A COMPARATIVE ANALYSIS OF MANAGERIAL COMPETENCIES BASED ON EVIDENCE FROM SATU MARE COUNTY, ROMANIA

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Abstract

The paper explores the managerial competencies of human resources in the companies from Satu Mare County, by comparing the employers' and employees' views. The comparison is based on data collected and processed within the project HURO/0901/264/2.2.2 implemented in partnership by "Vasile Goldiş" Western University and University of Debrecen and financed by European Union through ERDF under Hungary-Romania 2007-2013 Programme, in 2012, and on data collected and processed in 2013-2014, in a new field research applied to employees from Satu Mare county.

Key words: human resources, human capital, managerial competencies, work behaviour **JEL Codes**: J24, J29

Introduction

The concept of competency is placed in the centre of human resources management and is directly linked to the fundamental scope of strategic human resources management, to develop highly competent personnel, willing to attain its objectives and able to maximize the contribution to the company's goals (Armstrong, 2003: 273).

Managerial competencies are critical for business success and are used in the daily business practice as driven forces for performance on the market and to reach the company's goals in the nowadays turbulent business environment.

Employers have an own vision on the exercise by themselves of these competencies, while employees' perception of the managerial competencies' use in the companies where they are working could be very different. The difference is mainly generated by the different positions in the company's hierarchy and in the labour market. In same time, the views could be similar, due to the work experiences or lessons learned by both, employers and employees.

The aim of the paper is to compare the use of managerial competencies as it is resulted from the investigation of employers' and employees' opinion from Satu Mare County.

The paper is organized as follows: the theoretical framework is defined in the first section and the methodology of the study is described in the third section. The

main findings are exposed in the fourth section and the final section is dedicated to Conclusions.

1. Literature review

In everyday language, competency is the individual ability to perform a task (Oxford Dictionary, 2012).

McClelland first introduced in 1973 the competency concept, in the context of proposing to test for competency rather than for intelligence.

According to McClelland (1973), competencies could be best described as an iceberg with a person's knowledge and skills representing the visible tip of iceberg, while underlying and enduring personal characteristic or self concepts, traits and motives (for example, self-confidence, initiative, empathy, achievement orientation, etc.) which represent the larger portion of the iceberg, hidden below the waterline.

Competencies are defined as the underlying characteristics of an individual that are causally related to criterion-referenced reference and/or superior performance in a job or situation (McClelland, 1973) and the capacity that exists in a person that lead to behaviour that meet the job demands within parameters of organisational environment and that in turn brings about desired results (Boyatzis, 1982, 2008) and the characteristic features of individual to perform best in a given situation (Spencer&Spencer, 1992, 1993).

The personal characteristics that facilitate high performance include motivation, disposition, self-image, values, moral standards, norms of social behaviour, and traits as communication, general reasoning and learning capabilities (Bergenhenegouwen et al., 1996; Rothwell and Lindholm, 1999).

The concept of competency is describing essential human knowledge, attitudes, and skills at work; it is focused on the relation between person and work (Sandberg, 2000). Competencies are assumed to be recognizable, assessable, and relevant for practice (Caird, 1992).

Competencies are components of a job, which are reflected in behaviour that are observable in a workplace. The common elements most frequently observed are knowledge, skills, abilities, aptitudes, personal suitability, personal suitability behaviour and impact on performance at work.

Campion et al. (2011) pointed out that competencies are more than a simply list of knowledge, skills, abilities and other characteristics. Some competencies include also pro-social behaviours, such as organisational citizenship behaviours contributing to organisational performance.

Competencies and competency taxonomies are the basic components of what is called "competency management". Competency management is referring to the use of the competency concept and of the results of competencies analysis, in order to document and improve the employees' recruitment, selection, development and rewarding processes (Armstrong, 2003).

