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## **DOCTORAL THESIS - SUMMARY -**

### **Employment of the graduate labour force and employers needs – components of quality management in higher education**

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2011

## SUMMARY: TABLE OF CONTENTS

THESIS TABLE OF CONTENTS .....	3
KEY WORDS .....	6
RESEARCH INTRODUCTION.....	6
LITERATURE REVIEW .....	11
METHODOLOGY AND RESEARCH RESULTS .....	21
Methodology and results of the pilot study .....	21
The methodology of the applied research on the employers' needs .....	24
Sampling method and data collection .....	24
Research results: employers' needs.....	26
Characteristics of the employment process .....	26
Employers satisfaction with the quality of the educational system.....	31
Factors influencing employers' needs.....	32
Perception of the standardization level of the higher education system and the selection process .....	32
Causes generating difficulties in young graduates employment .....	35
Testing the human capital and screening theory hypotheses .....	35
The value of the educational credentials in the selection process .....	35
CONCLUSIONS AND PERSONAL CONTRIBUTIONS .....	36
REFERENCES .....	41

## THESIS TABLE OF CONTENTS

List of figures

List of tables

### **Chapter 1: RESEARCH INTRODUCTION**

1.1. *Objectives and importance of the research*

1.2. *Plan of the research paper*

### **Chapter 2: LABOR FORCE AND THE CHARACTERISTICS OF HIGHER EDUCATION**

Introduction

#### **2.1. LABOR FORCE: CONCEPT, CHARACTERISTICS, COMPONENTS**

2.1.1. *Conceptual aspects of the labor force*

2.1.1.1. Labor force supply

2.1.1.2. Labor force demand

2.1.2. *Occupational structure: characteristics and evolution*

2.1.2.1. Occupations classification

2.1.2.2. Occupational standards

2.1.3. *Legislative requirements regarding employment*

2.1.4. *Analysis of the employment rates of graduate labor force – benchmark for the quality of higher education*

#### **2.2. HIGHER EDUCATION CHARACTERISTICS**

2.2.1. *Evolution trends of higher education*

2.2.1.1. Overeducation

2.2.2. *Features of higher education*

2.2.3. *Analysis of the population participation to higher education*

2.2.3.1. Graduate population by age group

2.2.3.2. Graduate population by field of study

#### **2.3. EXPLANATORY THEORIES FOR HIGHER EDUCATION-LABOR MARKET REALATION**

2.3.1. Human capital theory

2.3.2. Screening theory

2.3.3. Signalling theory

2.3.4. Credentialist theory

2.3.5. *Other explanatory theories*

Conclusions

## **Chapter 3: QUALITY MANAGEMENT AND CLIENT ORIENTATION IN HIGHER EDUCATION**

Introduction

### **3.1. QUALITY IN HIGHER EDUCATION**

- 3.1.1. *Quality: concept and perspectives*
- 3.1.2. *Evolution of quality topic in higher education*
- 3.1.3. *Approaches in higher education*
- 3.1.4. *Quality multidimensionality*

### **3.2. CONCEPTS AND MODELS OF QUALITY MANAGEMENT IN HIGHER EDUCATION**

- 3.2.1. *Product*
- 3.2.2. *Clients*
- 3.2.3. *Instruments, techniques and evaluation methods of quality from clients' perspective .....*
- 3.2.4. *Quality improvement*
- 3.2.5. *Models and principles of quality management in higher education*

### **3.3. EMPIRICAL STUDY: RELEVANT DIMENSIONS OF QUALITY FROM CLIENT PERSPECTIVES**

- 3.3.1. *Results obtained by studies regarding the quality dimensions from client perspective .....*
- 3.3.2. *Methodology and results of the study*

Conclusions

## **Chapter 4: ANALYSIS OF THE EMPLOYERS NEEDS REGARDING THE QUALITY OF THE LABOR FORCE**

Introduction

### **4.1. EMPLOYERS NEEDS AND OCCUPATIONAL SELECTION**

- 4.1.1. *Employers needs: concepts*
- 4.1.2. *Content of the selection process: stages, criteria and competences required by employers*
- 4.1.3. *Factors influencing the selection process*

### **4.2. RESEARCH METHODOLOGIES IMPLEMENTED IN EMPLOYERS NEEDS STUDIES**

- 4.2.1. *Surveys*
- 4.2.2. *Quality Function Deployment*
- 4.2.3. *Experimental studies based on hypothetical situations*

Conclusions

## **Chaper 5: EMPLOYERS NEEDS REGARDING THE LABOR FORCE QUALIFICATIONS**

Introduction, objectives and research hypothesis

### **5.1. PILOT STUDY ON EMPLOYERS NEEDS**

#### *5.1.1. Qualitative methodology on employers needs*

5.1.1.1. Objectives and research instrument

5.1.1.2. Sample of the qualitative stage of the pilot study

#### *5.1.2. Methodology of the quantitative stage of the pilot study*

5.1.2.1. Objectives quantitative research instrument

5.1.2.2. Sample of the quatitative stage of the pilot study

#### *5.1.3. Analysis and interpretations of research results*

### **5.2. METHODOLOGY OF THE APPLIED RESEARCH ON EMPLOYERS NEEDS**

#### *5.2.1. Research objectives, sample, and data collection*

#### *5.2.2. Sample of the employers*

#### *5.2.3. Quantitative reserach instrument: concept operationalisation*

### **5.3. RESEARCH RESULTS**

#### *5.3.1. Results regarding the employment process*

5.3.1.1. Recruitment methods

5.3.1.2. importance of the selection stages and criteria

5.3.1.3. Employers needs (factor analysis of the selection criteria)

5.3.1.4. Emplyment selection criteria

5.3.1.5. Employers' satisfaction regarding the quality of the labor force

#### *5.3.2. Analysis of the factors influencing employers' needs*

5.3.2.1. Employers' satisfaction regarding the quality of higher education and selection process

5.3.2.2. Higher education standardisation and the selection process

5.3.2.3. Company size and the selection process

5.3.2.4. Company performance and the selection process

5.3.2.5. Job characteristics and the selection process

#### *5.3.3. Relation between the selection process and employee turnover*

#### *5.3.4. Factors causing difficulties in young gradues' employment*

#### *5.3.5. Testing the hypothesis of the human capital and screening theories*

#### *5.3.6. The value of the educational qualification in the selection process*

Conclusions

## **Chapter 6: CONCLUSIONS AND PERSONAL CONTRIBUTION**

### *6.1.1. Personal contribution to the field knowledge*

### *6.1.2. Research implications for the quality management in higher education*

### *6.1.3. Research limits and future perspectives*

## **REFERENCES**

## **APENDIX**

## KEY WORDS

- **quality management, higher education, employers' needs, human resource selection, clients.**

## RESEARCH INTRODUCTION

More and more studies and statistical indicators show discrepancies between the needs of hiring companies and the qualifications of the graduates prepared by educational institutions. The requirements imposed by employers on the labor market have become a topic of general interest (Morley, 2001: 132). This quest is part of the efforts to continuously improve the quality of education, an objective that in order to be achieved requires the reporting to employers needs and to the dynamic economic environment. Starting from here it is legitimate to ask: Which is the competency profile of employable candidates? The present research is developed to answer in an analytical and scientific way to this question

