%, a low B (Kaiser and Kaplan, 2007). In fact, just over half of managers get B´s and about 40% get lower than a B, while only 6% get an A (see Figure 3).

There exist two possible general reasons explaining why do so many managers lack versatility. It may be that leadership is like any other skilled performance; it takes talent, years of practice, hard work and concentrated study to master. It also may be that a new paradigm of leadership is emerging to deal with increased complexity and a faster pace of change and this requires multifaceted managers like never before. Either way, the next question is how can managers expand their repertoire and become more versatile leaders? A key to the solution is an assessment tool that identifies how versatile the leader is now, including clear strenghts, strenghts overused, as well as shortcomings. This is precisely what LVI® was designed to do.

Overall Versatility	Percentage of Managers
90% – 100%	6,1%
80% - 90%	54,4%
70% - 80%	31%
60% - 70%	7,5%
Below 60%	1%

Figure 3. Distribution of Versatility Scores

Much of modern management development is based on behaviorism. These approaches start and end with behavior: behavior-based assessment, behavior modeling, behavior based peformance coaching, and so forth. Of course, behavior is the bottom line when it comes to performance. Performance, however, isn´t a matter of behavior alone; it is also the product of mindset and emotion (Hogan and Kaiser, 2005; Hogan, 2006).

The LVI® is ideally suited for setting up both the outer work and the inner work of development.

The outer work of development involves directly changing behavior. In the case of something a manager does too little, the needed chnage is to do more. This may involve an element of coercion because manager must make himself do something he has neglected or avoided. In the case of "overkill", the needed change is to do less. This requires manager to ease up and be more selective.

Direct attempts to change behavior may only go so far. The next question is, then why does the troublesome behavior persist? The reasons given may be things "out there" in the work environment, but more leverage may be "inside" the manager. Growing as a leader often hinges on growing as a person (Kaplan and Kaiser, 2006).

Personal development means that the path to improving one´s leadership may require a thoughtful examination of basic beliefs and emotional investments. It can start with a few simple, ever so practical questions: Why do you do too much here – what compels you? Why do you do toolittle there – what holds you back? Experience shows, that behind a lopsided leadership there often is:

- Crooked thinking. Some managers have an incomplete and/or incorrect understaning of their job.They are aware of only one side of the "whole story" – they may believe in the need to achieve the results while overlooking the people side, for example.
- Faulty gauges. Some managers have a trouble judging how much is too much. Just as a broken thermostat can overheat or chill a room, a faulty gauge can cause a leader to go overboard, or come up short.
- Polarized values. Lopsided leadership often rests on polarized values, where one side is idealized and the other is devalued. On one hand, some managers can´t imagine such a thing as too much of something they believe in. Consequently, they are liable to overdo it. On the other hand, they will often disparage the complementary approach.
- Fears. There can be a fear on the part of overly directive individuals of not being powerful enough that produces the excess. And there can be a fear on the part of overly supportive managers, of becomming an exaggerated version of forcefulness, as if moving in that direction means being arrogant, rude or abrasive.
- Unrecognized strenghts. Some people may fail to appreciate their own strenghts, either in terms of particular skill or one´s capability in general. Underrating oneself can compel a manager to try too hard to compensate; underestimate, overdo. It can also prompt an individual to avoid certain tasks for fear of not performing well; underestimate, underdo.

Versatile leadership conception represents a progressive approach which inspires further research activities. One of them is represented in our project by an attempt to apply an idea of versatility on a wider organizational scale, in particular to analyse what are the relations between management´s versatility (and consequently management competencies) and organizational culture.

After discussing our project´s aims with both our research colleagues from Kaplan DeVries Inc. and experts from Denison Consulting (see Acknowledgements), we have decided to use Denison Organizational Culture Survey (DOCS) as an appropriate method for organizational culture analysis.

Studies conducted by Denison and his colleagues (Denison et al, 2012) have identified the four basic traits of organizational culture – mission (sense of purpose and direction that allows to define organizational goals and strategies), adaptability (degree of flexibility and responsiveness to business environment), involvement (commitment of all organizational members to work and goals), and consistency (set of core values, rules and practices that coordinate and integrate behaviour of organizational members). These basic traits can be linked to different performance measures such

as profitability, sales growth, quality, innovation, and market value. Out of these studies an original way to measure culture – DOCS – was developed.

Like a versatile view of leadership also Denison´s model of organizational culture focuses on a set dynamic contradictions/tensions that must be managed. In particular DOCS highlights four such tensions: (1) the trade-off between stability and flexibility; (2) the trade-off between internal and external focus; (3) tension between internal consistency and external adaptability; (4) tension between mission and involvement (Denison et al., 2012).

The core of DOCS is a sixty-item survey, with fifteen questions about each trait (all traits are defined by the means of three indexes – see Figure 4). The survey uses five-point Likert scale in which 1 = strongly disagree and 5 = strongly agree. Research shows (Denison et al., 2012) that an effective organization scores high on all traits and indexes.

External focus	**Adaptability** • *Creating change* • *Customer focus* • *Organizational learning*	**Mission** • *Strategic direction* • *Goals* • *Vision*
Internal focus	**Involvement** • *Empowerment* • *Team orientation* • *Capability development*	**Consistency** • *Core values* • *Agreement* • *Coordination/ integration*
	Flexible	**Stable**

Figure 4. DOCS model of organizational culture

Keeping the basic questions (see Introduction) in mind an additional research question has been formulated:

- "Which DOCS traits and indexes correlate with an overall managers' versatility? Which DOCS traits and indexes correlate with partial managers' versatility, represented by scores for directive VS supportive, and operational VS strategic leadership?"

In respect to the nature and content of LVI® and DOCS also four working hypothesises have been proposed:

- We expect that organizations with highly versatile management (average versatility indexes values 85% and above) will score high (average values 4,0 and above) also on DOCS traits and indexes. At the same time we expect that organizations with lopsided management (average versatility indexes values 70% and below) will score low (average values 2,5 and below) on DOCS traits and indexes.
- We expect positive correlations between overall management versatility and DOCS traits and indexes values.
- We expect positive correlations between the scores for partial versatility on a dimension long-term (strategic) VS short-term (operational) leadership and the values for the DOCS traits mission, adaptability and consistency.
- We expect positive correlations between the scores for partial versatility on a dimension directive VS supportive leadership and the values for the DOCS trait involvement.

The whole project has been scheduled for a period of three years. It has started in June 2012 and should be finished in June 2015. The data will be collected in the large and middle size organizations operating on a Czech market. Both methods LVI® and DOCS were translated to Czech by the back translation technique.

3 Results

In June 2013 a basic analysis of the data collected in two middle organizations was finished. On one hand it is too little information for answering all of our research questions and working hypothesises. On the other hand these data can illustrate how the processes of management competencies development an organizational culture management fit together.

The results are presented in a form of two short cases. In each of these cases the research team proceeded in the following way:

- Initial workshop with the members of an organization´s top management. During this the goals of the project (including what are the potential practical benefits for a company) and nature of LVI® and DOCS were explained.
- Data collection. The LVI® was applied on a sample of top managers. After this DOCS was distributed to all employees and managers of an organization.
- Workshop focused on the LVI® results. First, group of managers participating in the project were explained how to understand the LVI® results. Second, researchers provided all of the managers with individual coaching interview focused on in depth understanding of received LVI® reports as well as on an identification of the key personal strengths and weaknesses (deficits and excesses in the area of leadership and management competencies). At the end of the interview the managers were asked to prepare the personal development plans.
- Final workshop focused on the DOCS results presentation as well as on an identification of their links to the data obtained by the means of the LVI®.

Case 1: Mechanical Engineering Company

The first organization we have analysed was a Czech branch of an international mechanical engineering company. It employs more than 100 people and its top management is represented by 9 people. The company operates on a Czech market for more than ten years. A new young director has been appointed (the former one retired) when we established initial contacts and cooperation with its management. A major ambition of a new director was to make "his" organization more competitive and autonomous. Together with the HR manager he appreciated an offer to participate in our research project as an opportunity to get a qualified feedback about organization´s and its management developmental potential and needs.

As the first technique was applied the LVI® on a sample of 9 managers. There average experience with managerial position and work is 5 years (minimum 2 years, maximum 11

years) what indicates that the management team is relatively young. Figure 5 shows the average LVI® scores for the group.

	Overall versatility	Directive/ supportive versatility	Operational/ strategic versatility
Group average	82%	80%	83%

Figure 5. Average versatility scores of the managers from organization 1

According to these data the organization´s management team versatility scores are neither "excellent" nor "poor". Normative database (see Methods) shows that the scores between 80% - 90% are the most common among the managers. This organization´s management team as a whole definitely has a potential to be successful and effective in a future.

The lowest score (80%) was reached for a dimension Self-assertive, directive VS Inclusive, supportive leadership. This indicates that probably the major challenges in the area of the management competencies development are associated with "how" the managers approach and lead their staff. A deeper insight into this area can offer us an overview of the major excesses (see Figure 6) and deficits (see Figure 7). As a major excess was understood an item on which a manager was rated by all his/her co-workers (superiors, colleagues, subordinates) by a value 1 and above on average. As a major deficit was understood an item on which a manager was rated by all his/her co-workers (superiors, colleagues, subordinates) by a value - 1 and below on average. Letter indexes on items have the following meaning: f = item represents directive, e = item represents supportive, o = item represents operational, s = item represents strategic pole of leadership.

Item	Frequency
8f: Defends his/her position – doesn´t back down easily. (Declares)	**3**
9f: Pushes people hard. (Pushes)	**2**
2f: Takes the initiative – seizes the opportunity to lead. (Takes charge)	**2**
3f: Sets clear expectations – tells people what to do. (Takes charge)	**1**
3e: Gives people the latitude to decide how to do their jobs – hands-off. (Empowers)	**1**

Figure 6. The major excesses within a management team of organization 1

All of the major excesses fall within a dimension directive / supportive leadership. Eight (8) out of nine (9) strong excesses represent a pole of Self-assertive, directive approach to people. When related to general areas of management competencies these results show that some members of the management team tend to "declare" themselves too much (as the opposite to competence of "listening"), tend to "take charge" too much (as the opposite to competence of "empowering" people) and tend to "push" people too much (as the opposite to competence of "supporting").

Item	Frequency
5s: Expansive – aggressive about growing the business. (Growth)	**4**
6s: Ambitious to improve the organization – launches many change initiatives (Growth)	**3**
7s: Willing to make bold moves. (Growth)	**3**
1s: Spends time and energy on long-term planning – future oriented (Direction)	**2**
2s: Thinks strategically – takes a high level view of where the unit is going. (Direction)	**2**
6e: Draws people out – wants to know where they stand. (Listens)	**2**
11e: Sensitive – careful not to hurt the other person´s feelings (Supports)	**2**
5e: Participative – includes people in making decisions. (Listens)	**1**
7e: Open to influence – can be persuaded to change his/her mind. (Listens)	**1**
3e: Gives people the latitude to decide how to do their jobs – hands-off. (Empowers)	**1**
9f: Pushes people hard. (Pushes)	**2**

Figure 7. The major deficits within a management team of organization 1

Most of the deficits (14) represent competencies associated with strategic leadership. Members of the management team tend to be (10 cases) too little oriented on organization´s "growth"(as the opposite to operational orientation on "efficiency") and (4 cases) too little concerned with "directing" an organization towards future perspectives (as the opposite of operational orientation on "execution" and immediate results). Four (4) identified strong deficits are associated with "listening" to people correspond to excesses in the area of „declaring"– being too decisive, forthcoming and even stubborn. Two otter deficits are associated with "supporting" people and one with "empowering" – this also reflects an identified overuse of the approaches based on directive and self-assertive leadership.

Two managers have troubles with "pushing" people towards personal responsibility and high performance. During the coaching interviews we found out, however, that this overall low rating on an item 9f is probably a result of their unequal approach to people. Because of different reasons they tend to be too protective towards some of their subordinates while at the same time they treat the rest (majority) of their staff in a relatively strict and tough way.

After the LVI® we have applied DOCS as both a resource of information about organization´s 1 culture and additional interpretative framework for understanding the meaning of versatility scores. The DOCS data (see Figure 8) are presented in two forms: (1) averages – average is calculated from the all

ratings on a five point scale; generally "good" are the values 4 and above; (2) percentiles – they represent benchmark results based on more than 1000 organizations rated by DOCS; i.e. percentile 80 means that 20% of the companies in database have reached the same or higher score and 80% of companies reached the same or lower score on a particular index than an organization „at hand".

Trait	Index	Average	Percentile
Involvement	Empowerment	2,93	7
	Team orientation	3,00	6
	Capability development	3,52	61
Consistency	Core values	3,25	12
	Agreement	2,93	9
	Coordination & integration	2,93	27
Adaptability	Creating change	2,96	23
	Customer focus	3,14	7
	Organizational learning	3,26	55
Mission	Strategic direction and intent	3,43	53
	Goals and objectives	3,41	43
	Vision	3,10	45

Figure 8. DOCS results for an organization 1

According to the averages themselves the culture of an organization 1 could be easily perceived as an ordinary and "normal" one. The percentiles thus offer us more valuable information.

Within a dynamic perspective a culture of organization 1 can be interpreted in the following way:

1. Tension between internal ("involvement" and "consistency") and external ("adaptability" and "mission") focus. In this respect it is obvious that organization's management pays much more systematic attention to the external circumstances and conditions than to a consolidation and effective management of the internal resources and processes (except of "capability development"). The first recommendation concerns a need to begin to pay a systematic attention the internal life of an organization.
2. Tension between stability ("mission" and "consistency") and flexibility ("adaptability" and "involvement"). Stable aspects of organizational culture are, (except of an "agreement" about important issues and a clear/explicit definition of the "core values") managed more effectively than phenomena and processes associated with both internal and external vitality (except of "capability development" and "organizational learning"). The second "warning" points to a need to define and implement rules, principles and policies which will make the organization flexible and „ready for action".
3. Tension between (internal) consistency and (external) adaptability. There is a plenty of room for a change and development in both of these areas of organizational culture. On a side of consistency the very low percentiles for indexes "agreement" and "core values" indicate that no clear rules and norms defining the areas of desirable/appropriate and undesirable/inappropriate behaviour have been implemented yet. On a side of adaptability there are the warning signals that organization lacks a "customer focus" (possible reason is that most of its business have been mediated by a foreign "mother" before) and abilities associated with "creating change" (i.e. flexible working procedures, cooperation between departments, active seek for the new opportunities).
4. Tension between mission and involvement. On this level of an analysis a contrast between relatively well elaborated organization´s mission and poor involvement of its employees (except of focus on "capability development") deserves our attention. Strategic visions, goals, intents etc. should be brought to life through an active participation of the employees on their definition and by the means of establishing cooperative relations and spirit across the whole organization.

It is possible to identify several interesting links between the LVI® and DOCS results. First of all organization´s culture deficit in the area of "empowerment" correspond to the LVI® findings about imbalances on a dimension of directive VS supportive leadership – managers tend to base their leadership style on competencies associated with directive and self-assertive approaches at the expense of supporting, empowering and listening to their subordinates (see Figures 6 and 7).

The organization´s culture deficits in the areas of "creating change" and "customer focus" can be related to the LVI® deficits in the area of competencies associated with strategic leadership, in particular orientation on growth (i.e. growing the business, personal will to take a risk, launching change initiatives) and directing an organization towards future (i.e. strategic thinking, long term-planning).

Organization´s culture deficits in the area of team orientation correspond up to a certain degree with the LVI® finding concerning team effectiveness (this wasn´t presented above). Six (6) out of nine (9) teams led by the rated managers were evaluated as the groups with relatively low effectiveness (below 50 percentile in a long term database) on both productivity (quantity and quality of outputs) and vitality (climate, commitment, cohesiveness) measures.

It is possible to say that DOCS data have not only mediated a useful feedback about organizations' culture but that they brought a new light on the LVI® results. LVI® results were originally presented as an information about the degree of personal versatility (strengths, deficits and excesses in the area of competencies) of the managers. It was mostly up on the individual managers if they accept this feedback and decide to change their behavior and attitudes. Illustration of the links between DOCS and LVI® help them to understand that a change and development of their management competencies is not their personal business but a need with important strategic consequences for the whole organization. After this insight

organization´s management has decided to prepare a workshop focused on a detailed elaboration of both individual personal development plans and a plan for a joint learning of the whole management group. They have also asked our research team to give them a new LVI® and DOCS feedback next year.

Case 2: Organization producing packaging

The second organization we have analysed was a Czech branch of an international company producing packaging. It employs app. 90 people and its top management is represented by 4 people. The company operates on a Czech market since 1997. Managers felt that they should substitute their rather spontaneous attitude to individual and organizational learning by a systematic approach based on an expertise.

Also here we started with an application of the LVI®. Average experience of these 4 managers with managerial position and work was 9, 5 years (minimum 4 years - director, maximum 20 – production manager). Figure 9 shows the average LVI® scores for the group.

	Overall versatility	Directive/ supportive versatility	Operational/ strategic versatility
Group average	82%	79%	85%

Figure 9. Average versatility scores of the managers from organization 2

Similarly like in a case 1 also these data present the organization´s management team versatility as neither „excellent" nor „poor".