In defining the managerial competencies, the human resource literature pointed out that there is distinction between competency and competence. According to

Boyatzis (1982), managerial competencies are characteristics that are causally related to effective and/or superior job performance and an individual's performance is assessed in terms of specific action or behavioural indicators. British researchers (Constable and McCornick, 1987; Handy, 1987) introduced standards for managers in specific industries reflecting the expectations of their workplace performance. In this view, managers are assessed on set tasks with clearly standards termed as "competences" different from the individuals' competencies.

According to Spencer and Spencer (1993), managerial competencies are a specialized subset of the competencies, expressing the intention to have certain specific effects. These specific intentions are particularly important for managers. Hogg (1993) adds that managerial competencies lead to the demonstration of skills and abilities, which result in effective performance within an occupational area. Chong (2013) found that managerial competencies associated with organizing, planning, motivating others are significant in the career-advancement and they are broadly similar in importance across cultural environments.

Managerial competencies are activities, knowledge, skills or attitudes and also personal characteristics necessary to improve management performance. Additionally, the literature also identifies other components of managerial competencies which also contribute significantly to career success, such as: leadership, crisis management, problem-solving, customer focus (Horng et al., 2011).

According to Bergenhenegouwen (1996), managers must posses a range of personal competencies as well as task-specific competencies for effective job performance. Cheng, Dainty and Moore (2005) propose that in addition to competencies and competences, managerial performance also requires the assuming of a role which emerges through social interaction with others at work.

In the vast human resources literature, managerial competencies are associated with the organizational roles played by managers. For example, the "competing value framework" (adopted by Ancarani et al., 2009; Belasen & Frank, 2008) reflects the roles played by managers at different levels. Several studies document that managers need to play roles, often contradictory, in order to accomplish organisational goals (Quinn & McGRath, 1985; Quinn &Rohrbaugh, 1981, 1983; Faerman et al., 2000) and need to maintain the focus on rules, procedures, and internal processes and, at the same time, keep the organisational structure and procedure flexible and adaptive to environmental changes. Proponents of the "competing value framework" argued that managers need to perform eight different roles: mentor, facilitator, monitor, coordinator, director, producer, innovator, and broker (Quinn, 1988).

Boyatzis (2008) makes a distinction between threshold clusters of competencies (expertise and experience, knowledge, an assortment of basic cognitive competencies) and the clusters of competencies differentiating outstanding from average performers (cognitive competencies, emotional intelligence competencies, social intelligence competencies).

Shirazi and Mortazavi (2009) found that responsiveness, pro-activeness, effective communication, team building, negotiation and decisiveness are the main characteristics of an effective manager.

As a conclusion of the above overview of the relevant literature, managerial competency profile is determined by **individuals' characteristics**, **job tasks** and **roles** that are required for normal and superior performance.

For the purpose of our study, by managerial competencies we understand a mixture of *functional* competencies (decision taking, strategy setting) and *behavioural competencies* (relationships, leadership, learning from own errors, capacity to motivate, influencing of others, focus on results and processes, ethical behaviour) which were investigated in the practice of employers from Satu Mare county and compared with the view of employees regarding the use of them.

3. Methodology of the study

The study is based on data collected in two surveys. A first part of data was collected during the implementation of the project entitled "The impact of human capital quality on social and economic cohesion in the border area", HURO/0901/264/2.2.2 carried out by the "Vasile Goldiş" Western University of Arad in partnership with the University of Debrecen, co-financed by the European Union trough the ERDF under the 2007-2013 Hungary-Romania Cross Border Cooperation Programme. Within this project, a research was conducted by experts from the two universities regarding the human capital in the border area and its impact on economic and social development. The field component of this research included an inquiry based on a questionnaire applied to a number of 114 organisations from the counties of Satu Mare and Bihor. The questionnaire had 61 items regarding various aspects of human resources and their human capital in these organisations and was applied to *employers* from the target area. As followup of the project, another field research was conducted in 2013-2014 with the same instrument but addressed this time to the *employees* of Satu Mare County. They were coming from the same 75 companies interviewed in the first survey. The second part of the used data in the present paper is coming from this late survey.