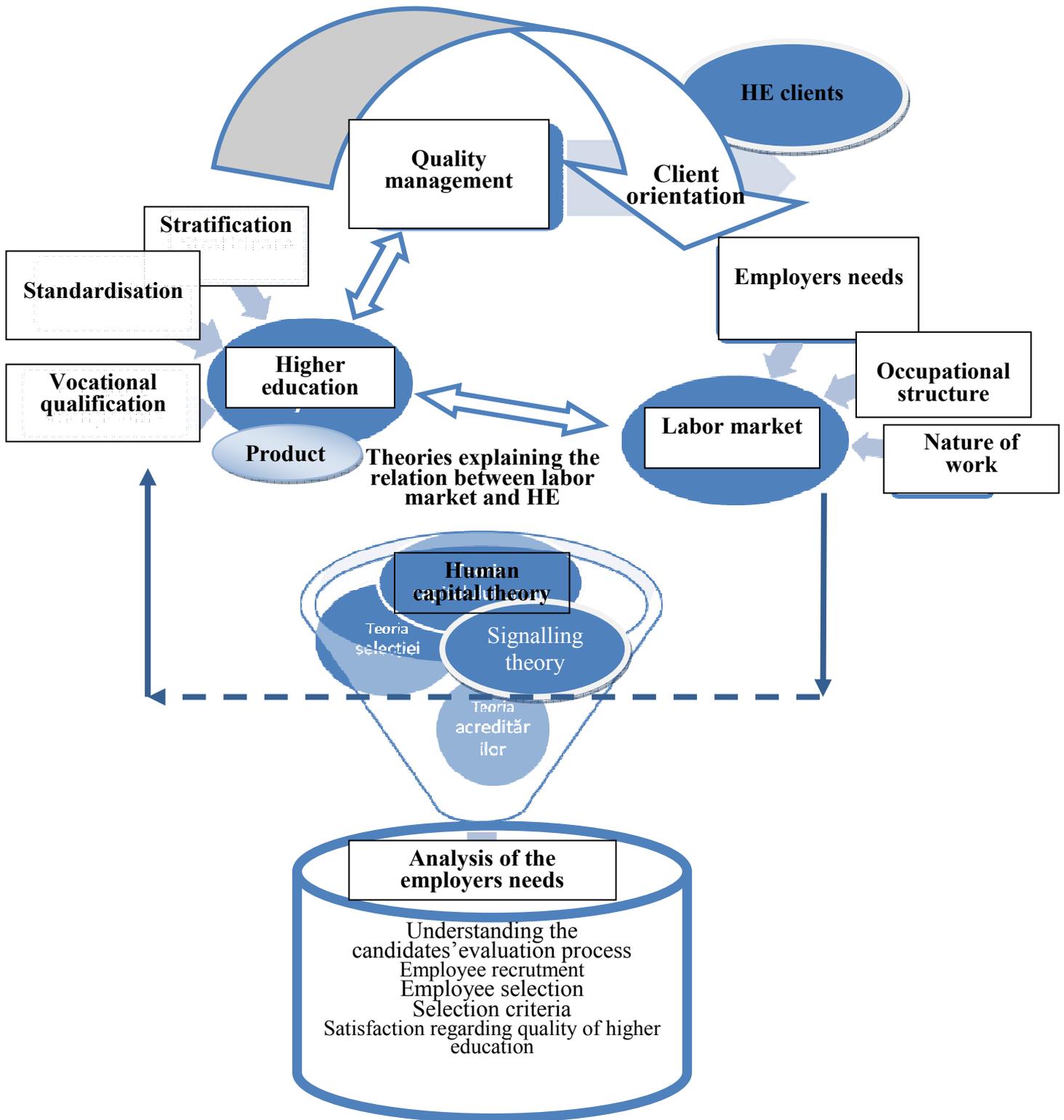
Regarding the theoretical foundation, we located the conceptual analysis undertaken in the context of **quality management system in higher education**. One of the most important goals of quality management system is to improve quality. A prerequisite for improving the quality process is to know and understand customers' needs. Given the plethora of reviews of higher education, we chose to approach employers' perspective, so we can analyze in depth their needs and expectations regarding the graduate workforce qualification.

In carrying out the work we started from the model proposed by Gilmore (2003), according to which for quality improvement is necessary to identify the factors that determine quality, to acknowledge the customers' expectations and understand how customers evaluate service quality in relation to their expectations.

The theme of this research required an interdisciplinary approach. Starting from the fundamental principles of quality management system on customer orientation, we valued the paradigmatic perspective of the theories explaining the relationship between the education system and labor market, deepening on the level of content, the human resources selection process. The latter is the binder of both worlds where opportunities for interaction needs to be continuously developed: the *higher education system* and the *labor market*.

To provide an overview of the research survey conducted and of the theoretical context which is based upon, we offer below a figure of the main approaches underlying this research (Fig. 1.1. Research conceptual scheme).

Figure 1 Conceptual scheme of research



## **Research objectives and importance**

The main objective of this research is to identify the criteria used by employing companies in the graduate selection process. In order to identify the main criteria that determine the company hiring decision, we have undertaken an analysis of the needs expressed by the employing companies regarding the graduate workforce qualification.

The specific objectives followed in the paper are situated on two areas: theoretical and applied.

On a theoretical level the main objectives are:

- (a) Identifying the competencies that define the profile of the preferred employable candidates;
- (b) Analysis of labor market characteristics on national level (size and function, occupational structure, legislative regulations, indicators of employment);
- (c) Analysis of the educational system (degree of standardization, stratification and vocational-specific, population participation to higher education) and the study of their manifestation in the Romanian higher education system;
- (d) Identifying the defining elements for the concept of quality in higher education and for the quality management (multi-dimensional nature of quality, quality improvement models);
- (e) Analysis of the main approaches and perspectives on quality in higher education.

On an application-level, the research conducted followed:

(a) Identify the employers' needs by analyzing the occupational characteristics of the selection process (stages of selection, selection criteria, the skills required by employers, the main areas of activity where employers have difficulty finding adequate qualified workforce, the necessary force employment fields);

(b) Validation of quantitative research tools for analyzing the training needs of companies employing highly educated workforce;

(c) Develop the profile of the candidate the companies prefer to hire;

(d) Identifying the factors that influence the needs of the employing companies (level of satisfaction with the quality of education, the company's financial performance, industry, labor force supply by industry);

(e) Identifying the differences in meaning of quality of the higher education results for four categories of customers: students, graduates, teachers and employing companies.

Next, we argue the necessity and importance of this research. In the literature there are numerous studies that have sought to identify the employers' needs. Whether they have been implemented at the institutional level (by educational institutions that have tried to monitor the labor market integration of their graduates) or internationally (through projects such as CHEERS, REFLEX), the existing studies are limited on a descriptive level. The conceptual framework of quality management system and human resource selection process is not

sufficiently exploited by the existing studies. Therefore, what this research brings is an interdisciplinary perspective. It proposes to analyze the employment process of higher education graduates from an interdisciplinary approach. Complementary to the descriptive dimension, this study is valuing the conceptual instruments of quality management and human resources selection field. It is also build upon the theoretical context of the relationship between education and labor market needs.

**(a) Empirical importance**

The relevance of the empirical research lies in the usefulness of the results obtained for more categories of stakeholders: the management of higher education institutions, students, graduates, university teachers and the management of hiring companies.