The lowest score (79%) was reached for a dimension Self-assertive, directive VS Inclusive, supportive leadership. This indicates again that probably the major challenges in the area of the management competencies development are associated with "how" the managers approach and lead their staff. This doesn´t concern a (female) director, who scored 91% on this dimension. The other managers´ scores were 73%, 75% and 76%. A deeper insight into this area can offer us an overview of the major excesses (see Figure 10) and deficits (see Figure 11).

Item	Frequency
2f: Takes the initiative – seizes the opportunity to lead. (Takes charge)	**2**
4f: Steps in – gets personally involved when problems arise. (Takes charge)	**1**
7f: Forthcoming – tells people what is on his/her mind. (Declares)	**1**
8f: Defend his/her position – doesn´t back down easily. (Declares)	**1**
9f: Pushes people hard. (Pushes)	**1**
8o: Seek efficiencies – looks for ways to contain or reduce costs. (Efficiency)	**1**

Figure 10. The major excesses within a management team of organization 2

Six (6) out of seven (7) major excesses represent a pole of Self-assertive, directive approach to people. When related to general areas of management competencies these results show that some members of the management team tend to "take charge" too much (as the opposite to competence of "empowering" people), tend to "declare" themselves too much (as the opposite to competence of "listening"), and tend to "push" people too much (as the opposite to competence of "supporting"). One manager is too much focused on efficiency (represents pole of operational leadership).

Item	Frequency
6e: Draws people out – wants to know where they stand. (Listens)	**1**
7e: Open to influence – can be persuaded to change his/her mind. (Listens)	**1**
9e: Shows appreciation – goes out of his/her way to make other people feel good about their contribution. (Supports)	**1**
11e: Sensitive – careful not to hurt other person´s feelings. (Supports)	**1**

Figure 11. The major deficits within a management team of organization 2

All major deficits (4) represent competencies associated with supportive leadership. Members of the management team tend to be (2 cases) too little oriented on listening to people and (2 cases) too little focused on supporting the subordinates. In general the management tends to prefer the use of directive and self-assertive approaches at the expense of inclusive and supportive leadership. None of the strong deficits represents dimension operational - strategic leadership.

The DOCS data for organization 2 are presented in Figure 12.

Trait	Index	Average	Percentile
Involvement	**Empowerment**	3,20	22
	Team orientation	3,22	18
	Capability development	3,18	17
Consistency	**Core values**	3,48	36
	Agreement	3,05	20
	Coordination & integration	3,04	38
Adaptability	**Creating change**	3,26	66
	Customer focus	3,35	28
	Organizational learning	3,23	51
Mission	**Strategic direction and intent**	3,23	33
	Goals and objectives	3,40	43
	Vision	3,20	57

Figure 12. DOCS results for an organization 2

Also in this case the more valuable and reliable information's have been mediated by the percentiles.

Within a dynamic perspective a culture of organization 2 can be interpreted in the following way:

1. Tension between internal (involvement and consistency) and external (adaptability and mission) focus. Similarly like in a case 1 also here it is obvious that organization´s management pays much more systematic attention to the external circumstances and conditions than to a consolidation and effective management of the internal resources and processes. Managers should no longer ignore the internal "affairs".
2. Tension between stability (mission and consistency) and flexibility (adaptability and involvement). Stable aspects of organizational culture are, (except of an agreement about important issues) managed more effectively than phenomena and processes associated with organization´s flexibility.
3. Tension between (internal) consistency and (external) adaptability. There are at least two important topics for a change and development on this pair of opposites. On a side of consistency the very low percentile for index "agreement" indicates that no clear rules and norms defining how to behave in conflict and ambiguous situations have been defined and implemented yet. On a side of adaptability there is the warning signal that organization should increase its "customer focus".
4. Tension between mission and involvement. On this level of an analysis a contrast between relatively well elaborated organization´s mission and poor involvement of its employees on all measured indexes is apparent. Managers, in particular those "under" a director, will have to change their approach and attitudes towards subordinates significantly.

What are the links between the LVI® and DOCS results in this case? The results of these two techniques correspond together in two respects at least. First, organization´s 2 culture deficit in the area of "empowerment" (and maybe also in the area of "capability development") correspond to the LVI® findings about imbalances on a dimension of directive VS supportive leadership – as it was stated before members of the management team tend to base their leadership style on competencies associated with directive and self-assertive approaches at the expense of supporting, empowering and listening to their subordinates (see Figures 10 and 11).

Second, organization´s culture deficits in the area of team orientation probably reflect to a certain degree the LVI® findings about team effectiveness. Three (3) out of four (4) teams of the rated managers were evaluated as the groups with relatively low effectiveness on both productivity (quantity and quality of outputs) and vitality (climate, commitment, cohesiveness) measures. As the only one effective was evacuated director´s team (composed of the members of management team and administrative staff).

Also in this case the DOCS data have not only mediated a useful feedback about organization´s culture but that they brought a new light on the LVI® results, in particular those associated with a direct management of the individuals and teams/groups.

4 Discussion

The data collection process was started in February 2013 and will continue till December 2014. The data available at the moment were collected in two organizations. As it has been stated before, they do not represent sufficient amount of information for a statistic analysis and for answering all of our research questions and working hypothesises. On the other hand our mainly qualitative analysis of these data enables us to formulate two preliminary conclusions:

- Some of our expectations (see research questions and hypothesises) about an existence of the relations between organization´s management versatility as it is measured by the LVI® and organizational culture traits and indexes as they are measured by DOCS can be confirmed. Two cases presented above suggest that the LVI® results for a dimension "self-assertive, directive VS inclusive, supportive" leadership correspond, up to a certain degree, to the DOCS findings for and index "empowerment". In both of our cases/organizations also a possible correspondence between the LVI® results concerning "team effectiveness" and DOCS data for and index "team orientation" was indicated. We will propose a new working hypothesis on a basis of this finding. And, finally, case 1 shows that there can exist relations between the LVI® results for a dimension "operational VS strategic" leadership (in particular sub dimensions "growth" and "direction") and the DOCS data for the indexes labelled "creating change" and "customer focus". All of these suggestions need to be confirmed by a reliable statistical analysis based on data from more than two organizations, however.
- DOCS data can bring a new light on the LVI® results and, consequently on the process of management competencies development. Illustration and discussion of the links between DOCS and LVI® helped managers from both organizations to understand that a change and development of their management competencies is not their personal business but a need with important strategic consequences for the whole organization. In other words it became obvious that the process of management competencies development should be integrated with the efforts to create an effective and well-balanced organizational culture (and the opposite).

Our research team will start to collect new LVI® and DOCS data in a big company construction company. We also lead negotiations with the management of a big insurance company at the moment. Till December 2014 we plan to analyse approximately 8 more organizations. After analysis of all these data we will be able to give more qualified answers to our research questions and hypothesises.

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Povezovanje razvoja managementa kompetenc z oblikovanjem organizacijske kulture

Članek predstavlja prve rezultate IGA/2012/7 projekta "Raznolikost managementa organizacij in njegov odraz na področju organizacijske kulture". Članek poskuša odgovoriti zlasti na vprašanje, ali obstajajo in kakšni so odnosi med procesom razvoja managementa kompetenc in procesom oblikovanja organizacijske kulture in spremembe. Raziskava temelji na dveh metodah: (1) Indeks raznolikosti vodenja® (LVI®) in Denisonovi tipologiji organizacijske kulture (DOCS). Podatki raziskave so predstavljeni z dvema primeroma. Kvalitativna analiza teh podatkov je privedla do dveh predhodnih ugotovitev: (1) Nekatera pričakovanja raziskave glede na obstoj povezav med raznolikostjo managementa organizacije in organizacijsko kulturo, bodo morda potrjena v prihodnosti; (2) DOCS podatki lahko prikažejo LVI® rezultate in proces razvoja managementa kompetenc v novi luči. Pomagajo direktorjem razumeti, da sprememba in razvoj managementa kompetenc nista njihov osebna stvar, temveč potreba, s pomembnimi strateškimi posledicami za celotno organizacijo. Zanesljivi odgovori na vsa raziskovalna vprašanja in hipoteze pa so pogojeni s statističnimi analizami podatkov, ki so jih zbrali v več organizacijah.

Ključne besede: vodenje, management, raznolikost, organizacijska kultura, razvoj kompetenc

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The Influence of Personality Characteristics on Individual Competencies of Work Group Members: A Cross-cultural Study

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In this article, we investigate how college students and graduates with diverse backgrounds experience working in groups by focusing on their perceptions regarding group work, attribution of leader coaching, and self-perspectives of personality traits. Moreover, this article explores relationships between personality factors (using the Big Five factors) and selected individual competencies from Bartram's Great Eight Competencies (2005). We furthermore review current management research on competency management, personality, and also identify current trends for young professionals who are about to enter the job market. This study was conducted in an experimental setting at a large European business school. Participants were 80 business students from Austria, Turkey, China, and the United States of America with a fairly even gender split who had to work on tasks in homogeneous and heterogeneous settings. We assess participants' ratings following Rammstedt and John's Big Five Inventory (2007) and a modified version of Wageman, Hackman and Lehman's Team Diagnostic Survey (2005) that we enhanced accordingly. Results are analyzed and discussed with relation to global challenges and developments regarding competencies, diversity, and group work.

Key words: competency management , personality factors, individual competencies

1 Introduction

Today, companies face a competitive globally aligned environment with tremendous opportunities and serious challenges at the same time. Thus, organizations have to adapt quickly in order to compete effectively and achieve sustainable growth in multinational industries to remain successful on the market (Knight and Cavusgil, 2004). By focusing on an international perspective, companies desperately need the abilities, skills and expertise of talented employees who represent a major source of their competitive advantage (Hartmann, Feisl and Schober, 2010). Underlying this fact is the rapidly changing business environment and the growing aware of employees with multi-functional fluency, exceptional skills and knowledge, and the ability to operate in different cultures, structures and markets (Mühlbacher, Kodydek, Kovac, Putnová and Novotny, 2012). The globalization has not only changed the challenges for organizations, it has also changed the duties and responsibilities of people. Leaders "must effectively manage through the complex, changing, and often ambiguous environment." (Caligiuri, 2006, 219). At the same time, followers have to work effectively in diverse work groups and teams that consist of people with multiple characteristics and backgrounds (Egan and Bendick Jr., 2008). Therefore, employees have to develop competencies to meet the requirements and needs of their firms (Currie, 2007).

Competency Management

There are several definitions of competencies that vary broadly based to very detailed (Sánchez, 2011). We identify competencies as capabilities that consist of skills, knowledge, abilities, and behavioral repertoires to perform specific jobs

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effectively and to complete tasks successfully (Bücker and Poutsma, 2010). "It is a set of related but different sets of behavior organized around an underlying construct called the 'intent'. The behaviors are alternate manifestations of the intent, as appropriate in various situations and times." (Boyatzis, 2009, 750). This field of research comprises from strategic to organizational to individual competencies (Mühlbacher 2007; Ferencikova, Mühlbacher, Kodydek and Nettekoven, 2012). While some scholars focused on the identification and development of different competencies in the past years, now most researchers have concentrated on investigating, analyzing, and managing one's emotions and influencing others (Kayes, Kayes and Yamazaki, 2005).

Personality

Organizations focus on selecting professionals with diverse backgrounds and a set of competencies to deal with challenges and issues of a competitive environment (Jehn and Bezrukova, 2004). As a result, several scholars have highlighted the relevance of personality measures for personnel selection (Salgado, 2003; Strauss and Connerley, 2003; Boudreau, Boswell and Judge, 2001). Personality can be defined as "an individual's unique variation on the general evolutionary design for human nature, expressed as a developing pattern of dispositional traits, characteristic adaptions, and integrative life stories complexly and differentially situated in culture." (McAdams and Pals, 2006, 212) Personality characteristics enable organizations to predict the level or quality of an individual's competencies and to obtain valuable information about the cognitive social ability of a person (Robertson, Gibbons, Baron, MacIver and Nyfield, 1999). On the basis of decades of factor analytic research (Hogan and Holland, 2003), scholars have identified five key traits regarding personality, commonly known as "Big Five": agreeableness (e.g., tolerant, forgiving, flexible, cooperative), conscientiousness (e.g., organized, thorough, responsible, hardworking), extraversion (e.g., active, sociable, talkative, assertive), openness (e.g., tolerant, imaginative, curious, broad-minded), and neuroticism or emotional stability (e.g., insecure, anxious, depressed, worried) (Strauss and Connerley, 2003; Boudreau, Boswell and Judge, 2001; for general reviews, see Goldberg, 1993). This model describes relevant aspects of personality and it has been used in longitudinal and in different groups across cultures (Mount, Barrick, Scullen and Rounds, 2005). Also, some researchers have pointed out that between self- and others' perspectives of an individual's personality characteristics could lead to different results and interpretations (Srivastava, Guglielmo and Beer, 2010).

Challenges for college students and graduates

What about college students and graduates who are about to enter the job market? They constitute future highly trained and skilled professionals (Hoon and Lim, 2001) and moreover, some of them are the next generation of business leaders and decision-makers (Bageac et al., 2011). Students and graduates have already developed strong work values based on their personal values, experiences and perceptions of what is fundamentally right or wrong (Judge and Bretz Jr., 1992).

These young professionals face two important trends in a globalized world: an increased preference for group work and a growing influence of diversity and diversity management (Sippola and Smale, 2007). One of the most important reasons for groups and teams is the fact that every member possesses certain competencies – skills, and abilities – that influence processes, quality and outcome of groups (Horwitz, 2005). Individuals as group members interact within a group by communicating, influencing, making decisions, cooperating, and competing. All these processes influence group performance and group dynamics (Hopkins and Hopkins, 2002). Groups and teams share responsibilities, communicate and interact regularly among one another and manage their internal and external relationships across organizational boundaries (Cohen and Bailey, 1997). In comparison with individual work, group processes can lead to greater efficiency (e.g., increasing speed in decision-making, effective brainstorming processes, reducing costs) or greater effectiveness (e.g., making better decisions). It usually increases productivity, outcomes and employee satisfaction (Campion, Medsker and Higgs, 1993). To understand possible differences in group composition it is important to define and emphasize the second trend that we identified: "diversity".

Diversity can be illustrated as the differences between individuals that may lead to the interpretation and attribution that certain differences exist (Homan, Greer, Jehn and Koning, 2010). It is an all-inclusive term that incorporates people from many different classifications (Herring, 2009). We underline that, in principle, diversity refers to a number of different dimensions – from task skills to relational skills, and from political preferences to sexual liking (van Knippenberg, De Dreu and Homan, 2004). In any case, diversity is dependent on the context and situation and thus, group and organizational factors have to be considered (Jehn and Bezrukova, 2004). Cultural diversity comprises different backgrounds of members of work groups and teams related to national cultures (Barinaga, 2007). "National culture acts as the frame of reference, which societal members utilize to comprehend and understand in organizations, the environment, and their relationships with one another." (Kreiser, Marino, Dickson and Weaver, 2010, 961). The active management and handling with issues such as cultural differences and values, interpersonal interaction, bridging differences, or the challenges of leader-member exchange is called "diversity management" (DiTomaso and Hooijberg, 1996). "Diverse organizations possess a wider range of knowledge and perspectives and thus are able to make better decisions and exhibit greater creativity, innovation, and performance than homogeneous ones." (Gonzalez, 2010, 198). Organizations focus on implementing diversity management to follow strategic advantages of plurality and different views and opinions (Jehn, Northcraft and Neale, 1999). The heterogeneity of national cultures of team members ultimately brings value to organizations and improves their performance when cultural diversity is properly used (Shachaf, 2008). For this reasons, globally operating firms try to find the best internationally oriented and multiculturally educated staff that generates a substantial output to cope with challenges and complexities of global competitors, different cultures and languages and international business

activities (Beechler and Woodward, 2009). Diversity can have positive and negative effects on group cohesion, creativity, innovation, frequency and quantity of communication, or conflicts within the group (Knight, Pearce, Smith, Olian, Sims, Smith and Flood, 1999).

In this paper, we focus on two different group compositions – homogeneous and heterogeneous work groups. "Groups with all members from the same nationality and ethnic background are referred to herein as culturally homogeneous groups." (Watson, Kumar and Michaelsen, 1993, 593). Otherwise, groups consisting of individuals from two or more nationalities and three or more ethnic backgrounds underline certain heterogeneity and are known as culturally diverse groups or multicultural groups (Stahl, Mäkelä, Zander and Maznevski, 2010). Multicultural work groups are task-oriented groups consisting of individuals of different national cultures (Matveev and Nelson, 2004). "People of different ethnic backgrounds possess different attitudes, values, and norms that reflect their cultural heritages." (Cox, Lobel and McLeod, 1991, 828). Thus, in a culturally diverse team, all team members have to know the cultures with which they interact. They also have to appreciate the personalities, behaviors, and experiences of all team members (Matveev and Nelson, 2004). Hence, we emphasize the importance of intercultural competency as an important part of "global competency" which has been pointed out many times (e.g., Bachmann, 2006; Kayes, Kayes and Yamazaki, 2005).