The 75 surveyed companies located in Satu Mare are active in the following activity sectors (NACE 2): Agriculture, forestry and fishery(4,5%), Manufacturing (8%), Electricity (4%), Constructions (4%), Trade and car repair(3,5%), Transport and storage (5,5%), Hotels and hospitality services (3,5%), Informational and communicational technologies (ICT) (4%), Financial activities/insurances (3,5%) scientific/technical activities(3,5%), Public administration, defence and social insurances(12%), Education (12%), Health and social assistance (6,5%), Arts and leisure(4%), Mining and quarrying (1%), Production/services for own consumption (8,5%), Other services (12%). 32% of the surveyed companies were small enterprises (5-9 employees) and 68% were small and medium.

For the purpose of the present study it was selected from the questionnaire only the item related to managerial competencies: *Which are the competencies specific to*

your employees, by their intensity? The intensity of use of managerial competencies was assessed through a scale, from *1-weakly* to *5-very intensively*. The scaled managerial competencies are listed in the Table 1.

Table 1

	The list of managerial competencies					
	Variables					
K1	leadership					
K2	relationships development and maintaining					
K3	focus on results and processes					
K4	ability to motivate					
K5	learning from own errors					
K6	influencing others					
K7	decisions taking					
K8	strategy setting					
K9	ethical behaviour					

According to our previous findings, related to the employers' opinion regarding the human resources and human capital they work with, we assume in our present survey the following hypotheses:

(1) the employers' and employees' views are significantly different regarding the intensity of use of managerial competencies;

(2) the employers' 'view regarding the intensity of use of managerial competencies, is not differentiated by economic sector;

(3) the employees' perception on the intensity of use of managerial competencies is linked to the economic sector.

In our study, we have the following objectives: (i) to compare the views of employers and employees regarding the use of managerial competencies in their companies and explain the differences and (ii) to verify the validity of the above hypotheses.

The data were processed by SPSS soft.

In order to find out whether there is an significant association between respondents' answers and the status which they have on the labour market, the chi-square independence test was used.

In order to verify if there is a significant difference between activity sectors regarding the frequency of using these instruments, in the view of employers and employees, the ANOVA test was used.

4. Main findings

4.1. Differences in employers' and employees' perception

As we notice from the values of mean scores calculated for each competency, employees are not valuing at the same level the managerial competencies, all values assigned by them are lower than those of employers (Table 2). The general

mean score assigned by employees (3,78) is lower than that assigned by employers (4,24). This finding suggests that employees are seeing the managerial competencies exercised by their employers at little bit differently. They consider the use of managerial competencies by their employers not as intensively as employers themselves think.

Table 2

Comparison between employers' and employees' view regarding the use of
managerial competencies

manageriar competencies						
	Mean scores employers	Mean scores employees	Gap			
K1	4,28	3,55	0,73			
K2	4,47	3,94	0,53			
K3	4,3	3,72	0,58			
K4	4,16	3,76	0,40			
K5	4,15	4,07	0,08			
K6	3,78	3,48	0,30			
K7	4,19	3,93	0,26			
K8	4,2	3,73	0,47			
K9	4,6	3,88	0,72			
General mean scores	4,24	3,78	0,46			

Source: extract from SPSS Report

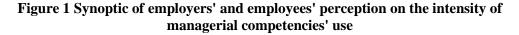
In spite of this identified difference, when we test the statistical association between the mean scores for the 9 managerial competencies, we found a very strong correlation (0,77 is Pearson correlation coefficient) statistically validated through Anova test, for a significance threshold of 0,05. The importance assigned by employers to the intensity of use of several managerial competencies evolves strongly linked to that assigned by employees. Generally speaking, our first hypothesis is not confirmed, but we analyse further each variable.