At national level, with the adoption of GO no. 75/12.07.2005 on quality assurance in education and ARACIS external evaluation methodology in higher education, quality of education becomes an issue of urgent concern. Imposition of national benchmarks regarding the quality of higher education covering the relationship with the labor market makes studies of this issue provide useful information to the management of educational institutions. Also, by the MECTS order no. 6012 of 21.11.2008 on the monitoring of labor market insertion of higher education graduates in Romania, it is confirmed that the objective is to increase the relevance of the educational system to employers' requirements. Even more, the introduction of employers and business perspective on the quality of graduates as indicators for external quality assessment enables the need for generation of practical fundamentals of quality management system in higher education.

At a conceptual level, through the applied research we gave highlighted the elements of conceptualizing the quality of higher education institutions from the perspective of four categories of clients: students / graduates, teachers and companies that employ higher education graduates. By comparing these perspectives there were emphasised the common elements of the four categories of stakeholders in defining and addressing the quality of higher education, but also aspects of differentiation. The analysis of the assessment process of candidates' competencies during the hiring decision has allowed identifying the areas in which the education system must focus on preparing students.

**(b) Scientific importance:** At a theoretical level, there was conducted an analytical approach to the study field and there were highlighted the specific concepts in quality management that can be transferred in the analysis of the human resource selection area. What this study is bringing concerns the application of a specific quality management model to the relationship between higher education and hiring companies, so as to identify the employers' main needs regarding the graduates' qualifications.

Besides the results obtained by classical descriptive studies that have examined the satisfaction of the employing companies, the present paper identifies key moderating variables that determine the criteria used by companies in the employment of highly educated labor.

Given these scientific and empirical arguments, the research aims to improve the quality of education by facilitating the understanding of the way companies perform the selection of the candidates, thus highlighting the main skills required on the labor market.

## LITERATURE REVIEW

The literature survey is done in the chapters 2, 3 and 4, which show the work and theoretical contributions to the improvement of specialized knowledge in the field.

### Chapter 2: Labor market and the characteristics of the higher education system

Based on the employment of higher education graduates (graduates' employability) as a component of the quality of education (Little, 2001), we performed an analysis of labor market characteristics and of the higher education system in relation to the employment phenomenon.

At the structural level in the second chapter we analyzed:

- (a) the labor market characteristics (size and function, occupational structure, legislative regulations, indicators of employment);
- (b) education system characteristics (degree of standardization, stratification and specific occupational / vocational, population participation to higher education);
- (c) employment indicators of graduate population;
- (d) explanatory theories of the relationship between education and employment.

To enable the deepening of the two components mentioned above, we provided an overview of existing statistical data from national and international level on population participation in higher education and employment.

We also performed an analysis of explanatory theories that address the educational system in relation to employment on the labor market. The presentation captures their *theoretical foundation*, the *methodological design* and the *limits* of each theory.

Education is one of the most important factors determining occupational structure (Shavit, Muller, 1998): companies exploit the educational qualification of the candidates in the selection of human resources, and individuals invest in their education to obtain a competitive advantage in the labor market. The dynamics of occupational structure is reflected directly in the labor market needs, and next to the employers' expectations are affecting the graduates' employment in the labor market (Ashenfelter, Layard, 1986: 22).

Without generalizing the causal relationship between employment and quality of the graduates (there are obviously other factors involved, such as economic development, technology, labor market characteristics, and personal characteristics of the graduates) we believe that the employment rate is an indicator of the quality of education. In this respect, educational institutions should regularly monitor the employment situation of their graduates, to identify the results their graduates have while integrating into the labor market. Following the constantly improvement of the quality of the education provided, the quality management

system in higher education puts more emphasis on results obtained by higher education graduates in the labor market (their employment becomes an essential part of it).

From a conceptual point of view, on a statistical level, the employment can be captured by several indicators: the active population, employment, ILO unemployed, activity rate, employment rate, unemployment rate.

Regarding the employment rate of higher education graduate population in Romania the situation is more favourable than the average for the European Union (27), but the young age population is a vulnerable category in the labor market.

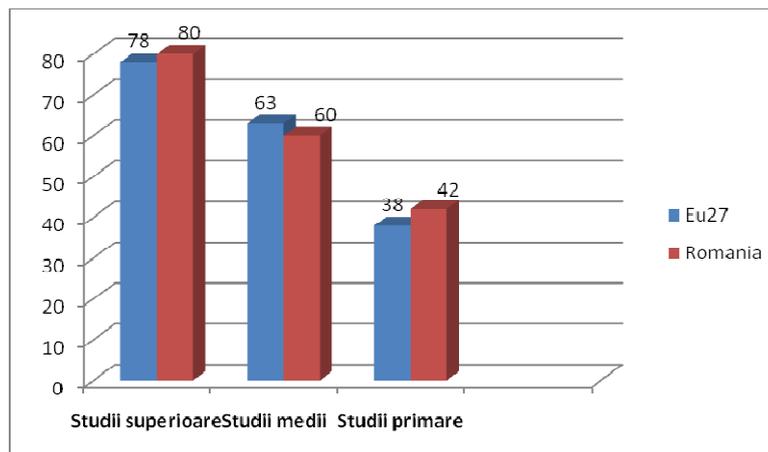


Figure 1 *Employment rate (%) according to the educational level (EU and Romania, 2010).*  
Source: Eurostat, 2011

In the literature there are numerous studies looking at the analysis of educational systems with reference in particular to the transition of graduates into the labor market outcomes. There have been highlighted a number of features of the education system, that allow the establishment of a relationship between the characteristics of the educational system and labor market outcomes of higher education graduates (Blanchflower, Freeman, 2000: 34): standardization, stratification, vocational specific.

In analyzing the association between the characteristics of education and employment, the literature offers many theoretical approaches that provide different explanations of the development prospects of the education system and its relationship with the labor market. Overall, there are two striking points of view (Ashenfelter, Layard, 1986: 150): human capital paradigm and the paradigm of sorting and accreditation.

Within these theoretical paradigms on the transition process, we can identify a number of theories explaining the relationship between educational qualification and the success of graduates in the labor market (Bills, 2003: 447): Human capital theory, Screening theory, Signalling theory, Credentials theory.

Table 1 *Theories explaining the relation between education and labor market outcomes*

<b>THEORY</b>	<b>AUTHORS</b>	<b>HYPOTHESIS</b>	<b>LIMITS</b>
<b>Human capital theory</b>	<ul style="list-style-type: none"> <li>▪ Gary Becker, 1967, 1993</li> <li>▪ Mincer, 1958</li> <li>▪ Husz, 1998</li> <li>▪ Teixeira, 2007</li> </ul>	<ul style="list-style-type: none"> <li>▪ Education develops competencies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Insufficient concept explanations;</li> </ul>
<b>Screening theory</b>	<ul style="list-style-type: none"> <li>▪ Arrow, 1973</li> <li>▪ Spence, 1973</li> <li>▪ Psacharopoulos, 1979</li> <li>▪ Bauer, Dross, Haisken-DeNew, 2005</li> <li>▪ Brown, 2005</li> </ul>	<ul style="list-style-type: none"> <li>▪ Education has the role to select, filter students according to their native potential.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The expansion of education reduces the explanation power of the theory;</li> </ul>
<b>Signalling theory</b>	<ul style="list-style-type: none"> <li>▪ Spence, 1974, 2002</li> <li>▪ Arkes, 1998</li> <li>▪ Rosenbaum, Miller, 1997</li> <li>▪ Teixeira, 2007</li> </ul>	<ul style="list-style-type: none"> <li>▪ By the means of their diplomas, candidates signal to employers their competencies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Studies show that employers do not use the signals of the diplomas;</li> </ul>
<b>Credential theories</b>	<ul style="list-style-type: none"> <li>▪ Berg, 1970</li> <li>▪ Illich, 1971</li> <li>▪ Collins, 1979, 2000</li> <li>▪ Boylan, 1993</li> </ul>	<ul style="list-style-type: none"> <li>▪ Education is important for the credentials it offers to graduates;</li> </ul>	<ul style="list-style-type: none"> <li>▪ Employment requirements also depend on the complexity of the vacant jobs;</li> </ul>
<b>Other theories</b>	<ul style="list-style-type: none"> <li>▪ Bowles, Gintis, 1976</li> <li>▪ Bourdieu, Passeron, 1977</li> <li>▪ Meyer, 1970</li> <li>▪ Piore, Doeringer, 1995</li> </ul>	<ul style="list-style-type: none"> <li>▪ Control theory</li> <li>▪ Cultural capital theory</li> <li>▪ Institutional theory;</li> <li>▪ Segmented labor market theory;</li> </ul>	<ul style="list-style-type: none"> <li>▪ Studies show that education eliminates inequalities;</li> <li>▪ Neglects the roles of education;</li> </ul>