In summary, young professionals have to take responsibility for difficult (global) tasks and activities, and develop cultural sensitivity for international challenges. Furthermore, they have to work in multicultural work groups or teams, persist in diverse environments and develop their intercultural competencies continuously. Therefore, they have to speak several languages and need to be able to adapt to multicultural challenges appropriately (Welch, Welch, and Piekkari, 2005).

Purpose of our study

In our study, we focused on college students and graduates who are about to enter the job market in the near future. In order to investigate the two identified trends for future professionals, we therefore concentrated empirically on different work groups with participants from Austria, Turkey, China, and the United States of America. We therefore analyzed perceptions of students concerning their group work, their attributions of leader coaching, and their self-perspectives of personality characteristics during a task in an experimental setting.

2 Development of Hypotheses

Many researchers have investigated the relationship between competencies and personality traits over the last years (e.g. Bartram, 2005; Dulewicz and Herbert, 1999; Robertson, Gibbons, Baron, MacIver and Nyfield, 1999). Bartram (2005) illustrated a competency framework that consists of the Great Eight Competencies, 20 competency dimensions and 112 competency component titles (for more details, see Bartram, 2005). The Great Eight Competency structure refers to a wide range of models used by practitioners in competency practice. It is also supported empirically and is similar to common competency clusters in this research field (Bartram, 2005). The eight identifiable categories are "Leading and Deciding", "Supporting and Cooperating", "Interacting and Presenting", "Analyzing and Interpreting", "Creating and Conceptualizing", "Organizing and Executing", "Adapting and Coping" and "Enterprising and Performing". In order to explore relationships between competencies and personality factors of students and graduates through an experiment, we focus on Bartram's suggestion of relationships and therefore concentrate on the competencies "Supporting and Cooperating" and "Organizing and Executing" (Warr, Bartram and Brown, 2005). In our opinion, these competencies seem most relevant regarding our research context. The competency "Supporting and Cooperating" illustrates the support and respect of others, the effective work with individuals and groups, and the strong relation between personal and organizational values (Bartram, 2005). Bartram (2005) predicted a relationship between this competency and agreeableness which constitutes the personality characteristic of being tolerant, caring, and gentle (Strauss and Connerley, 2003; Boudreau, Boswell and Judge, 2001). "Organizing and Executing", on the other hand, represents the planning and working in systematic and organized ways, the following of directions and procedures, the focus on customer satisfaction and the delivery of outstanding quality and standards (Bartram, 2005). Bartram (2005) predicted here a relationship between this competency and conscientiousness which illustrates an individual who is hardworking, thorough, and organized (Strauss and Connerley, 2003; Boudreau, Boswell and Judge, 2001). Furthermore, Hogan and Ones (1997) argued that this personality trait is the major component of integrity. In this paper, we focus on the individual's perspective which refers to the dynamics and processes inside a person. Moreover, it explains why individuals behave in a certain way (Mount, Barrick and Strauss, 1994). Thus, we propose the following hypothesis:

Hypothesis 1a: *Regarding the competency "Supporting and Cooperating", agreeableness will be positively related to compelling direction*.

Hypothesis 1b: *Regarding the competency "Organizing and Executing", conscientiousness will be positively related to leader coaching*.

A certain level of group information process leads to a better understanding of the task setting (Rico, Sánchez-Manzanares, Gil and Gibson, 2008). Compelling direction refers to the direction of a work group and its overall purpose (Hackman and Wageman, 2005). Great group direction is "challenging (which energizes members), clear (which orients them to their main purposes), and consequential (which engages the full range of their talents)." (Wageman, Hackman and Lehman, 2005, 377). An ensured compelling direction energizes and motivates group members. Moreover, goals are opportunities for personal growth (Burke, Sims, Lazzara and Salas, 2007). In addition, group work is generally influenced by leaders who create and manage groups and foster the integration of subordinate action (Zaccaro, Rittman and Marks, 2001). Researchers in this field have explored how leaders help groups through different coaching-related activi-

ties, such as promoting team learning and adaption, managing events that occur in the group context, the role of team leaders in managing team boundaries, or leadership roles shared in teams (Morgeson, DeRue and Karam, 2010). It includes helping group members minimizing motivation and coordination problems, building commitment, avoiding standard routines that could lead to a wrong direction, supporting the group to apply innovative ways to reach their goals. Furthermore, coaching also comprises helping group members to weight certain ideas, and to help them improve their skills (Burke, Sims, Lazzara and Salas, 2007; Hackman and Wageman, 2005). Leader coaching "can directly affect team members' engagement with their task, their ability to work through interpersonal problems that may be impeding process, and the degree to which members accept collective responsibility for performance outcomes." (Wageman, 2001, 561). In any case, whether it is a diverse or a homogeneous work group – working in different group settings is often a challenge for many individuals (Pelled, Eisenhardt and Xin, 1999). Hence, proactive leadership and coaching could affect group processes and outcomes substantially (Wageman, 2001). We therefore hypothesize the following:

Hypothesis 2a: *Participants who rate positively on clarity, challenge, and consequentiality after the first round will not rate their own personality differently after the second round of the experiment than will participants who rate negatively on clarity, challenge, and consequentiality.*

Hypothesis 2b: *Participants who rate positively on leader coaching after the first round will not rate their own personality differently after the second round of the experiment than will participants who rate negatively on clarity, challenge, and consequentiality.*

Scholars have demonstrated that diversity ultimately enables organizations to gain competitive advantage (Richard, Barnett, Dwyer and Chadwick, 2004; Richard, 2000). As mentioned earlier, it mostly extends organizational perspectives, capabilities and offers outstanding opportunities, but also challenges organizations and its members (Harrison and Klein, 2007). Ely and Thomas (2001) illustrated that the wide impact of diversity generally can be found in identity group memberships (e.g., race or sex), organizational group memberships (e.g., hierarchical positions or organizational function), and individual personality (e.g., idiosyncratic attitudes, values, and preferences). An individual's personality consists of certain characteristics, traits, behaviors, and experiences situated in his or her culture (McAdams and Pals, 2006). The influence of national culture and ethnic background on individuals' perceptions, attributions, expectations of group work, tasks, and leadership, and self-perspectives of personality characteristics has been underlined by many researchers (e.g., Zhou and Shi, 2011; Tyran and Gibson, 2008; Hackman and Wageman, 2005). Regarding gender differences across cultures, scholars have also investigated this research field intensively and they have demonstrated different findings due to various influencing factors, such as situational effects and hierarchical position (Brummett, Babyak, Williams, Barefoot, Costa and Siegler, 2006; Furnham, Petrides, Tsaousis, Pappas and Garrod, 2005). Thus, we predict:

Hypothesis 3a: *Austrian male participants will rate their own personality more consistently throughout the experiments than Austrian female participants.*

Hypothesis 3b: *Turkish male participants will rate their own personality more consistently throughout the experiments than Turkish female participants.*

Hypothesis 3c: *Chinese male participants will rate their own personality more consistently throughout the experiments than Chinese female participants.*

Hypothesis 3d: *US-American male participants will rate their own personality more consistently throughout the experiments than US-American female participants.*

Hypothesis 4: *There is a significant difference between Austrian, Turkish, Chinese and US American students regarding the attribution of compelling direction and leader coaching in the experiment.*

3 Methodology

Sample and Procedure

Participants were 80 undergraduate students from four nations (Austria, Turkey, China, and USA) at large European Business School. Eight work groups consisted of 72 participants while eight students were selected as leaders in this experiment (N = 72, 33 male and 39 female; mean age = 22.57 years). All participants were full-time or exchange students at this university at the time of the experiment and could speak English fluently. We only included male leaders to eliminate gender effects.

At the beginning of the study we divided the participating students into eight homogeneous work groups and selected eight leaders for the task that took two rounds. Every participating nation (Austria, Turkey, China, and USA) was represented by two leaders and an identical number of followers for every group. The subordinates had to work in a homogeneous and heterogeneous work group. In order to prevent learning effects, we decided to compose groups differently (e.g., in the first round "American leader A" led a homogeneous team while "American leader B" led a multicultural team). In the second round the leaders remained stable but the followers had to move to a predefined specified group. The experiments took place in different rooms and were observed by experienced instructors. The task was handed over by these people. The assignment was to design and build a tower made of cardboard and predefined tools within 30 minutes. The leadership style and the working process were not specified by the instructors. After 30 minutes the leaders of the work group handed over the output of the group to the observer. The followers adjourned themselves to another specified room and worked on the task within another group. After every round the participants were asked to complete a questionnaire asking them to rank their self-perspectives of personality characteristics, their own personal view of their group performance, the task, and the leader coaching.

Measures

We administered questionnaires in English and pilot tested the survey instrument that was developed from differ-

Table 1: Descriptive statistics and correlations

	M	SD	Agreeableness	Conscientiousness	Compelling Direction
Agreeableness	3,42	0,65	1		
Conscientiousness	3,32	0,72	0.061		
Compelling Direction	3,05	0,5	0.158	-0.045	
Leader Coaching	2,95	0,78	-0.008	0.108	0.045

ent sources. It consisted of 30 items, some demographic and screening items (e.g.; major field of study). We employed the Big Five Inventory (BFI-10; Rammstedt and John, 2007; 10 items). This extremely short personality instrument enables surveys within a short period of time. Many short versions of the Big Five have indicated respectable psychometric characteristics, and underline the importance of short instruments (Rammstedt and John, 2007; Gosling, Rentfrow and Swann Jr., 2003). Furthermore, we used two scales from the Team Diagnostic Survey – an instrument intended for the diagnosis of the strengths and weaknesses of groups and for research on group behavior and performance (TDS; Wageman, Hackman and Lehman, 2005; 20 items). The TDS has been used in numerous studies and was shown to be an ideal instrument to assess group or team members' perceptions of the group's socio-structural features, such as compelling direction or enabling structure (Higgins, Weiner and Young, 2012; Hackman and Lehman, 2005). We adapted the TDS for our experiment and research context.

Big Five Personality Traits. The Big Five traits were measured with the short form of the Big Five Inventory (BFI-10; Rammstedt and John, 2007). The BFI-10 generally concentrates on the personal assessments and ratings of the participants to explore possible differences of the multicultural group members in an intercultural setting. The BFI-10 measures every dimension (Extraversion, Agreeableness, Conscientiousness, Emotional Stability or Neuroticism, and Openness) with a pair of items (one is reverse coded). For example, extraversion (1, 6) is measured with the items "I see myself as someone who is outgoing, sociable" and "I see myself as someone who is reserved" (reverse coded). Ratings were made on a five-point scale ranging from 1 (disagree strongly) to 5 (agree strongly).

Compelling Direction. In this study, we measured "clarity", "challenge" and "consequentiality" using the Team Diagnostic six-item Scale "compelling direction" (Wageman, Hackman and Lehman, 2005). Thereby, we adapted this scale for our research context. A sample item from this scale was: "There is great uncertainty and ambiguity about what this work group is supposed to accomplish". Items were rated on a five-point scale, ranging from "disagree strongly" (response score = 1) to "agree strongly" (response score = 5).

Leader Coaching. We also measured direct interactions between followers and leaders that usually intend to shape group processes to produce good performance (Wageman, 2001) by using the Team Diagnostic 14-item Scale "leader coaching" (Wageman, Hackman and Lehman, 2005). We investigated "task focused coaching", "operant coaching", "interpersonal coaching" and "unhelpful directives". Thereby, group members rated their perceptions of their leaders' coaching on a five-point scale, ranging again from 1 (disagree strongly) to 5 (agree strongly). A Sample item was: "The leader helps the work group sustain the motivation of all members".

4 Results

Table 1 shows the means, standard deviations, and correlations of the study variables. This correlation was used to answer our first hypotheses: "*Regarding the competency 'Supporting and Cooperating', agreeableness will be positively related to compelling direction*" (H1a) and

"*Regarding the competency 'Organizing and Executing', conscientiousness will be positively related to leader coaching*" (H1b). Results suggested support for hypothesis 1a (r = 0.158) and hypothesis 1b (r = 0.108), and therefore, both hypothesis were confirmed.

Moreover, we hypothesized that participants who rate positively on clarity, challenge, and consequentiality after the first round of the experiment will not rate their own personality differently after the second round compared to students who rate negatively on clarity, challenge, and consequentiality (H2a). This hypothesis showed marginal support but within an acceptable region within the 90-percent confidence interval (t = -1.7113, df = 67.814, p = 0.09159). Hypothesis 2b predicted that participants who rate positively on leader coaching after the first round of the experiment will not rate their own personality differently after the second round of the experiment compared to participants who rate negatively on items of compelling direction. We could not find an empirical evidence for this hypothesis and hence, hypothesis 2b was not supported (t = 1.0516, df = 68.539, p = 0.2967).

We then ran t-Tests to better understand differences among the participants of the experiment regarding gender and culture. As pointed out earlier, participants came from Austria, Turkey, China, and the US. Hypotheses 3a-d predicted that male participants will rate their own personality more consistently throughout the tasks than female students. However, findings showed no support for our hypotheses (Austrian students: p = 0.853; Turkish students: p = 0.578; Chinese students: p = 0.615; US American students = 0.246). For this reason, hypotheses 3a-d were rejected.

In our final prediction, we suggested that there is a significant difference between Austrian, Turkish, Chinese and US American participants regarding the attribution of compelling direction and leader coaching. We therefore ran an analysis of

Table 2: Results of ANOVA

	M AUT	SD AUT	M TUR	SD TUR	M CHN	SD CHN	M USA	SD USA	p	
COMPELLING DIRECTION										
Clarity	3,21	0,98	3,50	0,86	2,97	0,63	2,94	0,66	0,030	*
Challenge	2,74	0,60	3,17	0,61	3,10	0,58	3,00	0,70	0,130	
Consequentiality	2,85	0,81	3,12	0,82	3,14	0,59	2,88	0,45	0,852	
LEADER COACHING										
Task Focused Coaching	2,79	0,91	3,35	0,97	2,98	0,74	3,49	0,76	0,009	**
Operant Coaching	2,47	0,79	3,04	0,80	2,76	0,67	2,87	0,66	0,103	
Interpersonal Coaching	2,64	0,95	3,03	1,03	2,67	0,79	3,08	0,94	0,169	
Unhelpful Directives	2,57	1,04	3,13	1,00	2,69	0,75	2,79	0,77	0,766	
Note: ****p < 0.001, **p < 0.01, *p < 0.05*										

variance (ANOVA) to examine country differences on scores for the scales compelling direction and leader coaching.

The ANOVA showed that there was a significant difference between the four groups regarding Clarity ($p = 0.030$) and Task Focused Coaching ($p = 0.009$). Turkish students denoted the highest evaluations in terms of clarity (arithmetic mean = 3.50) whereas US participants indicated the lowest assessments (arithmetic mean = 2.94). Regarding Task Focused Coaching, US American students indicated the highest ratings (arithmetic mean = 3.49) whereas Austrian participants showed the lowest assessments (arithmetic mean = 2.79). Thus, hypothesis 4 was partly supported.

5 Discussion and Conclusion

In this study, we sought to examine the influence of personality characteristics (agreeableness and conscientiousness) on individual competencies ("Supporting and Cooperating" and "Organizing and Executing") of students working in groups in an experiment. Moreover, we investigated if gender and cultural differences existed. Thus, we could identify positive relations between the personality trait "Agreeableness" and the direction of a work group and its overall purpose ("compelling direction") and also between "Conscientiousness" and coaching-related leader activities ("leader coaching") (H1a and H1b). We gained empirical evidence that students with personal characteristics such as being tolerant, caring, and gentle, were motivated to achieve their goals (agreeableness), had a clear vision what has to be done, focused on the main purpose, and used their abilities and skills to fulfill the task successfully (Strauss and Connerley, 2003; Boudreau, Boswell and Judge, 2001). They developed competencies that can be related to "Supporting and Cooperating" (Bartram, 2005). These students respected their group members and were able to motivate others to participate actively and effectively throughout the tasks (Burke, Sims, Lazzara and Salas, 2007; Hackman and Wageman, 2005). Our findings also showed that participants with personal characteristics like hardworking, accepting responsibilities, and being organized (Strauss and Connerley, 2003; Boudreau, Boswell and Judge, 2001), had a clear plan to fulfill the task, and most notably focused on following their leaders' directions and procedures to achieve high levels of performance and to attain goals (Burke, Sims, Lazzara and Salas, 2007; Hackman and Wageman, 2005). We emphasize that they developed competencies than can be related to "Organizing and Executing" (Bartram, 2005). Furthermore, they also tried to deliver excellent quality of work and to behave with integrity (Hogan and Ones, 1997).

Hypothesis 2a predicted that participants who rated positively on compelling direction after the first round of the experiment would not rate their own personality differently after the second round compared to students who rated negatively on clarity, challenge, and consequentiality. We found marginal support for this hypothesis. No empirical evidence could be found for hypothesis 2b that predicted that students who rated positively on leader coaching after the first round of the experiment would not rate their own personality differently after the second round of the experiment. We argue that many participants did not have any intercultural experience, did not perform under pressure or were not led by a leader within a certain time period prior to the experiment. Many of them were obviously overwhelmed by their own impressions and experiences and therefore, rated their own personality differently after the two rounds (Moberg, 2006; Osland and Bird, 2000). Examinations of gender differences within national cultures regarding self-perspectives of personality characteristics (H3a-d) did not show significant differences between male and female participants.