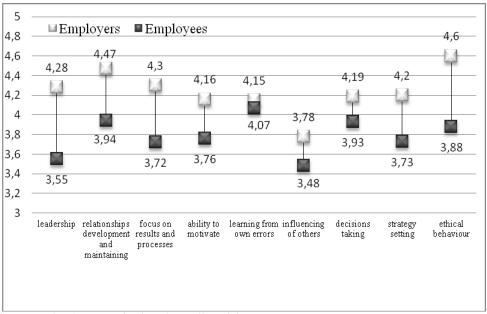
The views of employers and employees are very different when we speak about managerial competencies related to *focus on results and processes* (K3) and *influencing of others* (K6). For employees, the use of such competencies is not as obvious as employers are thinking. As we can see in the Table 2, the highest gaps are registered for K3-*focus on results and processes* and K6-*influencing of others*.

The lowest gaps are registered for *K8-strategy setting* and *K5-learning from own errors*. This means an almost unified employees' and employers' vision regarding the use of these competencies in their companies.

K9-Ethical behaviour is the best valuated by employers as well as by employees.

As we can notice in the Figure 1, the ranking of managerial competencies according to their intensity frequency of use is similar for employers and employees. Learning from own errors, relationships and communication maintaining, decisions taking, followed by ethical behaviour, ability to motivate, focus on results and processes, leadership and influencing of others.





Source: authors' computation based on collected data

We use, further, the chi-square independence test in order to find out whether there is an association between respondents' answers and the status which they have on the labour market. The null hypothesis is that the variables are not associated: in other words, they are independent.

We note that, in the case of the chi-square test of independence, the number of degrees of freedom (df) is equal to the number of columns in the table minus one multiplied by the number of rows in the table minus one. We select $\alpha = 0.05$ and we find the critical value of $\chi^2_{0.05:3} = 7.81$, with df=(4-1)(9-1)=24.

According to the results displayed in the Table 2, perception of employers and employees are significantly associated regarding the use of *leadership*, *relationship* development and maintaining, focus on results and processes, strategy setting and ethical behaviour.

Table 2

Results of chi-square test for the association between employers and employees' perception

	1-2			5		Significance of association
	weakly	3	4	very intensively	TOTAL	between employers' and
K1.Leadership	used			used		employees' perception
Employers	9	6	42	56	113	$\chi^2_{statistic} = 32,62$
Employees	41	58	66	65	230	
Total	50	64	108	121	343	$\chi^2_{0,05;3} = 7,81$

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K2.Relationship	1-2			5		Significance of association
development	weakly	3	4	very intensively	TOTAL	between employers' and
and maintaining	•	č	-	used	101111	employees' perception
Employers	3	13	25	72	113	$\chi^2_{statistic} = 18,94$
Employees	30	36	69	95	230	
Total	33	49	94	167	343	$\chi^{2}_{0,05;3} = 7,81$
1000		.,		207	0.0	
K3.Focus on	1-2			5		Significance of association
results and	weakly	3	4	very intensively	TOTAL	between employers' and
processes	used	Ũ		used	TOTIL	employees' perception
Employers	4	15	36	58	113	
Employees	30	57	76	67	230	$\chi^2_{statistic} = 21,96$
Total	34	72	112	125	343	$\chi^{2}_{0,05;3} = 7,81$
Total	54	12	114	125	545	
	1-2			5		Significance of association
K4.Ability to	weakly	3	4	very intensively	TOTAL	between employers' and
motivate	used	3	-	used	IUIAL	employees' perception
	-	12	51	43	113	
Employers	6	13				$\chi^2_{statistic} = 13,81$
Employees	33	50	78	69	230	$> \chi^2_{0,05;3} = 7,81$
Total	39	63	129	112	343	700,05,5
[[1	-	r	
	1-2	•		5	TOTAL	Significance of association
K5. Learning	weakly	3	4	very intensively	TOTAL	between employers' and
from errors	used	10		used		employees' perception
Employers	7	19	37	50	113	$\chi^2_{statistic} = 2,21$
Employees	18	47	59	106	230	$^{<}\chi^{2}_{0,05;3} = 7,81$
Total	25	66	96	156	343	$\chi_{0,05;3} = 7,81$
			r	-		
Кб.	1-2			5		Significance of association
Influencing of	weakly	3	4	very intensively	TOTAL	between employers' and
others	used			used		employees' perception
Employers	12	33	36	32	113	$\chi^2_{statistic} = 7,47$
Employees	49	52	78	51	230	$\chi^2_{0.05:3} = 7,81$
Total	61	85	114	83	343	$\chi_{0,05;3} = 7,81$
·,						
	1-2			5		Significance of association
K7.Decision	weakly	3	4	very intensively	TOTAL	between employers' and
taking	used			used		employees' perception
Employers	7	17	36	53	113	$\chi^2_{statistic} = 4,53$
Employees	27	46	63	94	230	
Total	34	63	99	147	343	$^{<}\chi^{2}_{0,05;3} = 7,81$
	1-2			5		Significance of association
K8.Strategy	weakly	3	4	very intensively	TOTAL	between employers' and
setting	used			used		employees' perception
Employers	5	20	35	53	113	$\chi^2_{statistic} = 13,50$
Employees	38	46	72	74	230	
Total	43	66	107	127	343	$\chi^{2}_{0,05;3} = 7,81$
			•	•		
	1.0			5		Significance of association
	1-2					
K9.Ethical	1-2 weakly	3	4	very intensively	TOTAL	
K9.Ethical behaviour	weakly	3	4	very intensively used	TOTAL	between employers' and
behaviour	weakly used			used		between employers' and employees' perception
behaviour Employers	weakly used 3	4	27	used 79	113	between employers' and employees' perception $\chi^2_{statistic} = 33,74$
behaviour	weakly used			used		between employers' and employees' perception