### Chapter 3: Quality management and client orientation in higher education

This chapter clarifies on a conceptual level the notion of quality; shows the evolution of the quality concept, the main approaches to quality; the characteristics of quality management in the Romanian university system; the main quality improvement processes and principles that govern quality management system; the customer orientation and quality management in higher education. By the means of the implemented empirical studies is shows the multidimensional nature of quality in higher education, achieving a comparison between the perspective of students, teachers, graduates and employers with respect to defining the quality of the results of the higher education system.

*The product* is one of the cornerstones of a quality management system. In educational institutions the products may be intangible, represented by the knowledge developed through the educational process that can take different forms (Smith, 2008): graduates' competencies, the results of scientific research (which are exemplified by scientific publications, theories developed innovation), expertise and consultancy.

*The client* is represented by any person who is affected by the product or process that generates the product (Juran, Godfrey, 1998). Customers of higher education are a heterogeneous group, which needs to be addressed analytically. Customer satisfaction is the goal of quality management system that can be achieved through systematic attempt to meet customer needs.

The methods and tools for assessing and measuring service quality differs depending on the type of service evaluated, and on the specific characteristics of the concepts and customers involved or the context of the evaluation (Gilmore, 2003). Among the most common assessment tools and techniques there can be mentioned: assessment scales of the expectations, perceptions and customer satisfaction (SERVQUAL, SERVPERF), critical incident technique, observational studies, focus group discussions, and in-depth interviews.

Regarding the proposed models for the quality improvement and assessment (Becket, Brookes, 2008), organizations have a number of choices:

I. The option for a model-oriented on compliance with a set of minimum *standards* [the standards ISO 9001:2000, European standards, the guidelines (European Standards and Guidelines), ARACIS standards, total quality management].

I. The option to adopt an *excellence model driven* (such as EFQM, MBNQA). Although the adoption of a system of standards is widely shared, a new direction aimed more pronounced orientation for excellence.

III. Option to adopt a model developed for the education or certain areas of education (the Quality Management frame, EQUIS system, models for management schools EQUAL);

The analysis of the models reveals the patterns of central interest for this paper: *customer orientation* (especially hiring companies) and the importance of *educational outcomes* (including the quality of the higher education graduates).

One of the ways we can improve the quality of services and educational outcomes and in particular, the quality of the graduates, lies in the in-depth knowledge of employers needs and how they perceive quality. For this we considered it appropriate to achieve an empirical study to analyze which is the customer perspective on the defining elements for the quality of academic institutions.

**Research sample** - The instrument was distributed to groups of students from Babes-Bolyai University, to graduates, teachers and employers from the labor market. A total of 262 responses were obtained (86 responses from students, 53 responses from the employing companies, 68 teachers, and 55 graduates).

By the means of **factor analysis** we identified the following latent dimensions:

- *Professional orientation of the graduates qualification* (labour market tailored courses, employment support for students during their studies, professionalism orientated practical training of students, the linkages with the economic institutions);
- *The graduates qualification* (graduates honesty, theoretical qualification of the students, competitive graduates on the European labor market);
- *Quality assurance* (external accreditation, physical conditions, courses offered);
- *Selectivity of the education* (rigorous admittance system, in depth evaluation during exams, the quality of the teaching staff);
- *Historical tradition of the educational institution* (state university, historical institution);
- *The difficulty in passing exams*.

Here there are the results obtained for the four categories of customers.

Table 2 *Average importance of the dimensions representing the quality of higher education institutions (students, employers, graduates and teaching staff)*

What does it mean for you a quality HE institution?	Average score			
	Students	Employers	Teachers	Graduates
a) Historical and tradition university	3,76	4,02	3,39	3,86
b) Well prepared teaching staff	4,88	4,51	4,78	4,85
c) A rigorous admittance system	3,64	4,32	4,07	3,74
d) The possibility to easily get passing grades	3,52	1,53	1,51	1,78
e) Univ. where only good students are allowed to pass the exams	4,15	4,32	4,35	3,82
f) Competitive graduates on the European labor market	4,77	4,57	4,78	4,47

g) Good physical conditions for learning	4,15	3,58	4,10	4,09
h) State university	3,46	3,45	2,81	3,50
i) Courses adapted to the labor market requirements	4,39	4,54	4,22	4,74
î) Accredited university	4,35	3,83	4,51	4,71
j) Supporting students for having a job during studies	4,43	4,06	3,28	4,38
k) University with study programs in different languages	3,64	4,00	4,04	4,21
l) University preparing good professional graduates	4,02	4,67	3,82	4,81
m) University preparing honest graduates	4,77	4,06	4,85	4,26
n) University preparing well theoretical informed graduates	3,38	3,93	4,55	3,42
o) University preparing well practical prepared graduates	4,79	4,59	4,00	4,79
p) University with a large offer of courses	4,16	3,72	4,60	4,15
r) University in touch with the economical environment	4,43	4,58	4,03	4,41

We could identify the commonalities that have emerged in the definition of a high quality university from the perspective of the four groups. We note that the dimensions on which the four categories of customers are oriented to are largely aimed at: the level of the professional training, practical graduate students, orientation of the university institution to economic cooperation with companies from the labor market, quality of the teaching, to meet the quality standards in the accreditation system; providing courses adapted to the market demands.

These results confirm the hypothesis stating that the opinion of different classes of customers is influenced by the specific interests of each group. Comparing perspectives have highlighted the common elements of the four categories of customers in defining and addressing quality in higher education, but distinct issues that are perceived by them. A common element for the four categories of customer orientation is a product of the education system (training of graduate students), which led us to focus our research on the needs of employers.

These results confirm the hypothesis stating that the opinion of different categories of customers is influenced by the specific interests of each group. Comparing their perspectives the study has highlighted the common elements of the four categories of customers in defining and addressing quality in higher education. It also emphasised the distinct approaches that are perceived by them. A common element for the four categories of customer is the *orientation towards the product of the educational system* (quality of the of the higher education graduate), which led us to focus our research on the employers' needs regarding graduates skills.