We then investigated cross-cultural differences of perceptions and evaluations regarding compelling direction and leader coaching across the participants. The results indicated significant disparities of clarity and Task Focused Coaching. Although all groups had to work on identical tasks under the same conditions, we identified significant differences regarding the clarity of direction. Hackman and Wageman (2005) pointed out that in work groups, the clarity is sometimes unclear or vague. On the other hand, directions and statements can also be too clear. Findings also illustrated significant differences between the groups regarding Task Focused

Coaching. This proactive coaching refers to leadership activities that support group effort, performance strategies, the use of skills and ideas, respectively (Wageman, Hackman and Lehman, 2005). Individuals generally develop a certain leadership style that is influenced by personal characteristics, experiences, training, situational factors, and ingrained behavior (Kolb and Kolb, 2005; Conger, 2004). In our study, we only included full-time students from four different countries with little or no work experience. However, even little practical experience offers valuable perceptions and ideas about work processes, leadership, and group work. Regarding our cross-cultural experiment, we also emphasize that some participants had more knowledge about cultural differences and were more satisfied with the outcome, the direction, the group performance, and their leaders in this experiment than others.

In this paper, we determined two challenges for college students and graduates: an increased preference for group work and a growing influence of diversity and diversity management. Young people therefore need to gain work experience through internships and practical training. Furthermore, as future professionals or even business leaders and decision-makers, they need to develop specific competencies to be prepared for future challenges. Hence, they need to work on their so-called "career competencies" to get a fulfilling job and, moreover, to build a successful career in a globalized, competitive world (Vance, 2005). Career competencies are a higher-order learning process that includes capacity reflection, motivation reflection, work exploration, career directedness, and networking (Kuijpers, Meijers and Gundy, 2011). At the same time, they also need to concentrate on global competencies (Bücker and Poutsma, 2010). These training and development interventions can be divided into three broad categories: didactic learning programs, experiential opportunities, and intensive experiences (Caligiuri, 2006). Students and graduates should therefore focus on these strategies to obtain relevant competencies, skills, and awareness in order to overcome complex global assignments and challenges (Harvey and Novicevic, 2002). Finally, our findings could provide a valuable reference for academics to do further investigations on relevant issues.

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Vpliv osebnih značilnosti na posameznikove kompetence kot člana delovne skupine: medkulturna študija

Članek govori o tem, kako študenti in diplomanti iz različnih socialnih okolij doživljajo delo v skupini, pri čemer smo se osredotočili na njihovo dojemanje skupinskega dela, voditeljskih lastnosti in osebnostnih značilnosti. Poleg tega članek raziskuje odnos med osebnostnimi dejavniki (z uporabo velikih petih faktorjev osebnosti) in posameznimi kompetencami,

ki smo jih izbrali med Bartramovimi osmimi velikimi kompetencami (2005). Obenem smo pregledali trenutne raziskave na področju managemeneta kompetenc in osebnosti ter identificirali trenutne trende za mlade strokovnjake, ki bodo kmalu vstopili na trg dela. Raziskavo smo opravili v eksperimentalnem okolju v večji evropski poslovni šoli. Udeležilo se je je 80 študentov iz Avstrije, Turčije, Kitajske in Združenih držav Amerike, ki so bili relativno enakovredno zastopani po spolu in ki so morali opravljati naloge v homogenem in heterogenem okolju. Udeležence raziskave smo ocenili na podlagi vprašalnika Rammstedtove in Johna, imenovanega Seznam velikih pet (Big Five Inventory; 2007) in spremenjene različice inštrumenta Team Diagnostic Survey Wagemanove, Hackmana in Lehmanove, ki smo ga temu primerno prilagodili. Rezultate smo analizirali in o njih razpravljali v odnosu do globalnih izzivov in razvoja na področju kompetenc, raznolikosti in skupinskega dela.

Ključne besede: management kompetenc, osebnostni dejavniki, individualne komptence;

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Eliminating Knowledge Bottlenecks Using Fuzzy Logic

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In the formation of new processes, innovations generated by people possessing the right knowledge and talent play a crucial role. Our starting point was the fact that every new change in processes can alter the knowledge structure of a work position or work role. This means that a person can become a knowledge bottleneck in the process. If this person is found on a critical path, the process cannot produce the output in a desired form, extent or quality, unless the bottleneck is removed. For this reason, we developed a decision model founded on fuzzy logic. The result of the fuzzy model is knowledge estimation based on deviation between the required and actual knowledge. For faster decision making, we made a presentation of allocated people on desired roles using the heat map technique. Therefore, the employers make better decisions on actual knowledge allocation, acquiring missing knowledge, or defining knowledge required for the future, which makes them more competitive.

Keywords: knowledge allocation, knowledge management, business processes, business intelligence, fuzzy logic

1 Introduction

In an era of human potential, there is a struggle for the best people to know that they are true value creators (Guillory, 2009). When business success or failure depends on talented people (Michaels et al., 2001), it is crucial for organisations to achieve their goals and realise that the most fundamental problem is uncertainty. This results in a need for more rapid responses to changes in competitive environments, since the nature of work across all industries has become increasingly project-oriented and less routine (Wang and Salunga, 2008). Employers respond to customer demands, competitor innovations, regulatory changes and outside factors with changes in business processes that must be interconnected. It is also essential to change strategic and operational goals so they can successfully meet the business measurements (Ballard et al., 2005). The developments driving these responses are difficult to predict, and mistakes in responding are costly. There are inherent mismatches of employees and skills (not enough talent to meet business demands, or too much, leading to layoffs or a poor fit between individual attributes and requirements); additionally, there are costs of losing investments in talent through the failure to retain employees (Cappelli, 2009). Discussions regarding human capital are extremely valuable whenever strategic personnel planning and development take centre stage in times of great uncertainty. Both the current and the future requirements in human capital have to become the focal point of the analysis and must be seen as a strategic competitive advantage for the company (McCall, 1998; Nahapiet and Sumantra, 1998).

The most influential internal driver of change is process change (Mühlbacher et al., 2011). Every new change in business processes can change the knowledge structure of a work position, because knowledge requirements aggregate on work positions (Meglič et al., 2009). Therefore, a current employee is not sufficiently educated, with regards to process and knowledge requirements (Roblek et al., 2011). This is a so-called knowledge gap (Kern et al., 2005), which can be often seen in engineering-to-order (ETO) production processes, in which a set of unique products is produced for the first and probably the only time (Roblek and Zajec, 2012).

When it is desirable to allocate a person with the right knowledge to a work position, there is a need for a number of wide educated employees (generalists), who are expensive from the investment point of view. As a result, to be competitive businesses have few widely educated employees and many cheaper specialists. From the knowledge point of view, widely educated employees are rarely bottlenecks; from the time availability perspective they always are (Roblek et al., 2011). If these employees (bot-

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tlenecks) are on a critical path of a process, that process cannot yield the expected output, quantity or quality (as if there had been no bottlenecks). Process execution normally stops when someone has to retrieve knowledge that has not been provisioned for them to use. When this occurs in a customer-facing process, the cost to execute the process skyrockets (Russell Records, 2005).

Businesses relying on the knowledge of their employees are not most concerned with the financial distribution amongst a set of (R&D) opportunities, but rather with the allocation of human capital. However, available expertise determines whether a project, process or innovation may turn into a success or if it is doomed to fail because of a lack of critical intellectual capabilities (Gutjahr et al., 2008). Hitt et al. (2001) and Zupan and Kaše (2006) agree that intangible resources rather than tangible ones are vital for achieving competitive advantages. Therefore, investments in intellectual capital are critical, so managers are forced to find an appropriate balance between their investments in tangible and intangible resources (Čater and Čater, 2009). Škerlavaj and Dimovski (2006) argued that higher-level organisational learning (intangible resources) has a strong positive impact on both return on assets and value added per employee. It even has a stronger positive influence on better relationships with customers, suppliers and the lower net turnover of employees.

However, there are several ways to allocate the right person with the right knowledge to the right role or work position. In the search for an optimal solution, we want to review classic allocation models, such as linear programming (Gärtner, 2006), and heuristic solution algorithms, such as Ant Colony Optimization (Dorigo and Stützle, 2004) and Genetic Algorithm (Turban et al., 2007). Linear programming is used in the PKA model (Roblek et al., 2011), in which the knowledge structure of a work position is compared with the knowledge structure of all employees. In that case, the model is used to measure how large the knowledge gap is. The gap can be determined with an optimal function, which is based on minimum shortage (deficit) or maximum excess (surplus) of knowledge. If the difference is too high (knowledge deficit), then we presume that the work is done less effectively. In that case, businesses train their employees, and if they do not have enough time they have to find the right person outside of the business. For those cases in which an exact solution by means of linear programming is no longer possible, either on account of nonlinearity or because of an excessively large number of input variables, heuristic solution algorithms should be used. The Ant Colony Optimization algorithm uses an incremental solution construction procedure so that the generation of unfeasible solutions can be avoided during the construction process. The genetic algorithm constructs a complete solution and then uses a repair function if the constructed solution is not feasible, which may be extremely time-consuming in the presence of restrictive constraints. The genetic algorithm seems to be slightly superior, except in those cases where the solutions space is highly constrained, in which case the Ant Colony Optimization yielded better results (Gutjahr et al., 2008). Regardless, we must be aware of unsure and partial information that is inherently human in nature (knowledge) and can cause bias in the final estimation. When we are dealing with knowledge-based systems, the classical set becomes inflexible in terms of real world problems (Virant, 2003). The fuzzy set theory can be best used in such cases, because it offers a paradigm of working with the graduation, uncertainty and ambiguity described by linguistic expressions when sharply defined classification criteria could not be created. It supports overlapping boundaries between sets and permits the gradation of the membership of the element in a set. This gradation is described by a membership function valued in the interval [0, 1]. The main advantage of a fuzzy classification compared to a crisp one is that an element is not limited to a single class but can be assigned to several classes (Hudec and Vujošević, 2010). For that reason, we developed a decision model based on fuzzy logic with which we can allocate people, according to their knowledge availability.

2 Method

The research was based on a model (Kern et al., 2005) in which business processes and competence profiles of employees were combined. After a literature review of this field, we decided to use the term 'knowledge'; unlike other terms (e.g. competence, talent etc.) it had the clearest definition. The model shows how to define the required knowledge of business processes and how to assess actual knowledge (360-degree method). This data can be used for allocating employees to work positions, but it is limited to certain values whereby the slightest difference means that the employee is no longer suitable for a work position.

This problem can be solved with fuzzy logic, with which we can define membership functions. These can help us clearly see how each knowledge value is mapped to a membership value (degree of membership). We have to be aware of knowledge estimation subjectivity, which cause deviations right at the input of any system.

Our model will give the estimation of employee suitability to each role according to his/her knowledge. It is based on following steps:

- Defining required knowledge from selected process;
- Defining actual knowledge from 360-degree method;
- Setting allocation criteria;
- Knowledge allocation using fuzzy logic.

2.1 Defining required knowledge definitions

For a demonstration of our model, we wanted to allocate five employees to nine roles according to their knowledge. Our starting point was a process with five activities and with one AND operator (Figure 1), modelled in Aris Business Designer 7.1.

The required knowledge definitions were derived from process activities. At that point, the company experts helped us define which knowledge was essential to achieve the best performance in a specific process activity and what

strength it must be. That strength was defined on a scale from 1 to 5, where:

- 1 = very low important knowledge,
- 2 = low important knowledge,
- 3 = medium important knowledge,
- 4 = very important knowledge,
- 5 = most important (key) knowledge.

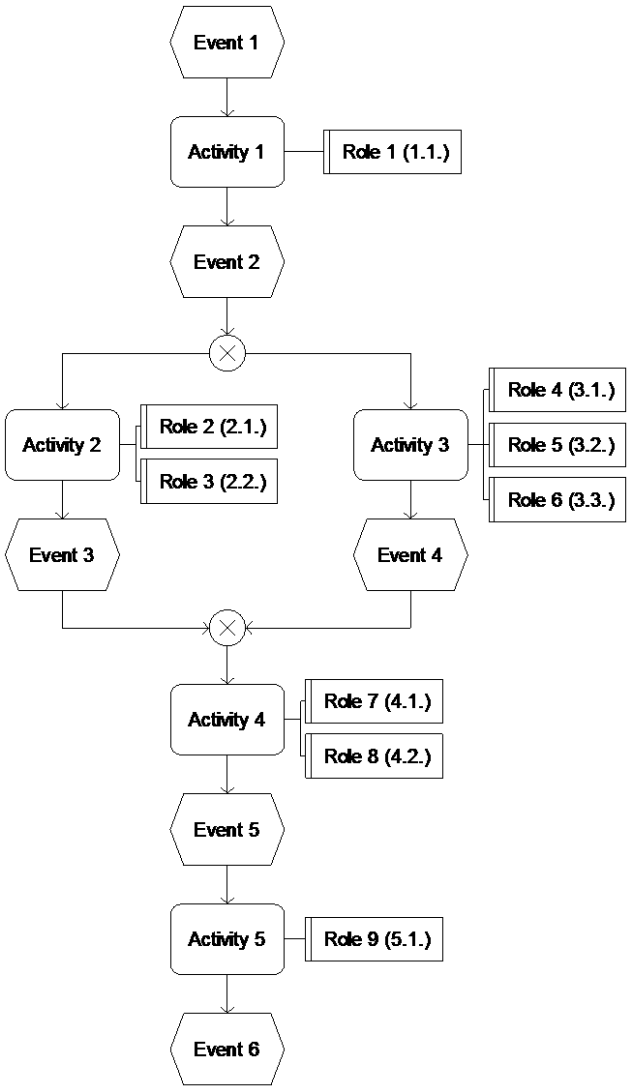

Figure 1: The starting process

If the knowledge was not needed for a specific activity, we marked this with 0.

2.2 Defining actual knowledge definitions

After defining required knowledge definitions for specific activities and their strengths, we assessed five employees using the 360-degree method (Maylett, 2009).

Because there could be at least one role on one activity, we marked each role with two numbers (see Figure 1). The first number shows the connection between activity and role, while the second number indicates the importance of the role (e.g. '1' represents the highest importance for activity execution). An activity without the role with a last number of '1' cannot be executed. In our case, we had five activities and nine roles:

1 Activity #1
- 1.1 Role 1

2 Activity #2
- 2.1 Role 2
- 2.2 Role 3

3 Activity #3
- 3.1 Role 4
- 3.2 Role 5
- 3.3 Role 6

4 Activity #4
- 4.1 Role 7
- 4.2 Role 8

5 Activity #5
- 5.1 Role 9

Because of growing complexity in modelling the fuzzy decision model, we decided to take the five most important types of knowledge for each role. The way of defining this knowledge is not part of this research. The knowledge definitions were specified according to chosen role, since there were no extended specifications on which role is executing which activity.

We measured the difference between required knowledge of a specific role and the actual knowledge of each employee where '0' means no gap between required and actual knowledge. In that case, we have the most suitable person for our role. If the employee received number '-4', this means that he/she does not have knowledge according to the required knowledge definition (underqualified). In contrast, a person with number '4' shows overqualification and this state is also undesirable because this knowledge is more beneficial when used for another activity inside the process, or opportunity could be found somewhere else outside of our process. Therefore, the employee with a number '-4' or '4' is unsuitable for chosen role.

2.3 Setting allocation criteria

To determine which employee had the best knowledge distributions for a required role, we had to define:

- **input variables,**
- **output variables**, and
- **base mechanism**, which translates input variables to output variables using 'if-then' rules. These rules are valued parallelly, i.e. the sequence is not important. They use variables and adjectives for those variables.

Our final estimation of an employee's knowledge is based on processing input data (differences between required knowledge of a specific role and actual knowledge of each employee). We had 5 input variables (top 5 knowledge) which were defined as [-4, 4]. If we had required knowledge marked with a strength of '5' and actual knowledge with a strength of '1', then we marked the difference

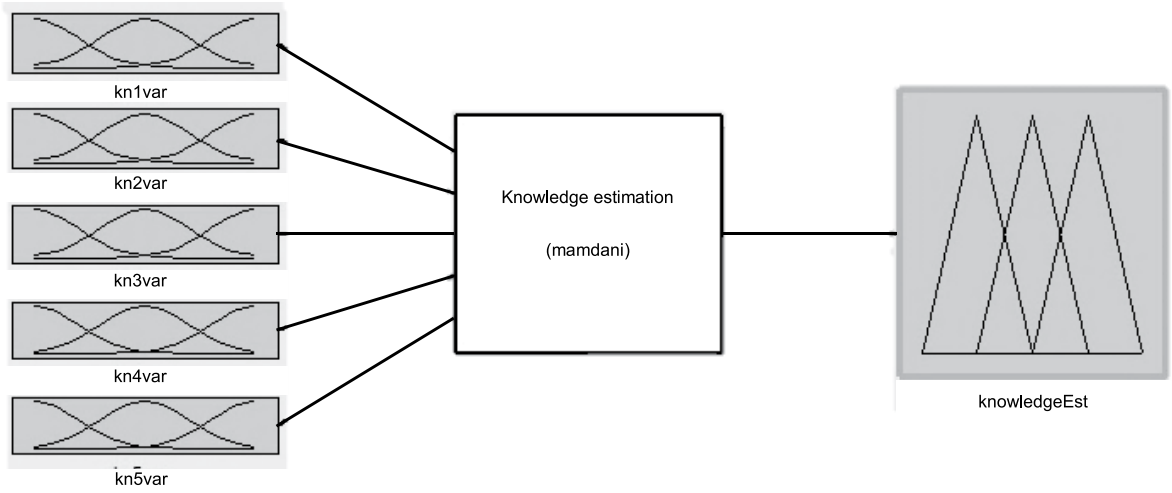

Figure 2 shows our base model structure

with '-4' and vice versa. Required knowledge marked with '0' was not taken into consideration because we selected the top five types of knowledge.