Source: authors' computation based on collected data

There is no significant association between employers and employees when we speak about *learning from errors, influencing of others and decision taking* (Table 2). Their opinions on the use of these managerial competencies are independent each from another.

4.2. Differences of employers' and employees' perception, by economic sector

In the Figure 2 we see that in the following economical sectors: Financial activities and IT, employers registered the highest scores and the lowest are recorded in Health and social assistance, Production/services for own consumption and Public administration.

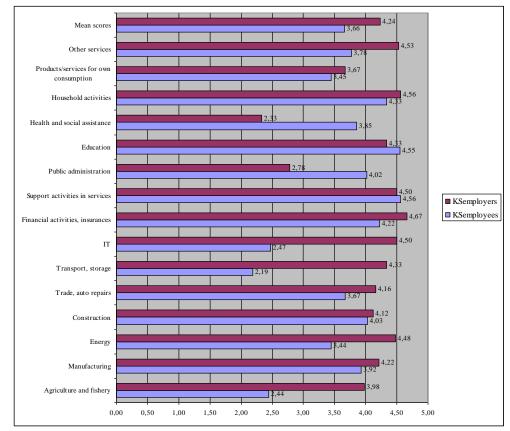
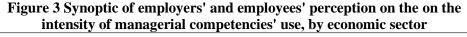


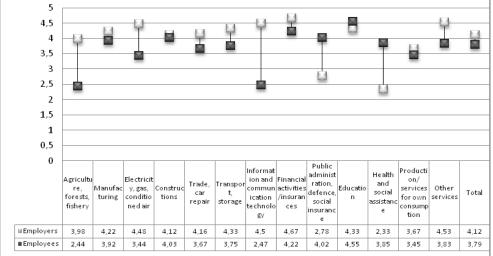
Figure 2 Mean score of managerial competencies, by activity sector

Source: authors' computation from collected data

The scores of employees are generally lower for all activity sectors. The lowest level of managerial competencies use is recorded in Transport and storage and Agriculture sector. For employees, the highest values are registered in Support activities and Education sectors. The highest gap between the employers and

employees views is registered for IT and Transport sectors, where the difference is higher than 2 points. The views are very closed in Support activities, Household activities, construction sectors.