#### Chapter 4: Analysis of the employers' needs regarding the graduates skills

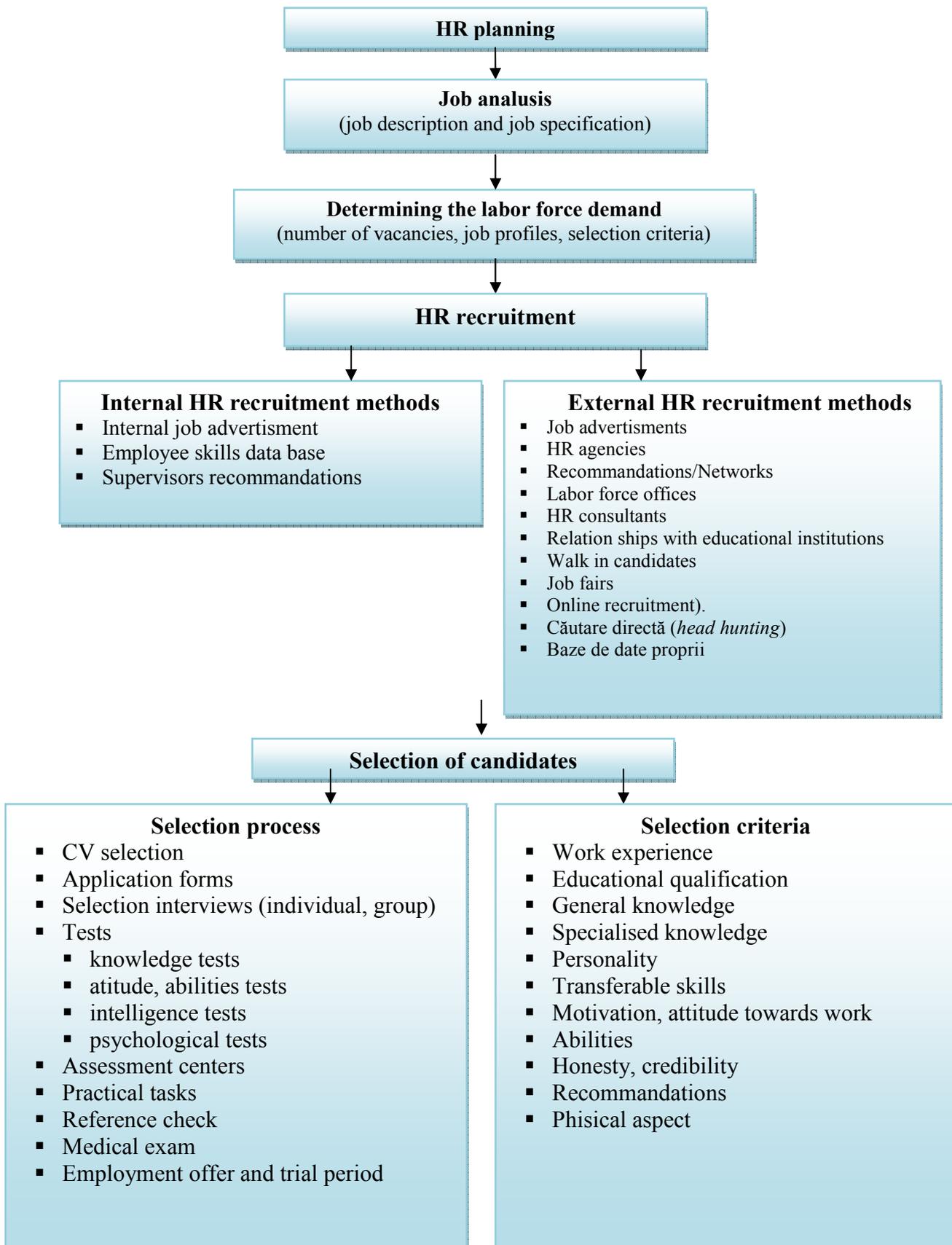
Given the importance of labor force quality for the competitiveness of small and medium enterprises (Bibu et al, 2008), it is necessary to know and understand the employers' needs, so that universities can prepare their workforce as required (Schomburg, 2000 Paul Murdoch, 2000, Weert, 2007). Most studies focused on the employers' needs, operationalised these needs through a range of issues, aiming to identify:

- *Demand for higher educated labor force* (the number of job requiring higher education);
- *Criteria implemented in the employee selection process;*
- *Skills required by the hiring companies;*
- *Employers' opinions and their satisfaction level regarding the quality of the graduates,*
- *The characteristics of the recruitment and selection process.*

In analyzing the employment process of higher educated graduates we focus on the process of human resources occupational selection. The employment selection process includes a number of components: indicators / criteria for hiring decision, stages and methods of obtaining necessary information about the candidates (which also includes the evaluation of candidates) and the actual selection decision (Brown, 1972, Milkovich, Boudreau, 1991).

Figure 2 Employers' needs: *relation between the labor demand, recruitment and selection*

Source: *Adapted from Ilies, Osoian, Petelean, 2005; Torrington, Hall, Taylor, 2008, Beardwell, Holden, Claydon, 2004.*



Studies that have examined occupational selection practices have identified the factors influencing the content of the selection process in organizations. There were studied both external factors and internal: the characteristics of national culture, industry, organization strategies, size, level of training of persons in charge of human resources and their preferences (Terpstra and Rozell, 1997, Terpstra and Rozell , 1993, Ryan, McFarland, Baron, Page, 1999, Belcheir, 2002, etc.). Thus, the selection process takes place in a context of internal and external influences (Beardwell, Holden, Claydon, 2004).

The main factors identified in the literature are related to job characteristics (type of work, job specification, selection criteria), the level at which the company is in the organization's development cycle, the company's financial performance, level of training and characteristics of those in charge with the selection, size of the firm, employers' preferences and their opinions regarding the quality of educational institutions, ownership of the company, the predictive value of screening methods, organizational culture and national characteristics.

Table 3 Study results regarding the factors influencing employment process

FACTORS	STUDIES	HYPOTHESIS	RESULTS
<b>Job characteristics</b>	<ul style="list-style-type: none"> <li>▪ EQWN Employer Survey (1994)</li> <li>▪ Wilk, Cappelli (2003)</li> <li>▪ Torrington, Hall, Taylor (2008)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The type of job influences the selection process.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Higher requirements for a job are associated with more selection stages.</li> </ul>
<b>Level at which the company is in the organization's development cycle</b>	<ul style="list-style-type: none"> <li>▪ Kochan, Barocci (1985)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The selection process varies according to the level at which the company is in the organization's development cycle.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Early stage – focus on external recruitment;</li> <li>▪ Development stage – focus on both external and internal recruitment;</li> <li>▪ Maturity/decline – less attention on recruitment.</li> </ul>
<b>Financial performance of the company</b>	<ul style="list-style-type: none"> <li>▪ Terpstra, Rozell (1997)</li> <li>▪ Beardwell, Holden, Claydon (2004)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Performing organizations use more frequent more expensive selection methods.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Performing companies use more assessment centres and selection tests.</li> </ul>
<b>Qualification of the HR recruiters</b>	<ul style="list-style-type: none"> <li>▪ Torrington, Hall, Taylor (2008)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Specialised recruiters use more validated selection methods.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Specialised recruiters use psychological tests and other validated methods.</li> </ul>
<b>Size of the company</b>	<ul style="list-style-type: none"> <li>▪ Stewart, Knowles (2000)</li> <li>▪ Beardwell, Holden, Claydon (2004)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Small companies rather use informal selection methods.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In small companies, industry-specific knowledge is more important in the initial screening stage, and work experience and creativity are more important in the final selection stage.</li> </ul>
<b>Recruiters preferences</b>	<ul style="list-style-type: none"> <li>▪ Willis, Taylor (1999)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Recruiters' preferences and their satisfaction with the quality of education influence the selection process.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Higher satisfaction level with the quality of education facilitates the selection process.</li> </ul>
<b>Ownership type</b>	<ul style="list-style-type: none"> <li>▪ Lewis, Shimerda, Graham (1983)</li> <li>▪ Smith, Ahadiat (1995)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Selection process is different in state and private companies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Public institutions use more frequent application forms and educational qualification of the candidates.</li> </ul>
<b>Predictive value of the selection methods</b>	<ul style="list-style-type: none"> <li>▪ Anderson, Shackleton (1993)</li> <li>▪ Schmitt, Chan (1998).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Predictive selection methods show the future more performing employees.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Job interviews and role plays are good predictors for the future performance of the candidates.</li> </ul>
<b>Organizational and national culture</b>	<ul style="list-style-type: none"> <li>▪ Shackleton, Newell (1997)</li> <li>▪ Ryan, McFarland, Baron, Page (1999)</li> <li>▪ Steiner, Gilliland (2001)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Different selection stages are implemented according to the organizational culture.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In high uncertainty avoidance culture tests and structured interviews are more frequent used.</li> </ul>