We then defined membership functions for input and output variables. We chose a Gaussian membership function because of its softness (Schmid, 2005) and the suitability of nonlinear systems (Mitaim and Kosko, 2001). In our opinion, this is the best choice when operating with knowledge. However, when assessing employees using the 360-degree method deviations are encountered due to different perceptions of the assessors. The usage of fuzzy logic should eliminate this bias and the employee can occupy one or more membership functions with different degree.

For every **input variable**, we set membership functions with linguistic variables according to knowledge differences. The linguistic variables were:

- *maximal negative difference (max_neg_diff)* with parameters [0.8494, -4][1];
- *negative difference (neg_ diff)* with parameters [0.8494, -2];
- *no difference (no_ diff)* with parameters [0.8494, 0];
- *positive difference (poz_ diff)* with parameters [0.8494, 2];
- *maximal positive difference (max_poz_diff)* with parameters [0.8494, 4].

The **output variable** 'knowledge evaluation' was defined on [-1, 1] and had 5 linguistic variables:

- *underqualified* with parameters [0.21, -1];
- *partly qualified* with parameters [0.21, -0.5];
- *qualified* with parameters [0.21, 0];
- *partly overqualified* with parameters [0.21, 0.5];
- *overqualified* with parameters [0.21, 1].

After the input variables and output variables were defined, we created 'if-then' rules with the use of AND/OR operators. When we use an AND operator, the system takes the minimum of the stated values, and when we use OR operator the system takes maximum. Although determining these rules is intuitive, it is important to include all cases in these rules. The rules for knowledge estimation are the following:

1. IF (kn1diff = max_neg_diff) OR (kn2diff = max_neg_diff) OR (kn3diff = max_neg_diff) OR (kn4diff = max_neg_diff) OR (kn5diff = max_neg_diff) THEN (knowledge_evaluation = underqualified)
2. IF (kn1diff = no_diff) AND (kn2diff = no_diff) AND (kn3diff = no_diff) AND (kn4diff = no_diff) AND (kn5diff = no_diff) THEN (knowledge_evaluation = qualified)
3. IF (kn1diff = pos_diff) AND (kn2diff = pos_diff) AND (kn3diff = pos_diff) AND (kn4diff = pos_diff) AND (kn5diff = pos_diff) THEN (knowledge_evaluation = partly_qualified)
4. IF (kn1diff = neg_diff) AND (kn2diff = neg_diff) AND (kn3diff = neg_diff) AND (kn4diff = neg_diff) AND (kn5diff = neg_diff) THEN (knowledge_evaluation = partly_qualified)
5. IF (kn1diff = max_pos_diff) OR (kn2diff = max_pos_diff) OR (kn3diff = max_pos_diff) OR (kn4diff = max_pos_diff) OR (kn5diff = max_pos_diff) THEN (knowledge_evaluation = overqualified)

The next step is processing the 'if-then' rules within the fuzzy inference system (FIS) from MATLAB software for the calculation of an optimal solution. We chose a Mamdani inference system in which an aggregation method (maximum) and defuzzification method (centroid calculation) were selected. Therefore, the output of the Mamdani inference system is a fuzzy set, so a defuzzification method of the output fuzzy set is required to extract a crisp value that best represents an obtained fuzzy set.

1 The first number is standard deviation while the second number shows arithmetic mean.

Table 1: Knowledge estimation by person

		Knowledge estimation by person				
Activity by role	**Role**	**1**	**2**	**3**	**4**	**5**
1.1.	Role 1	-0.0525	-0.0526	-0.771	-0.771	-0.771
2.1.	Role 2	-0.771	-0.771	-9.50E-18	-0.771	-0.771
2.2.	Role 3	-0.0525	-0.217	-0.0526	-0.771	-0.771
3.1.	Role 4	-0.771	-9.50E-18	-0.771	-0.771	-0.771
3.2.	Role 5	1.15E-04	1.15E-04	-0.217	-0.771	-0.771
3.3.	Role 6	-0.0525	-9.50E-18	-0.217	-0.771	-0.771
4.1.	Role 7	-0.656	-0.656	-0.828	0.0526	-0.828
4.2.	Role 8	0.771	0.771	0.712	0.712	0.771
5.1.	Role 9	-0.656	-0.656	-0.828	-0.771	-0.0525

2.4 Knowledge allocation using fuzzy logic (results)

With the fuzzy reasoning, we compared every person to a role in a particular activity. In Table 1, we show results where we can see which person is the most suitable for each role.

When we have a small number of knowledge and roles (variables), we can quickly determine what is an optimal solution concerning knowledge and role requirements. In that case, the results can be seen in MATLAB software, as the knowledge of employees is defined by the degree of membership functions. In other cases, when we have to assess a large number of employees, activities and roles, there can be a problem with the visibility of results. Therefore, the employers must use business intelligence to clearly see all the knowledge bottlenecks in a usable and understandable form. We would like to examine a heat map technique that offers the possibility of filtering employees according to their knowledge in descending or ascending

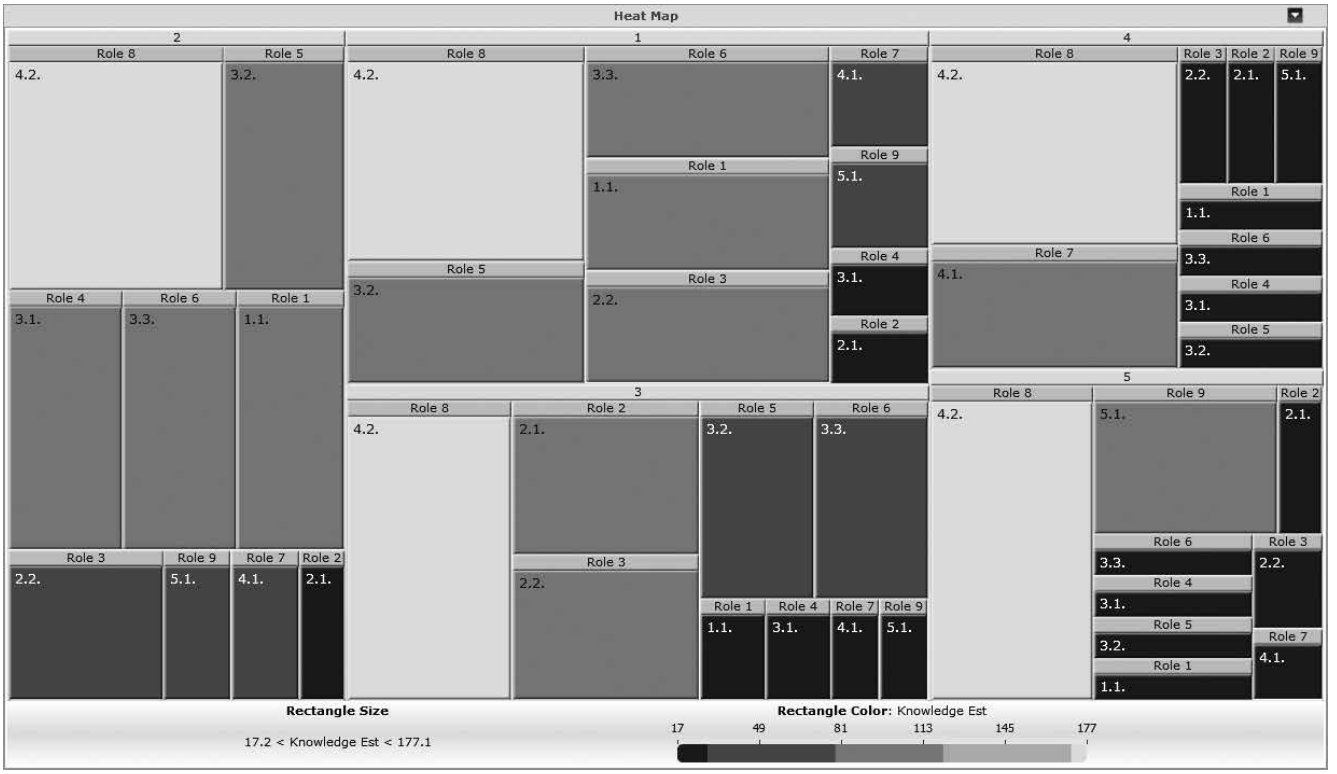

Figure 3: Role classification by person and activity according to knowledge estimation

order. It gives a good overview with a colour scale and helps us recognise the degree of knowledge redundancy.

Although the optimal solution can be seen in the Table 1, it may require too much time for the employer to make a final decision. The problem escalates with the number of employees, activities and roles. Therefore, we provided results in a usable and understandable form by using business intelligence. We decided to use MicroStrategy Cloud Express because of its highly interactive dashboard, with which we can easily recognise trends, deviations and undiscovered insights that would otherwise remain buried in the data.

Employees and roles were sorted by knowledge estimation in descending order (Figure 3). For faster decision making, the rectangle colours were also based on knowledge estimation values. However, the colour scale was generated automatically when importing data and customised according to our qualification values (underqualified, partly qualified, qualified, party over qualified, and overqualified, respectively).

From the heat map, we can clearly and easily see that the most educated employee was Person 2 (largest rectangle size) and the least educated was Person 5 (smallest rectangle size). Therefore, we could also see knowledge redundancy for Role 8, for which every employee was overqualified. The lowest redundancy was observed for those roles where we had only one person with the right knowledge.

As already mentioned, we started with the process in which two activities were running in parallel, which could lead to a capacity problem. Our final decision can be represented by activities:

- **Activity #1**
  - **Person 1** can occupy Role 1.1.
- **Activity #2**
  - **Person 3** can occupy Role 2.1.
  - **Person 1** can occupy Role 2.2.
- **Activity #3**
  - **Person 2** can occupy Role 3.1.
  - The most suitable person for Role 3.2. is Person 1, but he/she could not be allocated because he/she is working in parallel on other activity (see Activity #2). The second option would be Person 2 but could also not be allocated because he/she is allocated for Role 3.1., which plays a crucial role in this activity. The third option is Person 3 who also works in parallel on another activity (see Activity #2). According to these facts, the manager must use his knowledge and decide on his own. He could use scheduling or (in the worst case scenario) find a new employee or outsource the work.
- **Activity #4**
  - **Person 4** can occupy Role 4.1.
  - Role 4.2. can be occupied by any person in our selection, but we had chosen that person who was the least overqualified. We could choose Person 3 or 4, but we decided for **Person 3** because Person 4 is already allocated to this activity (Role 4.1.).
- **Activity #5**
  - Only **Person 5** can occupy Role 5.1.

3 Discussion and conclusions

The developed model for knowledge allocation on roles is based on the employee‘s strengths. It was developed using the FIS tool in MATLAB software and tested on a real process. With the use of this model, businesses can benefit significantly and thereby greatly increase their competitiveness. The use of a fuzzy decision model gives employers a complete view of employees‘ knowledge and knowledge bottlenecks. Therefore, it supports better use of employees’ full potential.

The advantage of this model is allocating employees to more than one role whereby we can compare employees with each other according to their knowledge. This leads to better business results that are achieved by better processes (higher output) and productive employees using their strengths and knowledge. The model can be tested on the PKA model (Roblek et al., 2011) in which linear programming is used. In this case, there is a crisp classification in which two employees with remarkably similar values, near the boundary value, may be classified into different classes, which causes a greater difference between the required knowledge and the obtained resources. When employers accept less accurate systems and want to include approximate reasoning, fuzzy logic is the right choice (Kuncheva, 2000).

From the perspective of the end user, the disadvantage can be seen in the complexity of fuzzy system software products (e.g. MATLAB software). When we have a small number of types of required knowledge and roles (variables), we can quickly see what an optimal solution concerning knowledge and role requirements is. In that case, the results can be seen in MATLAB software whereby the knowledge of employee is defined by degrees of membership functions. In other cases, when we have to assess a large number of employees, activities and roles, there can be a problem with visibility of results. Therefore, the employers must use business intelligence to clearly see all knowledge bottlenecks in a usable and understandable form. We review a Microstrategy Cloud Express heat map technique that offers the possibility of filtering employees according to their knowledge in descending or ascending order. It gives a good overview with colour scale and aids in recognising the degree of knowledge redundancy. However, the decision maker may also need an operational research expert to set appropriate functions for aggregation, implication, aggregation and defuzzification in FIS. The FIS tools usually offer a variety of functions, so a fuzzy model may become unreliable if inappropriate functions are chosen (Hudec and Vujošević, 2010).

The fuzzy decision model makes a hard decision making easier but cannot replace the autonomy and final judgement of the decision maker. However, in comparison

with crisp approaches, it can allocate employees' knowledge more precisely to each role according to knowledge requirements.

The fuzzy model can be further developed by adding more input variables that will bring higher accuracy to the final result. We could use knowledge management systems in which intelligent agents help define employees' knowledge profiles and compare them with process requirements. In this way, we could obtain a wider set of needed and alternative types of knowledge. Based on those data, the employer can decide whether to train employees, compensate them, outsource the work or search for new human resources.

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Odprava znanjskih ozkih grl z uporabo mehke logike

Odločilen pomen pri oblikovanju novih procesov predstavljajo tudi inovacije, ki jih generirajo osebe s pravim znanjem in talentom. Izhajali smo iz dejstva, da vsaka nova sprememba v procesih lahko spremeni strukturo znanja določenega delovnega mesta ali delovne vloge. To pomeni, da oseba, ki zaseda vlogo, lahko postane t. i. znanjsko ozko grlo v procesu. Če se oseba nahaja na časovno kritični poti procesa, potem proces ne daje izhoda v želeni obliki, obsegu ali kvaliteti, kolikor bi ga lahko, če bi znanjska ozka grla razbremenili. V ta namen smo razvili odločitveni model, ki temelji na uporabi mehke logike. Rezultat modela je ocena znanja, ki temelji na odstopanjih med zahtevanim in dejanskim znanjem. Za hitrejše sprejemanje odločitev o razporejanju oseb na vloge glede na njihovo znanje smo uporabili tehniko toplotnega zemljevida. Na podlagi tega bi delodajalci sprejemali boljše odločitve o trenutni razporeditvi znanj, pridobivanju manjkajočega znanja oz. definiranju znanj v prihodnosti, kar jih bo naredilo bolj konkurenčne.

Ključne besede: razporejanje znanja, management znanja, poslovni procesi, poslovna inteligenca, mehka logika

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Management Competencies and Organizational Performance in CEE: A Comparison of Slovenia and Austria

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Today management competencies are seen as the only long-term strategic advantage of any company. However, from corporate experience we know that only 10 % of the knowledge acquired is transferred into entrepreneurial practice. Current trends in management development often overemphasize individual learning and ignore the missing fit between individual behavior and organizational performance.
To meet these demands, we collected competency attributions of managers attending executive courses in Austria and Slovenia. A questionnaire with closed and open question will help to explore and compare the relation between organizational performance and current management competencies in these countries. The results confirm our predictions to a lesser extent. However, they represent a basis for further examination of the relationship between managerial competencies and organizational performance.

Keywords: classes of competencies, competency-based theory, competency management, organizational performance

1 Introduction

In the theory and practice of management, the question of key success factors in the development of a company's sustainable competitive advantages has been raised consistently. That is, whether the key factors are internal or external or a combination of both. Along with the question about the factors leading to the development of sustainable competitive advantages of a company, research is also conducted in this field.

Literature reveals numerous more or less extensive research works on the key success factors of a company. Below, you will find the results of two research studies conducted in the mentioned field. The first study is an extensive ten year research project entitled "The Evergreen Project", which was carried out by Nitin Nohria and colleagues (2003). The fundamental goal of this project was to answer two questions: "Why do some companies consistently outperform their competitors?" and "Which of the hundreds of well-known business tools and techniques can help a company be great?" (Nohria et al., 2003, p. 42). In their conclusion, Nohria and colleagues formed the following list of behaviors and management practices that support excellence in each practice. The practices were divided into primary and secondary management practices (Nohria et al, 2003). Primary management practices include: to devise and maintain a clearly stated, focused strategy; develop and maintain flawless operational execution; develop and maintain a performance-oriented culture; and to build and maintain a fast, flat organization**.** Whereas, the secondary management practices include: holding on to talented employees and finding more; making industry-transforming innovations; finding leaders who are committed to the business and its people; and seeking growth through mergers and partnerships.