Source: authors' computation from collected data

We intend to find out if there are significant differences between activity sectors as regards to the intensity level of use of various managerial competencies by using the Anova test.

Employers' view (Annex 1a and 1b-employers) is moderated linked to the economic sector, but none of variables (K1-K9) are significantly associated with the economic sector where the company is located. Our second hypothesis is confirmed.

In the case of employees' (Annex 2a and 2b -employees), their view is moderated linked to the economic sector, and all variables (K1-K9) are significantly associated with the economic sector, except *K6-influencing of others*. This variable is not influenced by the economic sector. Generally speaking, the third hypothesis of our study is confirmed, for only one variable (influencing of others) the hypothesis cannot be confirmed.

5. Conclusions

The paper aimed to compare the use of managerial competencies, as it is resulted from the investigation of employers' and employees' views from Satu Mare County and to verify 3 hypotheses related to the differences and similarities in the employers' and employees' views.

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One of the first conclusions is that employees consider the use of managerial competencies by their employers not as intense as employers themselves think.

The views of employers and employees are very different when we speak about managerial competencies related to focus on results and processes (K3) and influencing of others (K6). Their perception are much closed regarding K8-strategy setting and K5-learning from own errors.

From statistical point of view, perception of employers and employees are significantly associated regarding the use of *leadership*, *relationship development* and maintaining, focus on results and processes, strategy setting and ethical behaviour and their opinions are independent when we speak about *learning from* errors, influencing of others and decision taking.

We found also a significant differentiation across activity sectors for employers as well as for employees. In soft industries as ICT, scientific activities, arts and leisure the managerial competencies are very well valuated in practice, while in public sectors (public administration, health and insurances) and agriculture they have a low intensity of use.

We found that for employers as well as for employees, the most valuated managerial competency is the *ethical behaviour*. This convergence of employers and employees' view suggests a common vision on the way to conceive and do business in the region.

For employees the economic sector where the company is located is an important factor differentiating their views, while all employers are thinking similarly, regardless of the economic sector where they are active.

We believe that our findings are useful for business environment by giving this comparative perspective of employers and employees. The fact that they are thinking similarly on the use of managerial competencies raises could be taken as an advantage in aligning the business goals to the employees' expectations. Furthermore, the fact that employees are differentiating the managerial competencies by economic sector raises for employees the need of adapting their management strategies and tools to the economic sector where they are activating.

As further directions of research, we think that a deepening analysis of what employers are thinking on the support of employees in business goals' achieving could be developed based on our findings.

References

- 1. Ancarani, A., Di Mauro, C., & Giammanco, M. D., 2009, "How are organisational climate models and patient satisfaction related? A competing value framework approach", *Social Science & Medicine*, 69, pp.1813-1818.
- 2. Armstrong, M. (trad.), 2003, *Managementul resurselor umane: Manual de practică*, Editura Codecs, București.
- 3. Belasen, A., & Frank, N., 2008, "Competing values leadership: Quadrant roles and personality traits", *Leadership & Organization Development Journal*, 29, pp. 127-143.