From a **methodological** point of view, the literature identifies the existence of numerous studies analysing employers needs: a). surveys carried out internationally (which are designed to deliver cross country comparison of selection methods and criteria used by employers), national and institutional level (surveys conducted by institutions to identify employers requirements in order to adapt the educational offer to their requirements), b). quality function deployment, c). experimental studies based on hypothetical situations.

## METHODOLOGY AND RESEARCH RESULTS

### Methodology and results of the pilot study

The empirical analysis of the employers' needs presented in the **Chapter 5** *Employers' needs regarding the qualification of the labor force*. *Applicative research* included **two research stages**:

**I. Pilot research:** which includes a qualitative stage, based on in-depth interviews with employers and a quantitative stage based on questionnaire?

**II. Empirical research:** This includes a survey aiming to identify employers' needs regarding the skills of the labor force and to develop a model of the job selection criteria.

**Main objectives** followed by the research are:

- (1) *Designing the survey frame and instruments in order to identify Romanian employers' needs* (research methods adequate to the research questions, develop the research instruments, define the sample);
- (2) *Testing the research instrument (interview guide, questionnaires)* regarding the clarity of the questions, completeness of the relevant issues addressed and the response scales, questions the applicability of the different categories of respondents, the length of the survey.
- (3) *Hypothesis testing* regarding the factors influencing the employers' needs and the identification of their main skill demands.

The main **research hypotheses tested are:**

(Hypothesis 1) Companies being more satisfied with the quality of higher education system will make more frequent use of the educational criteria during the employment process.

(Hypothesis 2) The standardization level of the education system as perceived by companies is associated with more frequent use in the selection process of indicators related to candidates' education.

(Hypothesis 3) The complexity of the selection process varies depending on the size of the company.

(Hypothesis 4) The selection criteria implemented by companies varies depending on company size.

(Hypothesis 5) In companies with better financial performance, the selection process is more complex, comprising several stages of selection.

(Hypothesis 6) The development of a company is associated with the use of more complex practices of hiring process (orientation towards the general competencies of the candidates).

(Hypothesis 7) The content of the selection process steps vary depending on the vacant job category.

(Hypothesis 8) The criteria of the selection process vary according to the job vacancy category.

(Hypothesis 9) In the companies where the selection process includes more stages, voluntary turnover rate is lower.

(Hypothesis 10) In accordance with the theories of human capital through education individuals acquire the necessary skills for the labor market.

(Hypothesis 11) The information provided through the higher education diplomas facilitates the hiring process.

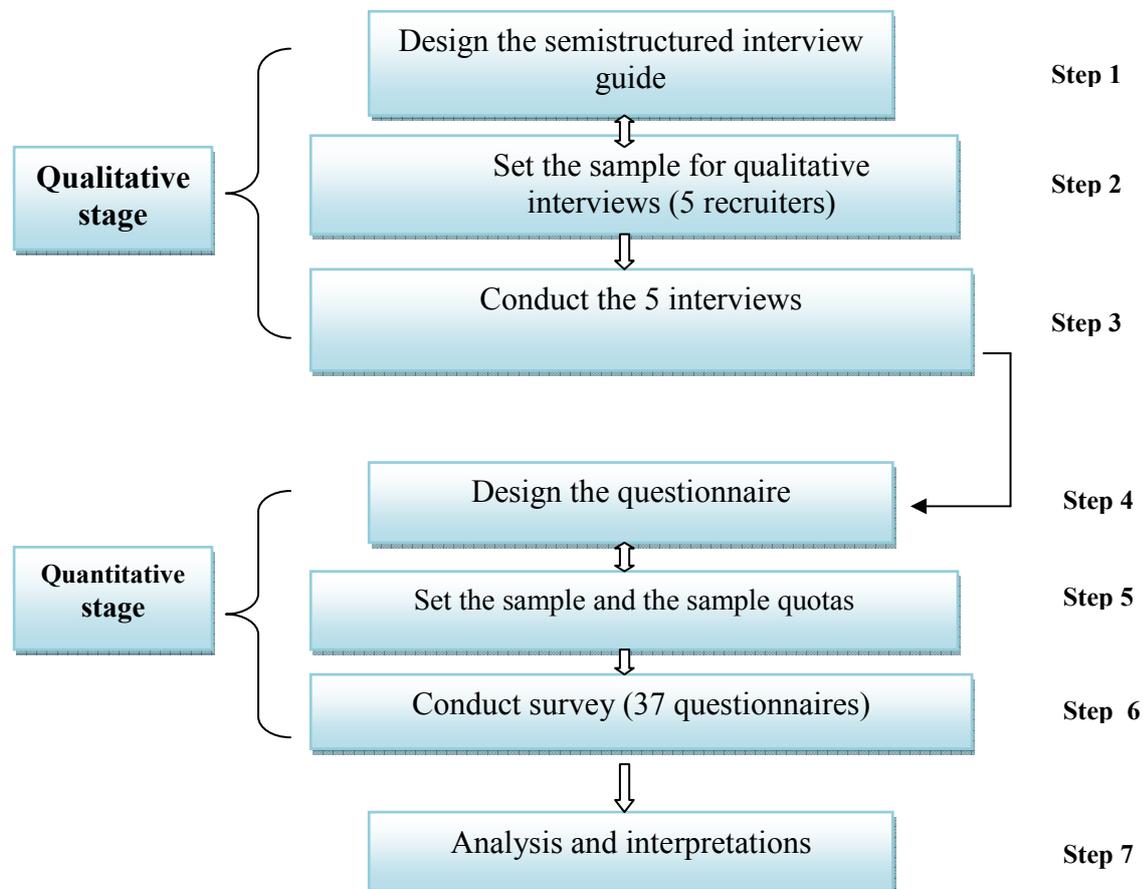
At the **methodological** level, in the pilot phase, to ensure the validity of data obtained, we chose to use a mixed research design. In this regard, we considered it appropriate to follow the principles of triangulation (Bazeley, 2004). We opted to use a *mixed methodology* that includes both qualitative methods (in our case, individual depth interviews) and quantitative (survey-based questionnaire).