A similar, but less extensive research study was carried out by Stadler and Wältermann (2012) and entitled **"**The Century Champions". They made a detailed analysis of the commercial practices of the largest and above-average performing European companies established before 1904 – hence, companies that have left behind over a 100 years of successful development and operations. In their research, the authors identified five key factors that were typical of successful companies, i.e., an efficient use of the existing resources,

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diversification within the business lines known, successful management of the learning process, risk management and a conservative financial policy, and successful change management, particularly the management of changes in organization culture (Stadler & Wältermann, 2012).

The results indicated above allow us to sum up that the authors of both research studies identified the operations of managers and their capabilities related to the use and association of company resources as the key factor in the development of a company's competitive advantages. These findings can also be constrained theoretically using a theory that has recently become very popular when explaining a company's competitive advantages, i.e. the competency-based theory. This theory is based on a claim that the operations of the management focused on identifying and developing the company's key competencies that provide long-term competitive advantages are vital for the achievement of the company's competitive advantages. As stated by Probst et al. (2000), managers can develop a company's competencies on three levels in order to achieve competitive advantages:

- on an individual level by developing the competencies of an individual manager,
- on an organizational level by linking individual competencies to organizational competency clusters, and
- on an inter-organizational level by linking individual parts of the company and promoting and supporting cooperation between companies.

We next discuss the dimensions of the competency-based theory, which represent the fundamental theoretical frame for our empirical research.

2 Competency-based theory

Although competency movement "became popular in early 1990s with works produced by authors, such as Prahalad and Hamel (1994), Sanche et al. (1996), Teecce et al. (1997)" (Freiling 2004, p.28), several articles highlighting the competency-based theory were published much earlier. In his contribution "Evolutionary and competency-based theories of the firm", Hodgson (1998) cited the following works in competency-based theory as pioneers: Frank Knight (1921), Edith Penrose (1959), George Richardson (1972) as well as Richard Nelson and Sidney Winter (1982). Furthermore, he summarized his deliberations by stating that "the competencies paradigm has attracted a wide and growing following and its ideas are now prominent in the literature on corporate strategy" (Hodgson, 1998, p. 25). He also added that "the competency-based approach has links with similar approaches in a number of allied areas, including technology studies and international business" (Hodgson, 1998, p. 25) and stressed the extent and popularity of the competency-based theory today.

There is no doubt that the bases for the conceptual design of the competency-based theory can be found in the resource-based theory. In particular, this refers to the work produced by Jay Barney (1991). Despite the apparent relationship between the resource-based and competency-based theory, there are still major differences between them. Hence, Dierichx and Cool (1989) stated: "a key difference between the resource and competency-based view is the chain of causality: Whereas the resource-based view concludes that superior resources will cause performance differences among firms, the competency-based view prefers a more subtle reasoning. Homogeneous assets and heterogeneous resources are the starting point of the chain. However, the resource endowment is not enough in order to explain performance differences. The firm itself has to be in a position to make use of these resources in a goal- and market-oriented way" (Freiling, 2004, p. 31). At this point, the competency-based view steps in with its further explanation of the way to achieve competitive advantages, thus, supplementing and upgrading the resource-based perspective.

Another difference between the mentioned theories lies in the fact that "firm-specific competencies do not necessarily refer to internal resources" (Freiling, 2004, p. 32). The competency-based view is, therefore, also based on the concept of open boundaries. As stressed by Lorenzoni and Lipparini (1999), "this gives rise to the impression that sustaining competitive advantages very often rest on the assets of network of the firms and even more, on blending own capabilities with the ones of partner firms" (Freiling, 2004, p. 32).

Further important contributions in the field of the competency-based theory have focused on strategic management, such as Prahalad and Hamel (1990), who developed a core competency concept and Teece et al. (1997) with their explanation of the dynamics of competencies in the process of strategic planning and the building of corporate competitive advantages.

2.1 Competency Management and Performance

Since the beginning of competency management, nearly all authors have stated a positive relationship between management competencies and success. Boyatzis (1982) argued in his seminal book on competency and performance, that the competency clusters "Goal and Action Management", "Leadership", and "Human Resource Management" are the most important ones. Prahalad and Hamel (1990) distinguished between technological and management competencies and only the fit of both will lead to entrepreneurial success. Following these findings, the assessment center movement only focused on company-specific bundles of competencies to explain success and failure (Woodruffe, 1993). After that Bartlett and Goshal (1997) tried to find typical clusters of competency for any hierarchical level and McCall (1998) focused on the relationship between competency and corporate strategy as the crucial factor for success. More recent literature like Heyse and Erpenbeck (2004), Mühlbacher (2007), Erpenbeck and von Rosenstiel (2007) or Kauffeld et al. (2009) have offered multiple-job-models to emphasise the fact that competencies are strongly oriented towards the future. This enables a person or company to tackle upcoming challenges, whose nature cannot be predicted or determined, in a self-organized manner.

But most of these models – except Boyatzis (1982) – do not offer any empirical evidence concerning the relationship between competency management and corporate performance. Therefore this explorative study tries to give an answer to the

following research question: "Which management competencies are influencing the turnover or profit of a company? A comparison of Austria and Slovenia."

2.2 Classes of Competencies

To answer this question, we had to first define the different classes of competencies. Therefore the following will give a short overview concerning the theoretical development of the classes of competencies and this will lead us to the model used for the empirical research. An early differentiation of competencies was made by Jacobs (1989, p. 36), who distinguishes between "hard and soft competencies". Hard competencies refer, for example, to analytical and organizational capabilities, while creativity and sensitivity are soft competencies. From this, Jacobs (1989) develops the argument that hard competencies result in observable behavior, with the invisible but dominant soft competencies underlying them. The principles of this conviction, though conceivable, are difficult to prove and, thus, this conception has been classified as an artificial differentiation with low explanatory potential in the theoretical discussion (Woodruffe, 1993).

To avoid this criticism, a categorization of the knowledge, capabilities, properties and abilities required has prevailed: first, consisting of three – still without the category of self- and personal competency (Sloane 1998) – and later four areas of competency, which meet both the theoretical and pragmatic requirements (Heyse, 1997). A clearer description of these four classes of competencies can be found in Sonntag and Schaper (1999).

All these categorizations have been reworked. In newer classifications, for instance, functional and methodological competencies are combined, because of their proximity and the desired generation of a general competency model, which separates self-dispositive actions from personal dispositions and introduces the new class, i.e., that of leadership competency. As a result, the following five classes of competencies can be distinguished: (Kasper et al. 2005)

- Self-dispositive competencies, which represent the self-organized use of one's own resources (time, know-how etc.)
- Methodological competencies, comprising all analytical and solution-oriented behaviors
- Social-communicative competencies, covering the area of social interaction (excluding leadership)
- Leadership competencies, including the full range of leadership, motivation and personnel development
- Personal competencies, mainly manifesting themselves in extraordinary personality traits

In the following, we will have a look at these five classes of competencies and their impact on the corporate performance.

3 Methodology

The fundamental objective of our research was to discover the link between managerial competencies and organizational performance. For this first explorative study, questionnaires are based on eight closed questions. Five questions focus on the above mentioned classes of competencies, which are rated on a 6-point Likert type scale of importance, where 1 means "not important at all" and 6 means "very important". If one competency class is rated higher than four, the respondents will be asked to name the most important competency in this field. Furthermore, the proportional change of human resources within the last two years has been asked for as independent variable and the proportional changes of turnover and profit within the last two years were taken as dependent variables.

Data were collected from 27 Austrian managers and 55 Slovenian managers attending either an executive MBA at the WU Vienna University of Economics and Business or different executive courses at the University of Maribor, Faculty of Organizational Sciences. The explorative study was conducted in spring 2012. Due to mostly insignificant results for the Slovenian study (see Table 3), we decided to conduct a second more comprehensive study.

Data for this study were collected from Slovenian enterprises in June 2013 using a revised questionnaire. Therefore, instead of only five questions focusing on the five classes of competencies, we decided to include several questions within particular classes of competencies, such that each question is focusing on each individual competency, defined by Kasper and colleagues (2005). Consequently, we did not ask respondents to name the most important competency if the class was rated higher than four.

The anonymous questionnaires were sent to 216 postmail and to 738 e-mail addresses, using the Slovenian online survey portal 1ka. The sample was selected as a quota sample according to the proportion of the main activity of the enterprises. In each activity class, enterprises were randomly selected from PIRS – the business register of Slovenia. Among all mails sent, three letters and 66 e-mails were not delivered, because of different reasons such as wrong address, non-existing company etc. Additionally, questionnaires were sent to the 100 top Slovenian managers (according to the Slovenian magazine Manager (Top 100, 2013)). After two re-calls we received 214 completed questionnaires, therefore the overall response rate was equal to 22.3%.

Overall, 62% of respondents were male and 38% female. Among them, 76% were presidents or members of the board, 15% department managers and 9% without leadership function. Further, 54% organizations had less than 10 employees, 21% between 10 and 49, 8% between 50 and 149 and 17% more than 150 employees. For 43% companies the main business activity was services, for 23% trade, for 8% industry, for 5% education and science, for 4% health and social care, for 3% state or municipality, for 2% banking or insurance and for 12% companies other business activities. In the following section, we illustrate some descriptive statistics and regression models.

4 Results and Discussion

In order to compare the results of the first with those of the second study, the mean values for each class of competencies were computed in the latter. Again, we point out that in the

first study the questionnaires consisted of five questions for five classes of competencies, while in the second study every class of competencies consisted of several individual components (questions). Since we wanted to compare the results with the first study, the mean values for each class of competencies were computed for the second study. The results are presented below.

4.1 Results

We found out that respondents of both studies estimated the importance of all five classes very highly, although there were minor differences between results. In the first study, the average of competency importance range between 4.12 and 5.04 (see Table 1) and managers of both countries estimated Methodological competencies as the most important ones ($\bar{x}$ *(A)* = 4.85, *s(A)* = 0.83 **and** $\bar{x}$ *(SI)* = **5.04**, *s(SI)* = 0,84). In the second Slovenian study, class means of all competencies ranged between 4.82 and 5.39 (see Table 2), and Leadership was selected as the most important one ($\bar{x}$ = **5.39**, s = 0.59).

Especially in the second Slovenian study, high importance values yield negatively skewed distribution for all competencies (Table 2), which means that it won't be easy to obtain a significant multiple regression model.

Regression models

In the first step of both studies, regression models were built, containing the ratings of the five classes of competencies and the proportional change of human resources as independent variables and proportional change in profit as dependent one. No significance was found in the first study from both study groups. Neither for the Austrian nor the Slovenian data any significant results could be found in the first study. Similarly, no significant model could be found in the second study. The authors would like to explain these with respect to strategic balance-sheet decisions and matters of taxations.

After replacing the proportional change in profit by the proportional change in turnover, the Austrian regression model showed a highly significant (p = 0.001) result, explaining nearly two thirds of the spread *(R^2* = 0.612). The Slovenian data from the first study does not show any significance (p = 0.437). For the data from the second Slovenian study we obtain a significant model (p < 0.001) which explains 71% of the variation of turnover (R^2 = 0.71). Table 3 gives an overview regarding the independent input variables in detail.

Table 1: Descriptive statistics for the first study in both countries (A, SI)

		Competencies											
		Methodological		**Social-commun.**		**Leadership**		**Self-dispozitive**		**Personal**		**HR***	
			SI	A	SI	A	SI	A	SI	A	SI	A	SI
N	Valid	33	57	33	57	33	57	32	57	33	57	30	57
	Missing	0	0	0	0	0	0	1	0	0	0	3	0
Mean		**4.85**	**5.04**	**4.67**	**4.70**	**4.33**	**4.75**	**4.28**	**4.21**	**4.12**	**4.28**	**3.01**	**-7.61**
Std. Deviation		0.83	0.84	0.69	0.91	0.89	0.93	0.85	1.05	0.96	1.00	7.79	111.81
Skewness		-0.39	-0.62	-0.05	-0.56	-0.17	-1.27	0.07	-0.34	-0.26	-0.26	-0.13	-6.50
Kurtosis		-0.20	-0.10	-0.06	0.36	-0.87	3.59	-0.58	-0.31	-0.88	0.01	2.18	47.07

*…HR – proportional change in human resources

Table 2: Descriptive statistics for the second study

		Competencies					
		Methodological (class mean)	**Social-commun. (class mean)**	**Leadership (class mean)**	**Self-dispozitive (class mean)**	**Personal (class mean)**	**HR***
N	Valid	195	194	192	189	191	161
	Missing	25	26	28	31	29	59
Mean		**4.82**	**4.87**	**5.39**	**5.15**	**5.29**	**1.85**
Std. Deviation		0.67	0.68	0.59	0.61	0.57	23.60
Skewness		-0.73	-0.77	-2.04	-1.15	-1.29	1.65
Kurtosis		1.03	1.72	7.09	2.74	3.29	14.10

Table 3: Regression models for Austrian (A) and both Slovenian Studies (SI-1 and SI-2)

Model	A		SI – 1		SI – 2	
	Beta	***p***	**Beta**	***p***	**Beta**	***p***
(Constant)		0.423		0.93		0.68
Methodological (class mean)	-0.20	0.21	0.284	0.081	-0.05	0.48
Social-communication (class mean)	-0.12	0.54	-0.059	0.767	0.09	0.21
Leadership (class mean)	0.50	0.01	-0.171	0.343	-0.02	0.80
Self-dispozitive (class mean)	0.22	0.24	-0.052	0.775	-0.07	0.39
Personal (class mean)	-0.01	0.97	-0.042	0.812	0.07	0.36
Prop. Change in human resources	0.53	0.00*	0.223	0.115	0.83	0.00*
Model summary	$R^2 = 0.61$, $p = 0.001$		$R^2 = 0.11$, $p = 0.44$		$R^2 = 0.71$, $p = 0.00$*	

Dependent Variable: Proportional change in turnover; *p<0.001

Table 3 shows that it is evident that the Austrian regression model shows significant results concerning leadership competencies and the proportional change in human resources for an increasing turnover. The ranking of the open questions – as stated in the description of the questionnaire before – shows following results for the competency class of leadership: motivation & empowerment was stated 25 times as most important competency, leadership 10 times and HR development 3 times. Therefore, these results offer the explanation that in a growing and motivating environment, even in times of crisis, strategic competency management focusing on leadership competencies will help to improve corporate performance.

Unfortunately, the analysis of the first Slovenian data with proportional change in turnover as dependent variable also does not show any significances. The regression model itself (p = 0.437) and also the variables (see Table 3) are far away from an **"**at least acceptable**"** result. Only methodological competencies and the change in human resources might offer some starting points for further analysis.

From the second study we obtained a significant model that has only one significant predictor i.e., the proportional change in human resources. All other variables are far from being significant. Because we only got one significant variable, we also built a simple regression model with proportional change in turnover as a dependant variable and proportional change in human resources as the only independent variable. We again obtain a significant model that explains 70% of the variation of turnover (see Table 4), which means that all other variables show a negligible impact on turnover.

Table 4: Coefficients for the second Slovenian simple regression model.

Model	Beta	*p*
(Constant)		0.57
Human resources	0.84	0.00*

Dependent Variable: Change in turnover;
$R^2 = 0.70$ *p<0.001

As the Austrian model also depicts leadership as a significant variable, we checked for outliers in the Slovenian second study and tried to get a multiple regression model without 5% of the most extreme values. Even omitting those values, we were not able to obtain a significant model with significant predictors other than human resources for none of the dependent variables**:** proportional change in profit and proportional change in turnover.

5 Conclusion

The research studies and articles focusing on the study of the relationship between managerial competencies and organizational performance are scarce. In order to fill the void in this field, three empirical studies were conducted using a questionnaire that was based on eight closed questions. Five questions focused on the above mentioned classes of competencies, which were rated on a 6-point Likert type scale. Furthermore, the proportional change of human resources within the last two years was asked for as an independent variable, whereas proportional changes of turnover and profit within the last two years were taken as dependent variables. In this study, we used the competency model of Kasper et al. (2005) and included 27 Austrian managers and 55 Slovenian managers in spring 2012. Due to mostly insignificant results for the Slovenian study, we decided to conduct a second, more comprehensive study. Data for this study were collected among Slovenian enterprises in June 2013 and included 214 Slovenian managers.

Unfortunately, the goals set at the beginning of the research were not achieved. The results did not bring a clear answer to the question **"**Which managerial competencies are crucial for achieving organizational performance?". Only the Austrian sample reveals a link between human resources, leadership and turnover. The results of both Slovenian studies, however, did not bring the desired answers. In our opinion, the results for Slovenia are a reflection of the not yet concluded structural reforms in the Slovene economy and other organizations. All functions of the management are viewed highly important, which shows a low level of professionalization of manage-

ment and an undifferentiated understanding of managerial competencies.