- Bergenhenegouwen, G.J., ten Horn, H.F.K, and Moojiman, E.A.M., 1996, "Competence Development: A Challenge for HRM Professionals: Core Competencies of Organizations as Guidelines for the Development of Employees", *Journal of European Industrial Training*, 20(9), pp.29-35.
- 5. Boyatzis, R. E., 1982, *The Competent Manager: A Model For Effective Performance*, New York: Wiley.
- 6. Boyatzis, R.E., 2008, "Competencies in the 21 st Century," *Journal of Management Development*, vol. 27 (1), p. 5 12.
- 7. Caird, S., 1992,"Problems with the identification of enterprise competences and the implication for assessment and development", *Management Education and Development*, 23, pp. 6–17.
- 8. Campion M.A., A.A. Fink, B.J. Ruggeberg, L. Carr, G.M. Phillips and R.B. Odman, 2011, "Doing Competencies Well: Best Practices in Competency Modeling," *Personnel Psychology*, vol. 64(1), p. 225-262.
- 9. Cheng M, Dainty ARJ, Moore DR., 2005, "Towards a multidimensional competency-based managerial performance framework : a hybrid approach", *Journal of Management Psychology*, 20(5/6), pp.380-397
- Chong E., 2013, Managerial Competencies and Career Advancement: A Comparative Study of Managers in Two Countries, *Journal of Business Research*, 66, pp.345-353.
- 11. Constable CJ, McCormick R., 1987, *The making of British managers*, London: British Institute of Management & Confederation of British Industry.
- 12. Faerman, S. R., Quinn, R. E., Thompson, M. P., & McGrath, M. R., 1990, *Supervising New York State: A framework for excellence*. Albany, NY: Governor's Office of Employee Relations.
- 13. Handy C., 1987, *The making of managers*, London: Manpower Services Commission, National Economic Development Office & British Institute of Management.
- 14. Hogg, B., 1993, "European Managerial Competencies", *European Business Review*, 93 (2), pp.21-26.
- 15. Horng, J. S., Hsu, H., Liu, Ch. H., Lin, L. & Tsai, Ch. Y., 2011, "Competency Analysis of Top Managers in the Taiwanese Hotel Industry", *International Journal of Hospitality Management*, 30, pp.1044-1054.
- 16. McClelland, D. C., 1973,"Testing For Competence Rather Than For "Intelligence", *American Psychologist*, 28, pp.1-14.
- 17. Oxford Dictionary, 2012, Definition of competence. (http://oxforddictionaries.com/definition/competence?q=competency
- Rothwell,,W.J., and Lindholm, J.E., 1999, "Competence identification, Modelling and Assessment in the USA", *International Journal of Training and Development*, 3 (2), pp.90-105.
- 19. Sandberg, J., 2000,"Understanding human competence at work: an interpretative approach", *The Academy of Management Journal*, 73, pp.9–25

- 20. Spencer, L. M., McClelland, D. C., and Spencer, S. M., 1992, *Competency Assessment Methods: History And State Of The Art*, London: Hay/McBer Research Press.
- 21. Spencer, L. M., and Spencer, S. M., 1993, *Competence At Work*, New York: Wiley.
- 22. Shirazi, A. and Mortazvi S., 2009,"Efective management performance: a competency based perspective", International Review of Business Research Papers, Vol.5, No.1, pp.1-10.
- 23. Quinn, R. E., & Rohrbaugh, J., 1981,"A competing values approach to organizational effectiveness", *Public Productivity and Management Review*, 5, pp.122-141.
- 24. Quinn, R. E., & Rohrbaugh, J., 1983,"A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis", *Management Science*, 29, pp.363-377.
- 25. Quinn, R. E., 1988, Beyond rational management: Mastering the paradoxes and competing demands of high performance, San Francisco, CA: Jossey-Bass.
- 26. Quinn, R. E., & McGrath, M. R., 1985, "The transformation of organizational culture: A competing values perspectives, In: P. J. Frost, L. F. Moore, M. R. Louis, C. C. Lundberg, & J. Martin (Eds.), *Organizational culture*, Beverly Hills, CA: Sage.

Annex 1a The Anova test- for the correlation between activity sector and then intensity of use of management competencies -employers-