### ***The methodology and results of the pilot study on the needs of employers***

Given the exploratory nature of the qualitative phase of the pilot study, we used a *theoretical sampling* (judgement sample / purposive sample) and in the second phase of the exploratory study we conducted a questionnaire-based survey.

***Quota sampling technique*** was chosen as the sampling rate. The pilot survey sample included 37 companies in fields such as trade, production (clothing, footwear, furniture, and wire products), consulting, telecommunications, construction, real estate, education, tourism, transportation. One of the important criteria in selecting companies focused on their experience in hiring university graduates.

Figure 5 Organization of the exploratory (pilot study)



### ***Results regarding the competencies required by companies***

(1) Importance of the hiring competencies: all the competencies are considered to be important, obtaining above average scores. The most important are considered to be: *assuming responsibilities* (mean 4.86), *planning and efficient time organising* (mean 4.71), and *motivation for work* (mean 4.65), *promptitude and efficient usage of the time* (mean 4.65). The least important are *general knowledge* (mean 3.01), and *ability to analyze and question the facts* (mean 3.22).

(2) Satisfaction level of the employers regarding the candidates' skills: employers are generally satisfied with the candidate's competencies. The highest satisfaction level is found for *assuming responsibility of the task* (mean 4.10), *promptitude and efficient usage of the time* (mean 4.09), *teamwork abilities* (mean 4.07).

(3) Satisfaction level with the skills of the young graduates. As expected, for almost all the competencies, the satisfaction level is lower. The highest differences are found for *ability*

to execute (difference of 0.66 points), *management skills* (difference of 0.60 points), *job knowledge* (difference of 0.44), *planning and efficient time organising* (difference of 0.43). It seems that the work experience has contributed to their development. On the contrary, for other skills young graduates seem to have an advantage: *general knowledge* (difference of 0.49), *PS usage* (difference of 0.34), *fast learning capacity* (difference of 0.19), *proactive attitude and new solutions* (difference of 0.12), *general intelligence level* (difference of 0.10).

(4) Of great interest there is the relation between the *satisfaction level* and the *importance of the skills*.

Given the fact that, in general, for all skills, their importance is assessed by employers as being higher than the level of satisfaction, we note that most competencies are found in the quadrant of the skills considered to have high importance and also high satisfaction. Of particular importance are the skills considered to be important, but the satisfaction level is low: *planning and organizing time effectively*, *ability to execute*, *job-specific knowledge*, assuming *responsibility*. They are relevant for deciding the direction of intervention in order to increase the quality of skills university graduates have. This frame indicates vulnerabilities in the graduates' skills according with the market demands, and shows at which point we should start to improve the quality of graduates.

## **The methodology of the applied research on the employers' needs**

### **Quantitative survey research objectives**

- (1) Identify Romanian employers needs regarding the quality of the labor force by analyzing the characteristics of the selection process content (selection stages, selection criteria, required skills by employers, key points for which employers have difficulty in finding highly skilled labor, labor needs according to the activity field);
- (2) Identify the factors that influence the hiring needs of companies in Romania (level of satisfaction with the quality of education, the company's financial performance, field of industry, labor supply for the field of activity);

### ***Sampling method and data collection***

The main *data source* for setting the sample is represented by the data base developed by the Romanian Chamber of Commerce named: *Pro Business Romania*.

*Eligibility of respondents*: The instruction included in the questionnaire mentioned that a representative of management or a person having responsibilities in the human resources department was invited to answer the questions. One of the requirements referred to the experience of the person in the recruitment and selection of the firm.

As a sampling technique, a non-probabilistic technique was chosen, quota based sampling (which provides a representation of the main characteristics of the population, by selecting a proportional size of each relevant category of population). Although it non-preserves the limits of the non-probabilistic sampling, we believe that this technique is analogous to stratified probabilistic sampling because it ensures that each group / category is represented in the sample. In this way we aim to achieve a better identification of relevant characteristics, so that each group that has the characteristics to be represented in the study sample.

*The characteristics based on which the quota were established are:*

- (1) *ownership (public/private),*
- (2) *size of the company,*
- (3) *activity field.*

*The sample of the quantitative survey* included 130 companies.

*Sample structure of respondent companies by number of employees*

Of the 130 companies, 38 are companies with fewer than 50 employees (representing 29% of the total units surveyed), 42 are medium sized companies (33%) and 50 companies have over 250 employees (38 %).

*Respondent companies in the sample structure by ownership type*

Of the responding companies, 25 are state-owned companies (19%), while 105 are private companies. The percentage obtained is lower compared to the 30% proposed for state companies.

*Structure based sample of companies surveyed by activity field*

Regarding the activities of the respondent companies (according to CAEN) this fall as follows: 37 are in manufacturing such as clothing, footwear, furniture, wire products (28%), 6 are electricity, Gas, water distributors (5%), 42 in trade (32.5%), 9 transportation (7%), 21 hotel services, IT, communications, financial intermediation (16%), and 15 providing other services (11.5%).

### **The quantitative research instrument: concept operationalisation**

In terms of content, the questionnaire aimed to identify:

- (1) the level of satisfaction of the hiring companies regarding the quality of higher education system;
- (2) frequency of use of the stages of the employment selection process (according to the types of jobs);
- (3) the importance of the selection criteria for employers (according to the types of jobs);
- (4) the factors that negatively influence employment of youth graduates;
- (5) the opinion on the level of standardization of the higher education system;

- (6) areas in which employers are experiencing difficulties in finding skilled labor;
- (7) view on the significance / characteristics of a job requiring higher education (graduate jobs);
- (8) information signalled by diplomas about the candidates in the employment process;
- (9) representative dimensions for the quality of a university;
- (10) socio-demographic data on respondents and identification data of the company (including information on the company's development).

Regarding the *validity of the instrument*, given that the sample used is not a probabilistic one, we have not expected to get a high external validity (which means that results will not be extended to the entire population of company employees). However, *external validity* is assured by the comparisons we made with the results obtained in the pilot stage. We tried to ensure good *construct validity*, by way of elaboration of the questionnaire. Thus, we sought to cover the full range of sub-topics and sub-dimensions that may be contained by our topic (both by appealing to experts and through literature review). Also, another way to assure the construct validity consisted in the inclusion of reversed questions.

### Research results: employers' needs

#### Characteristics of the employment process

##### Recruitment methods used by companies

Most frequent recruitment methods are *internal recruitment methods* (Table 5.4). Comparing with the results obtained in the pilot stage the internal recruitment methods seem to be more frequently used.

Table 4 *Recruitment methods used by the companies in the sample*

Recruitment methods	Mean (regular jobs)	Mean (management jobs)	Value test <i>t</i>
<i>Internal recruitment methods</i>			
a. Job advertisement	3.40	2.95	3,97*
b. Online job advertisement	3.84	3.62	2,06*
c. HR agencies	1.68	1.99	-1.35
d. Networking and recommendations	3.48	3.12	3.86*
e. Labor offices	2.57	1.82	5.88*
f. Relationships with educational institutions	2.33	1.47	1.57
g. Candidates' walk in	3.07	2.33	6.26*
h. Job fairs	1.85	1.69	2.70
i. Head hunting agencies	1.14	1.65	-4.04*
î. HR consultants	1.35	1.47	-1.15
j. Internship programs	1.95	1.62	2.53*
<i>Internal promotions and transfers</i>			
k. Employee skills data base	3.58	3.51	0.02
l. Recommendations from supervisors	3.88	3.76	1.58
m. Internal job advertisement	3.40	3.24	1.52

\* Significant differences  $p < 0.05$

### Importance of the selection stages and criteria

Mostly used selection stages are individual selection interview (mean 4.65), followed by *CV selection* (mean 4.37), *trial period* (mean 4.27) and *practical tasks* (mean 4.00). We want to specify that the trial period is not a selection stage.