The current research results allow us to draw the following conclusions. Firstly, it may be concluded, although this was not the goal of the research, that all five classes of competencies that were included in our model were estimated very highly with the lowest mean in the 6-point importance scale being 4.12. High values of individual competencies prove that the competency model established is correct. Secondly, the relationship between competency and organizational performance that was found in the Austrian study stresses leadership as the key competency in management in times of crisis in the economy and society. Similar findings have been reached by the Edelman Berland consulting firm (2013), which has been carrying out an extensive study on trust, the so-called Edelman Trust Barometer, for over a decade. Presenting the final 2013 research report on the level of global trust, Richard Edelman, the President and CEO, said: "We're clearly experiencing a crisis in leadership," (www.edelmanberland.com/press-releases/2013-edelman-trust-barometer-finds-a-crisis-in-leadership). This statement summarizes the findings from their research on the trust expressed in managers worldwide. Both results – from Edelman Berland and our studies – have identified leadership as the key managerial competency at the moment.

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Management kompetenc in organizacijska uspešnost v Srednji in Vzhodni Evropi: Primerjava Slovenije in Avstrije

Dandanes management kompetence veljajo za edino dolgoročno strateško prednost kateregakoli podjetja. Toda korporativne izkušnje so pokazale, da se le deset odstotkov pridobljenega znanja uporabi v podjetniški praksi. Trenutni trendi v razvoju managementa pogosto preveč poudarjajo učenje posameznika in zanemarjajo manjkajočo povezavo med obnašanjem posameznika in organizacijsko uspešnostjo.
Da bi zapolnili obstoječo vrzel, smo pri udeležence na seminarjih za managerje v Avstriji in Sloveniji zbirali lastnosti, ki po mnenju managerjev odražajo njihovo kompetentnost. Vprašalnik z zaprtimi in odprtimi vprašanji nam je pomagal raziskati in primerjati odnos med organizacijsko uspešnostjo in trenutnimi managerskimi kompetencami v obeh državah. Rezultati le do neke mere potrjujejo naše napovedi, vseeno pa predstavljajo trdne temelje za nadaljnje raziskovanje odnosa med managerskimi kompetencami in organizacijsko uspešnostjo.

Ključne besede: vrste kompetenc, teorija temelječa na kompetencah, management kompetenc, organizacijska uspešnost

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Personality: Blessing or Curse? The Entrepreneur's Path from Personal to Leadership Competencies

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This paper is based on a study which investigates the relevance of management competencies in Austrian organizations, focusing on start-ups. The study as well as the existing literature confirms that personal competencies such as ambition, self-confidence or assertiveness are perceived as more important by start-ups than by established companies. However, further results of the paper show that especially leadership competencies play a major role in developing a growing start-up whereas personal competencies fade into the background and can even have a negative impact on turnover growth. In general, the paper discusses special characteristics of competence classes for start-ups and examines differences and similarities in comparison to established companies. As it has already been indicated, the evidence leads to different and surprising considerations for entrepreneurs and growing start-ups.

Key words: Classes of competencies, entrepreneurship, start-up

1 Introduction

Start-ups are operating in a difficult organizational environment which differs from the one established companies act in. In the course of the evolution of a start-up its managers have to adapt to changing circumstances. Among other factors flexibility, individual competencies, innovation capacity and networking play important roles regarding the success of an enterprise (Anderson, 1992: U.1.1; Hoang and Antoncic, 2003:173; Pearson, 1972: 116). The dynamic environment of start-ups can necessitate a development from an internal towards an external orientation (Zhang et al., 2006:304+). In general, the evolution of start-ups and the concomitant challenges can be explained on the basis of several stage and development models (e.g. Greiner, 1998: 56; Kazanjian and Drazin, 1990: 137+; Phelps, 2007: 13; Mount et al., 1993: 118+).

Those models illustrate the strong connection between the development of a company and change management processes. Due to a lack of long-term strategies within start-ups, short-term and reactive change processes occur more frequently than in established companies (Ates and Bititci, 2011: 5614), which has a negative effect on the companies' success (Smith, 1998:867+). In its evolution a start-up has to face numerous change processes. However, this aspect is just one of many distinctive features which can be observed. Various theories focusing on the development of companies (e.g. Greiner, 1998; Phelps, 2007) in terms of change management (e.g. Kotter, 1997; Lewin, 1943; Pietschmann, 2008) and competence classes (e.g. Mühlbacher, 2007; Erpenbeck and von Rosenstiel, 2003) may help to understand and master those issues.

This paper analyzes special attributes as well as challenges of start-ups on the basis of the competence classes according to Mühlbacher (2007:131+): Methodological, leadership, social-communicative, self-dispositive, personal competencies. The paper aims to point out distinctions as well as characteristic features regarding the competence classes mentioned above by comparing start-ups and established companies in Austria.

Accordingly, the following research question needs to be dealt with: To what extent does the perception of competence classes between start-ups and established companies differ?

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Entrepreneurs and start-ups

Small businesses are companies, where managers can act independently and are also often the founders who provide the necessary funds. Differences can normally be seen quantitatively, i.e. such companies differ according to the number of employees, turnover and total assets. Those small businesses usually operate in one key market and are, as well as medium-sized businesses, vital not only for the European but also for the global economy (Europäische Kommission, 2006: 5+; OECD, 2005:16+; Scott and Bruce, 1987:45+; WKO, 2012:1). In this context start-ups are usually integrated in the category of small businesses.

SME`s and especially start-up's are often mentioned in the context of and related to the terms "foundation research" and "entrepreneurship", which are not clearly defined in theory. The characteristics of founders and their behavior, the motivation of founders (Corsten, 2002:7) as well as the risk and uncertainty aspect, which was defined by Cantillon (1755), are important aspects in this respect (Mugler and Fink, 2007:12+). Entrepreneurial visions and activities are major factors of this aspect (Brandl and Bullinger, 2007:52), and so are product- as well as market-innovations (Miller, 1983:771). Because of market exploitation (Franke, 2006:368) or emerging uncertainties, especially technological uncertainties (Littler and Pearson, 1972 :111+), new opportunities can arise, which lead to incremental but also fundamental change. Thus, managers and founders have to be aware of and deal with those changes.

One major research field in the context of entrepreneurship is the network-based research. Social interactions and cooperation as well as the communication structure of entrepreneurs are of research interest (Bögenhold, 2007:36+). Therefore, social capital and networks are critical aspects for success. However, all resources but also all parties involved are partially determined and influenced by the basic structure of a particular company and its environment (Mücke and Rami, 2007: 139+). Nevertheless, a central role as well as great power is attributed to the entrepreneur.

Another important research field takes a close look at the strategies for SME's and start-ups, which are essential not only for the success but also for the survival of any organization (Cressy, 2006: 174; Romanelli, 1989: 381+). A high degree of agreement concerning objectives serves as a necessary thread running through the organizational development (Hueber, 2011: 70+). For start-ups as well as for established companies the definition of a vision and a mission as well as of objectives is a critical element of the strategy process (Kraus, 2006: 39). This process has to be seen as long-lasting and nonlinear (Fueglistaller et al., 2012: 178). Moreover, this development is not separated from the ensuing implementation process and has to be controlled permanently. In addition to commonly known strategic frameworks like Porter (1985), Ansoff (1965) or Mintzberg (1995), it should be mentioned that newly formulated concepts which have a strong appeal, such as the Business-Model Canvas by Osterwalder and Pigneur (2010) as well as the Long-Tail concept by Anderson (2007), are becoming more and more popular.

Classes of competencies

The concept of competence is defined differently throughout the existing literature. Moreover, the term has to be analysed within the respective specific context (Hager, 1995:150; Erpenbeck and von Rosenstiel, 2003: XVIII+). North et al. (2013: 43), for example, define competence as the ability to act appropriately in specific situations, but this is just one of many definitions. A similar issue exists with regard to applied categories. Generally, distinctions are sometimes ambiguous, measurements are hard to make and comparability is not always guaranteed (Mühlbacher, 2007:130). One significant example is "leadership". Many different definitions have been published throughout history and in science different attributes are associated with the term (Barrow, 1977:231; Gupta, 1984:404; Bücker and Poutsma, 2010:830; Gosling et al., 2012:XVII).

Based on the concept of Erpenbeck and von Rosenstiel (2003a:XVII+), Mühlbacher (2007: 13) provides a classification of competencies which combines these concepts with Bourdieus' theory of society. As a result, methodological, leadership, social-communicative, self-dispositive and personal competencies are defined and separated from each other. In order to define the distinctions between the different theory-based competence-classes, Mühlbacher (2007:129+) provides competence-lists for each class separately. As a matter of fact, these lists can be extended.

In the following, the authors of this paper attempt to show the challenges for start-ups according to the competence-class-framework.

Methodological competencies

This category contains different instruments for analytical thinking. It stands to reason that procedures for proceeding factual issues (Mühlbacher, 2007:134), where specific know-how, instrumental knowledge and capabilities are used creatively, are included (Erpenbeck and von Rosenstiel, 2003a: XXIV). Examples of these competencies are analytical / crosslinked / visionary thinking, change-management, strategic-management or market- & industry-know-how (Mühlbacher, 2007:134+). Successful start-ups quantify and define objectives and guidelines clearly (Smith, 1998:867+). An early-stage strategic focus and a proper overall planning of the product-market combination have a positive impact on the growth rate. Moreover, the chosen strategy should be long-lasting and should not be changed (Feeser and Willard, 1990: 95). However, Ates and Bitici (2011: 5624) show that many start-ups focus primarily on short-term and reactive change-processes. Thus, long-term and strategic planning is not respected appropriately. It is quite obvious that many organizational aspects like the strategic- and change-management, which belong to the methodological competencies, are underdeveloped in start-ups, especially at an early-stage, and have to be developed gradually. According to development-models (e.g. Phelps, 2007; Mount, 1993), which do not include a specific sequence of development stages, and also according to stage-models (e.g. Dodge and Robbins, 1992; Greiner, 1998; Kazanjian, 1988; Rutherford et al., 2003; Steinmetz, 1969; Scott and Bruce, 1987) this statement has been confirmed. Management tasks have to be delegated progressively and founders have to focus on managing aspects and not on questions of execution. Increasing growth leads to more organizational complexity and new organizational requirements arise

steadily. As a result, change occurs and has to be dealt with appropriately (Mount et al., 1993: 119+). Phelps (2007: 13) points out that also the formal structure, which can be added to the methodological competencies (Mühlbacher 2007: 135), receives more attention as the organization is growing. So far the discussion shows that there is a tendency that, generally, methodological competencies receive less attention from early-stage start-ups than other competencies. In the wake of organizational growth this competence class becomes more and more important. It should be mentioned that this does not mean that methodological competencies are not critical success-factors. However, short-term reactive processes enjoy more attention than long-term strategic planning. This leads to hypothesis 1: *Methodological competencies are perceived as less important by start-ups than by established companies.*

Leadership competencies

Barrow (1977: 232) defines leadership as "the behavioral process of influencing individuals or groups towards set goals". This category contains instruments such as motivation, teamwork management (Goleman et al., 2002: 57), or human resources development (Chung-Herrera et al., 2003: 23; Mühlbacher, 2007: 144+). Characteristics and special issues of leadership in start-ups have been treated in the entrepreneurship-literature for ten years (Cogliser and Brigham, 2004: 771; D'Intino et al., 2007: 105; Hmieleski and Ensley, 2007: 865; Mugler and Fink, 2007: 11).Thus, many research papers deal with various issues of this competence class. In the course of an early start-up phase, standard business processes and the organizational structure are not defined. Therefore, founders, in comparison to managers of established companies, do not have fixed structures and reliable processes for leading the organization (Ensley et al., 2006: 258+). Thus, founders have to develop and implement such structures and processes. This means that they have to convey their vision to their team and inspire them (Baum et al., 1998: 43+; Cogliser and Brigham, 2004: 773). Moreover, objectives have to be agreed upon and human resource should be managed properly (Williamson, 2000: 27+). Another important aspect, especially for founding-teams, is that one founder has to act as "lead-entrepreneur" and has to be responsible for leading not only the company but also the founding-team (Ensley et al., 2000: 72+). Also stage and development models which describe the development of young companies address the leadership-issue (e.g. Greiner, 1998; Kazanjian and Drazin, 1990; Phelps et al., 2007). Greiner (1998: 59) describes a leadership-crisis as a phenomenon that arises after an early start-up stage. As a result, new management tasks demand a formalization of processes and the management itself has to be professionalized. Generally, also the management structure has to be developed. Thus, start-up members are confronted with flat hierarchies and little structures (Kazanjian and Drazin, 1990: 140+). An internal orientation, for example, which concentrates on product development, could be the result and the start-up has to learn to focus on external factors (Zhang et al., 2006: 308). A restructuring process triggered off by new overall conditions and initiated through an internal crisis after the first start-up-stage is also discussed by Scott and Bruce (1987: 49+). One characteristic feature of this development is that the human resource management, which is also a leadership competency according to Mühlbacher (2007: 145), becomes more important. Also Phelps (2007: 8+) and Heneman et al. (2000: 18) emphasize this development. In conclusion, it seems that start-ups pay less attention to leadership competencies. Consequently, hypothesis 2 states: *Leadership competencies are perceived as less important by start-ups than by established companies.*

Social-communicative competencies

Social-communicative competencies describe behaviors as well as social interactions and contain, according to Erpenbeck (2010: 23), for example communicational-skills, cooperation-skills, flexibility or relationship-management. In addition, Mühlbacher (2007: 141+) adds moderation and conflict-management to this category. Leadership competencies are not included and are put into a category of its own (Mühlbacher, 2007: 82). Social-communicative competencies, according to Mühlbacher (2007: 142), have a high value for start-ups. Through an established communication network it is possible to reveal important market information but also better contract conditions. Lobbying (Peng, 2006: 32+) and networking (Hoang and Antoncic, 2003: 173; Arenius and Clercq, 2005: 260+; Brüderl and Preisendörfer, 1998: 220+) can also be of great interest for this purpose. Thus, internal and external communications have a significant value for entrepreneurs (Wang and Wu, 2012: 713). Furthermore, these social-communicative soft skills become increasingly important (Schmude, 2002: 248+). It seems to be obvious that social-communicative competencies play a key role for entrepreneurs in developing a start-up. In addition, Mueller et al. (2012: 1008) state that a central role for entrepreneurs is exchanging information and opinions. Wang and Wu (2012: 713) describe the importance of another social-competence, the ability to work in a team. Commitment (Wang and Wu, 2012: 713) and trust (Wu et al., 2009: 353) have to be encouraged to gain competitive advantages. Based on the above discussion, it can be concluded that social-communicative competencies, according to Mühlbacher (2007: 82), have a high value for start-ups. Therefore, hypothesis 3 states: *Social-communicative competencies are perceived as more important by start-ups than by established companies.*

Self-dispositive competencies

Self-dispositive competencies describe skills which influence the self-management of an individual. The development of particular skills is based on conveyed values (Mühlbacher, 2007: 82+). Flexibility, time-management, stress tolerance, innovation capabilities or entrepreneurial thinking are relevant examples in this respect (Chung-Herrera et al., 2003: 20; Mühlbacher, 2007: 131). Generally, innovation capabilities and creativity as well as opportunity recognition are important factors for start-ups that do not only determine the market entry but also their whole development (Peng, 2006: 30+). If a start-up enters a new market, the product has to be adapted to external conditions which determine the environment of the market. Start-ups and entrepreneurs are trying to exploit opportunities within the market and consequently start-up businesses involve change processes (Franke, 2006: 368).

These processes often imply market-product innovations which lead to changes of the status quo (Hauschildt, 2004: 3+). Self-dispositive competencies play a major role for the above discussed developments and processes. Greiner (1998: 58+) but also Kazanjian and Drazin (1990: 140+) describe that self-dispositive competencies like innovation capabilities, creativity, inventiveness or flexibility are significant factors regarding the organizational development, especially during an early start-up stage. Moreover, Littler and Pearson (1972: 116) argue that flexibility is essential for innovation processes and, additionally, Anderson (1992: U.1.1) describes flexibility and also individual skills and teamwork as central factors which are necessary for the success of a start-up. This discussion shows that self-dispositive competencies, according to Mühlbacher (2007: 131), like creativity, innovation capabilities and also flexibility play an important role, especially in an early start-up stage. Thus, hypothesis 4 can be derived as follows: *Self-planning competencies are perceived as more important by start-ups than by established companies.*

Personal competencies

This category contains personality characteristics which are stable over time. Examples are ambition, self-confidence or assertiveness (Mühlbacher, 2007: 146+). Beside socio-demographic factors, personal factors determine the character of an entrepreneur (Preisendörfer, 2002: 46). However, there is no specific characteristic feature that defines a successful entrepreneur. Although the person itself is a relevant and important factor, external influences like legal, cultural or political conditions have to be considered to analyze the success of a formation of a company, which is a complex socio-economic and technical phenomenon (Jacobsen, 2006: 227+). Nonetheless, personality-tests like the NEO-FFI, according to Allport and Odbert (1936: 171+), help to understand specific characteristics of entrepreneurs and founders. On the one hand Tett et al. (1991: 732+) show that openness to new experiences and social compatibility have the highest correlation with efficient working behavior, on the other hand Salgado (1998: 282+) describes that conscientiousness and emotional stability are most relevant for the working behavior. Furthermore, Barrick et al. (2001: 21+) postulate that conscientiousness and emotional stability have the highest validity for all criteria and types of professions. Managers have the highest development score as far as extraversion is concerned. In general, many publications show that special characteristics are very important for entrepreneurs and founders. For example willingness to take risk and pro-activity, which are also important for an aggressive competitive behavior (Lumpkin and Dess, 2001: 148+), are prominent characteristics of successful founders (Preisendörfer, 2002: 46). Another example is that founders with a focus on growth attach more value to the character of a new employee or a partner than to the compatibility between abilities and job requirements (Heneman et al., 2000: 18). This focus can be partially described because the integration of a new member into the existing organizational culture has a significant value for founders. To conclude, there is a tendency that personal competencies are perceived as being more important for start-ups than for established companies: Thus, hypothesis 5 can be derived as follows: *Personal competencies are perceived as more important by start-ups than by established companies.*

2 Methods

The hypotheses mentioned above have been addressed through a quantitative study design. The questionnaire is based on seven closed questions. Five questions are focusing on the above mentioned classes of competencies, which are rated on a 6-point Likert scale. If one competence class has been rated higher than four, the respondents were asked to name the most important competency in this field. Furthermore, the proportional changes of human resources, turnover and profit within the last year have been evaluated.