			ANOVA Tab	-		_	
	1		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	(Combined)	24,004	16	1,500	2,218	,009
K1 * KS	Within G	roups	64,934	96	,676		
	Tota	1	88,938	112			
	Between Groups	(Combined)	17,940	16	1,121	1,986	,022
K2 * KS	Within G	roups	54,202	96	,565		
	Tota	1	72,142	112			
	Between Groups	(Combined)	17,816	16	1,114	1,621	,078
K3 * KS	Within G	roups	65,954	96	,687		
	Tota	1	83,770	112			
	Between Groups	(Combined)	20,416	16	1,276	2,160	,011
K4*KS	Within Groups		56,717	96	,591		
	Total		77,133	112			
	Between Groups	(Combined)	23,429	16	1,464	1,980	,022
K5*KS	Within Groups		71,013	96	,740		
	Total		94,442	112			
	Between Groups	(Combined)	16,681	16	1,043	1,102	,364
K6*KS	Within Groups		90,788	96	,946		
	Total		107,469	112			
	Between Groups	(Combined)	23,800	16	1,488	2,042	,018
K7*KS	Within Groups		69,917	96	,728		
	Total		93,717	112			
	Between Groups	(Combined)	23,514	16	1,470	2,177	,011
K8*KS	Within G	roups	64,804	96	,675		
	Total		88,319	112			
	Between Groups	(Combined)	15,008	16	,938	2,043	,017
K9*KS	Within Groups		44,072	96	,459		
	Tota	Total		112			

Source: SPSS report (ANOVA test using SPPS soft)

Note: K1-K9 are vectors of the management competencies by activity sectors and KS is the vector of activity sector scores.

Annex 1b Measures of association between intensity mean scores (K1-K9) and sector scores (KS)

Measu	Measures of Association					
	Eta	Eta Squared				
K1*KS	,520	,270				
K2*KS	,499	,249				
K3*KS	,461	,213				
K4*KS	,514	,265				
K5*KS	,498	,248				
K6*KS	,394	,155				
K7*KS	,504	,254				
K8*KS	,516	,266				
K9*KS	,504	,254				

Source: SPSS report (ANOVA test using SPPS)

Note: K1-K9 are vectors of the management competencies by activity sectors and KS is the vector of activity sector scores.



Annex 2a The Anova test- for the correlation between activity sector and then intensity of use of management competencies -employees-

			ANOVA Ta	ble			
			Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	(Combined)	59,826	15	3,988	2,659	,001
K1 * KS	Within G	roups	64,934	321,048	214	1,500	
	Tota	1	88,938	380,874	229		
	Between Groups	(Combined)	40,320	15	2,688	2,131	,010
K2 * KS	Within G	roups	269,946	214	1,261		
	Tota	1	310,265	229			
	Between Groups	(Combined)	35,570	15	2,371	1,947	,020
K3 * KS	Within G	roups	260,622	214	1,218		
	Tota	1	296,191	229			
	Between Groups	(Combined)	54,916	15	3,661	3,514	,000
K4*KS	Within Groups		222,931	214	1,042		
	Total		277,848	229			
	Between Groups	(Combined)	45,219	15	3,015	3,094	,000
K5*KS	Within Groups		208,524	214	,974		
	Total		253,743	229			
	Between Groups	(Combined)	29,590	15	1,973	1,354	,173
K6*KS	Within Groups		311,801	214	1,457		
	Total		341,391	229			
	Between Groups	(Combined)	35,021	15	2,335	1,908	,024
K7*KS	Within Groups		261,866	214	1,224		
	Total		296,887	229			
	Between Groups	(Combined)	39,595	15	2,640	2,009	,016
K8*KS	Within Groups		281,227	214	1,314		
	Total		320,822	229			
	Between Groups	(Combined)	43,968	15	2,931	2,059	,013
K9*KS	Within G	Within Groups		214	1,423		
	Tota	1	348,591	229			

Source: SPSS report (ANOVA test using SPPS soft)

Note: K1-K9 are vectors of the management competencies by activity sectors and KS is the vector of activity sector scores.

Annex 1b Measures of association between intensity mean scores (K1-K9) and sector scores (KS) -employees-

Measures of Association					
	Eta	Eta Squared			
K1*KS	,396	,157			
K2*KS	,360	,130			
K3*KS	,347	,120			
K4*KS	,445	,198			
K5*KS	,422	,178			
K6*KS	,294	,087			
K7*KS	,343	,118			
K8*KS	,351	,123			
K9*KS	,355	,126			

Source: SPSS report (ANOVA test using SPPS)

Note: K1-K9 are vectors of the management competencies by activity sectors and KS is the vector of activity sector scores.