The data were collected from 226 Austrian managers. 27 of the surveyed organizations are start-ups. Table 1 gives an overview of the represented industries.

3 Results

The empirical investigation starts with a descriptive analysis of the data. After building subsamples of start-ups and established companies, a Wilcoxon/Mann-Whitney test, ranking

Table 1: Industries distribution

Industries	Total	Percent	Start-ups	Percent
Consumer Goods	41	18.1	5	15.4
Investment Goods	3	1.3	0	
Communication / Information Technology	29	12.8	13	50
Pharmaceutical Industry/ Chemistry	6	2.7	0	
Consulting	33	14.6	0	
Banks / Insurance / Financial Services	37	16.4	2	7.7
Commercial Industry	18	8.0	1	3.8
Others	59	26.1	6	23.1
Total	**226**	**100.0**	**27**	**100.0**

order correlations as well as t-tests have been performed to gain insight into the characteristics of the subsamples. To address the companies' performance, regressions have been performed to predict revenue growth through competence classes. Based on the outcome of this regression analysis, a model optimization has been performed to further increase the explained variance.

A comparison between both subsamples of start-ups and established companies shows that the respondents of start-ups are significantly younger and encompass less management experience in years ($p<0.05$). Beyond that, the data in total show a high correlation between age and management experience (Pearson's $r=0.84$).

The multiple answer items of tasks evaluated by the respondents have been analyzed through a contingency table (Table 2).

The task mentioned most of the time throughout the total sample is marketing/sales as this task has been mentioned by

Table 2: Contingency table

		established companies	start-ups	total	Chi-Square	Sig.
Marketing/ sales	quantity	85	18	103	5.5	0.19
	% subsample	42.70%	66.70%			
	% total	37.60%	8.00%	45.60%		
Production	quantity	9	7	16	16.56	0.0
	% subsample	4.50%	25.90%			
	% total	4.00%	3.10%	7.10%		
Procurement/ logistics	quantity	19	8	27	9.11	0.003
	% subsample	9.50%	29.60%			
	% total	8.40%	3.50%	11.90%		
Human resources	quantity	53	12	65	3.68	0.055
	% subsample	26.60%	44.40%			
	% total	23.50%	5.30%	28.80%		
Organization	quantity	36	19	55	35.289	0.0
	% subsample	18.10%	70.40%			
	% total	15.90%	8.40%	24.30%		
IT	quantity	14	12	26	32.68	0.0
	% subsample	7.00%	44.40%			
	% total	6.20%	5.30%	11.50%		
Finance/ accounting/ controlling	quantity	39	15	54	16.9	0.0
	% subsample	19.60%	55.60%			
	% total	17.30%	6.60%	23.90%		
Research & development	quantity	8	11	19	41.63	0.0
	% subsample	4.00%	40.70%			
	% total	3.50%	4.90%	8.40%		
Project management	quantity	39	18	57	27.93	0.0
	% subsample	19.60%	66.70%			
	% total	17.30%	8.00%	25.20%		
Other	quantity	26	0	26	3.99	0.046
	% subsample	13.10%	0.00%			
	% total	11.50%	0.00%	11.50%		
quantity		199	27	226		
% applied to the total value		88.10%	11.90%	100.00%		

45.6 percent of all respondents. Concerning the subsample of start-ups, organization has been most frequently chosen with 70.4 percent followed by marketing/sales and project management with 66.7 percent each. Concerning established companies, marketing/sales with 42.7 percent has been the top choice followed by human resources with 26.6 percent.

The contingency table gives another impression of the differences between the work behavior of established companies and start-ups. While respondents of start-ups selected on average 4.4 tasks, the choice of established companies averaged at 1.6 tasks. This indicates that respondents of start-ups are confronted with a broader variety of tasks than respondents of established companies. Furthermore, the chi-square test shows that the frequencies observed differ significantly from the frequencies expected for all tasks except human resources.

Before investigating the differences of each competence class between both subsamples separately, a Wilcoxon/Mann-Whitney test has been performed in order to identify if the respondents' behavior of those two groups reflect an overall difference among all competence classes. This nonparametric test has been performed in order to identify the difference through ranking and, subsequently, its distribution of rank sums. As a result, no significant differences in the overall rating behavior have been found.

Surprisingly, there is a strong difference between the relevance of each individual competence class between start-ups and established companies. It seems that those competence classes that are ranked high in the subsample of established companies are found to be not that relevant in the subsample of start-ups and vice versa. The correlation between the ranking of established companies and start-ups concerning the relevance of the competence classes is distinctively negative (Spearman's $\rho = -0.5$).

Start-ups rated the methodological competencies with the highest relevance (average = 5.19). Leadership competencies have been evaluated as the least important competence-class with an average score of 4.63. Established companies, however, found that the social-communicative competencies have the highest relevance with an average score of 4.93. The lowest relevance related to the self-dispositive competencies with an average score of 4.55.

Table 3: Ranking order

	Start-ups	**established companies**
Methodological competencies	1	3
Leadership competencies	5	2
Social-communicative competencies	4	1
Self-dispositive competencies	3	5
Personal competencies	2	4

Note: 1= Highest value

Table 4 shows the results of the t-statistics in detail.

Table 4: Independent Samples Test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**		
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**
mc	Equal variances assumed	1.064	.303	-3.051	224	.003
	Equal variances not assumed			-3.365	35.774	.002
scc	Equal variances assumed	.003	.957	.696	224	.487
	Equal variances not assumed			.710	33.877	.483
lc	Equal variances assumed	4.682	.032	.276	224	.782
	Equal variances not assumed			.208	29.393	.837
sdc	Equal variances assumed	.175	.676	-1.968	224	.050
	Equal variances not assumed			-1.879	32.558	.069
pc	Equal variances assumed	.027	.871	-2.504	224	.013
	Equal variances not assumed			-2.316	32.021	.027

Concerning the leadership and social-communicative competencies, the t-test has not shown any significant differences between start-ups and established companies. Therefore, H2 and H3 cannot be supported.

Concerning methodological, self-dispositive and personal competencies, the t-test has shown significant differences between start-ups and established competencies. The relevance of those three competence-classes is significantly higher for start-ups than for established companies. As a result, H1 has not been confirmed, whereas H4 and H5 have been confirmed.

The following chapter examines the quality of competence classes to predict corporate success. Data about turnover and profit have been collected in the survey. However, as most start-ups do not have a focus on profit as they are in an early organizational stage, the majority of 23 respondents have a profit growth of 0 percent. Concerning turnover growth, the survey data reflect a more scattered response with an average score of 0.56 and a standard deviation of 1.05. Therefore, regressions have been performed on the annual turnover growth. Besides, one respondent has been eliminated with a stated turnover growth of 500 percent.

Competence classes as a predictor for turnover growth

A linear regression has been performed that encompasses the influence of all competence classes. The underlying mathematical model is the least square method to estimate its parameters in the sense that the residues ε_i are preferably small. The following equation of the regression analysis shows the dependent variable (turnover) as a function of methodological competences (mc), social-communicative competencies (scc), leadership competencies (lc), self-dispositive competencies (sdc) and personal competencies (pc).

$$turnover_i = b_0 + b_1 \cdot mc + b_2 \cdot scc + b_3 \cdot lc + b_4 \cdot sdc + b_5 \cdot pc + \varepsilon_i$$

The adjusted coefficient of determination has a value of 0.214, which indicates that 21.4 percent of the variance of turnover growth can be explained by the model. Consequently, 78.6 percent of the variance cannot be explained by the model because they underlie an influence outside the predicting model parameters.

The f-test of this model is not significant (p=0.078), which states that the f-test returns a value that is not high enough to ensure that the explained variance from this model is significantly different from the variance explained from the prediction based on the average of turnover growth.

The t-tests of the explicit regression coefficients show that the personal competence class is the only coefficient that differs significantly from 0 ($p<0.05$). This fact reflects the influences through the competence classes. For example, methodological competencies have a beta of 0.002, which means that a rise of this coefficient has almost no impact on the result of revenue.

Table 5: Regression coefficients

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.609a	.371	.214	.50166

a. Predictors: (Constant), mc, scc, lc, sdc, pc

ANOVA[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.968	5	.594	2.359	.078[b]
Residual	5.033	20	.252		
Total	8.002	25			

a. Dependent Variable: turnover
b. Predictors: (Constant), mc, scc, lc, sdc, pc

Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.767	1.082		.709	.486
mc	.002	.157	.002	.011	.991
scc	-.049	.145	-.068	-.338	.739
lc	.281	.151	.472	1.863	.077
sdc	.169	.140	.262	1.205	.242
pc	-.464	.147	-.715	-3.168	.005

a. Dependent Variable: turnover

In conclusion, the category of personal competencies is the only significant regression parameter and has a negative impact on turnover growth. All other competence classes have a less influential impact on the outcome.

Model optimization

The previous regression of all competence classes has shown that some parameters do not resolve relevant impact on turnover growth. To gain further improvements of the regression model's prediction quality, a model optimization has been performed in order to determine relevant model parameters. Through stepwise inclusion, only those parameters have been included into the model that enhance the adjusted R^2. Compared to the R^2, the adjusted R^2 considers the increase of the degrees of freedom. Therefore, the inclusion of a model parameter can lower the adjusted R^2 if the variable leads to a loss of predictive power of the regression model.

The result of the optimized model is based on only three competence classes, namely leadership, self-dispositive and personal competencies. All other variables (social-communicative and methodological competencies) have not fulfilled the requirements to enter the model. The model explains almost a third of the spread (adjusted R^2=0.281) and the f-test is significant ($p<0.05$).

The model building method is forward stepwise using the adjusted R^2 criterion. A checkmark means the effect is in the model at this step.

The analysis shows that leadership and personal competencies differ significantly from 0. In detail, leadership competencies have a significant positive impact on turnover growth, whereas personal competencies influence turnover growth negatively.

4 Discussion

This paper analyzes differences and special issues of competence classes according to Mühlbacher (2007) comparing start-ups with established companies. Hypothesis 1 describes that methodological competencies are perceived as less impor-

Table 6: Regression coefficients

Adjusted R Square		Step		
		1	2	3
		.162	.262	.281
Effect	pc	✓	✓	✓
	lc		✓	✓
	sdc			✓

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.606a	.367	.281	.47980

a. Predictors: (Constant), pc, lc, sdc

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.937	3	.979	4.253	.016[b]
Residual	5.065	22	.230		
Total	8.002	25			

a. Dependent Variable: turnover
b. Predictors: (Constant), pc, lc, sdc

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.615	.767		.802	.431
sdc	.163	.128	.254	1.270	.217
pc	-.457	.137	-.704	-3.346	.003
lc	.264	.112	.443	2.363	.027

a. Dependent Variable: turnover

tant by start-ups than by established companies. This hypothesis has been derived from existing literature which shows that start-ups focus on short-term and reactive change processes whereas long-term and strategic planning is not respected appropriately (Ates and Bitici, 2011: 5624). Development models (e.g. Phelps, 2007; Mount, 1993) but also stage models (e.g. Dodge and Robbins, 1992; Greiner, 1998; Kazanjian, 1988; Rutherford et al., 2003; Steinmetz, 1969; Scott and Bruce, 1987) support this conclusion. However, the data show that the opposite is the case. A reason for this result could be that the start-ups within this sample are moderately successful and 50 percent of them have already received seed or venture capital or funding from the public sector. This may also indicate that strategic elements have already been developed. Furthermore, venture capitalists and capital providers consult start-ups after their investments and contribute to the development of important methodological elements. Hypothesis 2 states that leadership competencies are perceived as less important by start-ups. The data disprove hypothesis 2 and show that no significant difference can be found. Again, this result could be influenced by the success of the included start-ups. Ensley et al. (2006: 258+) mention that leadership structures have to be implemented, according to Baum et al. (1998: 43+) the corporate vision has to be clearly communicated to all employees and Williamson (2000: 27+) points out that common objectives have to be agreed upon. Thus, it can be concluded that the start-ups within the sample might have already implemented the elements mentioned above and therefore, hypothesis 2 cannot be supported. Regarding hypothesis 3, which states that social-communicative competencies are perceived as more important by start-ups, the analysis shows that no significant differences exist and therefore the hypothesis cannot be supported. The literature suggests that elements like networking (Hoang and Antoncic, 2003: 173; Arenius and Clercq, 2005: 260+; Brüderl and Preisendörfer, 1998: 220+) or lobbying (Peng, 2006: 32+) are essential tools for start-ups. That does not mean that those tools are not helpful for established companies as well. Hypotheses 4 and 5 state that self-dispositive and personal competencies are perceived as more important by start-ups than by established companies. Both hypotheses can be supported by the data. Thus, the approach derived from the literature can be confirmed. Self-dispositive competencies like innovation capabilities, creativity, inventiveness or flexibility (e.g. Greiner, 1998: 58+; Kazanjian and Drazin, 1990: 140+) play a major role for start-ups, especially during an early-stage development. Moreover, the focus on personal competencies like willingness to take risk, pro-activity and an aggressive competitive behavior (Lumpkin and Dess, 2001: 148+) and the importance of a particular personality profile of a new member of an organization (Heneman et al., 2000: 18) can be confirmed. To sum up, the analysis shows that differences regarding the perception of competence classes between start-ups and established companies do actually exist. Differences and special issues arise due to extraordinary conditions start-ups usually have to face. Apart from the results regarding the defined hypotheses, further observations through regression analyses and model optimization have been generated.

The analysis shows that leadership as well as personal competencies have a significant impact on turnover growth. As mentioned above, hypothesis 5 states that personal competencies are perceived as more important by start-ups than by established companies and this perception has been supported by the data. This approach can also be supported by existing literature. On the contrary, the regression shows that personal competencies have a negative impact on turnover growth of start-ups whereas leadership competencies have a positive impact. This result indicates that leadership competencies can help to grow turnover and entrepreneurs have to implement leadership structures earlier than they would consider them to be relevant. That means that given structures where the focus is on the entrepreneurs' personal competencies have to be replaced before they are not suitable for new challenges a growing organization has to face. A new organizational and leadership structure is needed to delegate business tasks and support entrepreneurs. The result of this study indicates that a start-up with a strong focus on the personality of a particular entrepreneur, in different stages of its development, is likely to experience a leadership crisis which can be prevented by changing the focus and by implementing a new organizational and leadership structure before problems arise. Nevertheless, it should be emphasized that without the personal competencies of an entrepreneur, no start-up could be established and built up successfully. After all and to conclude, the path of a successful entrepreneur is likely to lead from personal to leadership competencies.

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Podjetnikov razvoj od osebnih do vodstvenih kompetenc

Povzetek: Razprava temelji na raziskavi, ki proučuje relevantnost managerskih kompetenc v avstrijskih organizacijah s poudarkom na novoustanovljenih podjetjih. Raziskava, pa tudi obstoječa literatura, potrjuje, da veljajo osebne kompetence, kot so ambicioznost, samozavest ali odločnost pri novoustanovljenih podjetjih za pomembnejše kot pri že uveljavljenih podjetjih. Toda nadaljnji rezultati razprave kažejo, da imajo pri razvoju rastočih novoustanovljenih podjetij vodstvene kompetence še posebej veliko vlogo, medtem ko postajajo osebne kompetence čedalje manj pomembne in imajo lahko celo negativni učinek na rast prihodka. V splošnem v članku razpravljamo o posebnih značilnostih posameznih skupin kompetenc pri novoustanovljenih podjetjih in proučujemo razlike in podobnosti v primerjavi z uveljavljenimi podjetji. Kot smo nakazali, dokazi vodijo k drugačnim in presenetljivim obravnavam za podjetnike in rastoča novoustanovljena podjetja.

Ključne besede: skupine kompetenc, podjetništvo, novoustanovljeno podjetje