In analyzing the employers' needs, *selection criteria* are an important component. The most important selection criteria are:

- *promptitude and efficient usage of the time* (mean 4.80),
- *honesty and reliability of the candidate* (mean 4.63),
- *pro-active attitude, solution finding* (mean 4.60),
- *motivation and attitude toward work* (mean 4.54).

These are oriented not that much on the transversal skills of the candidates, nor on the specific knowledge (as most of the studies find), but on personality features of the candidates (promptitude, honesty, motivation).

Among the least important criteria are those referring to the education results of the candidates. Some other educational criteria are also less important: *master diploma* (mean 2.87), *professors' recommendations* (mean 2.80), *course attended during faculty* (2.82). These show the low value educational indicators have for the employment selection process.

Table 5 *Importance of the selection criteria*

Employment criteria	Mean	Std. dev.
Promptitude, efficient usage of the time	4,80	0,5
Honesty, trustworthiness of the candidate	4,63	0,6
Proactive attitude, solution finding orientation	4,60	0,5
Consciousness	4,57	0,7
Motivation, attitude toward work	4,54	0,7
Interest for the activity performed	4,48	0,7
PC usage	4,48	0,6
Personality, character	4,35	0,9
Professional attitude	4,34	0,7
Optimism, positive attitude	4,34	0,8
Practical competencies	4,33	0,9
Self-control, patience	4,33	0,7
General intelligence level	4,31	0,8
Fitness with the organization	4,30	0,9
Fitness with the job	4,30	0,9
Desire to learn new things	4,29	1,0
General skills (communication, team work)	4,28	0,7
Specific job knowledge	4,26	0,9
Enthusiasm, energy	4,24	0,9
Resistance and stress tolerance	4,24	0,8
Negotiation skills	4,12	0,9
Career orientation	4,10	0,9
Leadership skills	3,97	0,8
Fairness of the candidate	3,95	0,9
Test results during the selection process	3,92	1,1
Language skills	3,92	0,9

<b>Performance during the interview stage</b>	3,83	1,2
<b>Candidate expectancies</b>	3,82	1,0
<b>Professional outcomes</b>	3,80	1,2
<b>Specific knowledge on the firm field</b>	3,78	0,9
<b>Theoretical knowledge in the field</b>	3,71	1,1
<b>Specialisation graduated</b>	3,70	1,1
<b>Recommendations</b>	3,66	1,0
<b>Work experience</b>	3,64	1,3
<b>Availability for overtime</b>	3,59	1,0
<b>Higher education studies</b>	3,50	1,1
<b>Quality of the educational institution</b>	3,42	1,3
<b>Wage required by the candidate</b>	3,26	0,9
<b>Recommendations from previous employers</b>	3,09	1,0
<b>Selectivity at the admittance system</b>	3,00	1,5
<b>Trainings and other volunteering activities</b>	2,97	1,2
<b>Master diploma</b>	2,87	1,4
<b>Course attended during faculty</b>	2,82	1,0
<b>Professors recommendations</b>	2,70	1,3
<b>Attractiveness of the candidate</b>	2,67	0,9
<b>School results</b>	2,58	1,2
<b>Work experience in unqualified work</b>	2,27	1,0

### Selection criteria factors

Considering the variety of the selection criteria, we tried to identify the main latent selection dimensions. An **exploratory factor analysis** was conducted.

#### (1) Prerequisite tests for establishing the adequacy of the data for the factor

*The level of the adequacy of the sample:* For the selected variables the KMO value was 0.615, value considered satisfying.

*The sphericity test Barlett* has also a significant value, which confirms that the sample is adequate.

#### *Testing the adequacy of implementing the factor analysis:*

The value of the determinant obtained after eliminating the correlating variables is Determinant = 0.0005.

#### (2) The factor analysis

Regarding the extraction methods we used *principle components factor analysis*.

To determine the *number of factors* we took into consideration the *parsimony principle* (variables to be influenced by a low number of factors) and the *accuracy principle* (developing a model close to the real situation). For extracting the factors, we chose two default methods, so the number of factors to arrive at the most to the data obtained. We started with the percentage of explained dispersion and the amount that we agreed was 70% (average value indicated by the literature). We also met the *Kaiser criterion*, which means retaining as factors those that have a greater explanatory power than a single variable (the eigenvalue is higher than 1). Because the sample is not very high, and the last factor has a low eigenvalue, close to the critical minimum (eigenvalue = 1.024), we opted not to exclusively follow this

criterion (under which we obtained eight factors that meet the requirement, having eigenvalue greater than 1). We kept only seven factors explaining 70.2% of the total dispersion.

Table 6 *Factor structure after oblimin rotation*

	Factors							Alpha Cronbach
	1	2	3	4	5	6	7	
Higher education level						,805		.815
Selectivity of the admittance system						,714		
School results						,642		
Specialisation graduated						,616		
Theoretical knowledge						,741		
Job specific knowledge		,816						.791
Field specific knowledge		,566						
Work experience		,850						
Recommendations from previous employers			,436					.839
Recommendations from professors			,709					
Professional outcomes			,703					
Optional courses attended			,811					
Trainings and other out of school activities			,848					
Tests results during the selection				-,790				.770
Fitness with the job				-,752				
Desire to learn new things				-,766				
Expectancies from the job				-,597				
Availability to work overtime	,687							.930
Fairness of the candidate	,658							
Professional and mature attitude	,702							
Self-control	,844							
Consciousness, trustworthy	,816							
Career orientation	,815							
Proactive attitude	,492							
Promptitude in time usage	,750							
Resistance and stress tolerance	,598							
Motivation and attitude toward work	,743							
General competencies					,863			.704
Leadership					,572			
PC usage					,614			
Wage expected							-,915	
<b>Eigenvalue</b>	15,7	4,8	3,6	2,6	1,9	1,8	1,7	
<b>% explained variance</b>	34,2	10,6	7,7	5,6	4,3	3,9	3,7	

### (3) Results regarding the factors

The following factors were identified: *Attitude toward work*; *Work experience*; *recommendations and professional outcomes*; *Job fitness*; *General competencies*; *Educational qualification*.

The values of the Alpha coefficients exceed .70 for all the six factors, showing good internal consistency.

The highest importance is found for *the general competencies* (mean 4.44,  $\sigma = .57$ ), followed by *work involvement* (mean 4.31,  $\sigma = .63$ ) and *fitness with the job* (mean 4.15,  $\sigma = .88$ ). Lower scores were obtained for the factors *work experience* (mean 3.89,  $\sigma = 0.92$ ), *wage*

*required* (mean 3.25,  $\sigma = 0.94$ ), *educational qualification* (mean 3.22,  $\sigma = 0.99$ ) and *professional outcomes* (mean 3.09,  $\sigma = 0.99$ ).

### **Importance of the selection criteria in the employment process**

We found it advisable to try to identify which are the most important selection criteria in a different way than declarative answers. We analyzed the features of the shortlist candidates so that to identify the skills that differentiate the candidates actually employed by those who have reached the final stages of selection, but were not selected to be hired.

Based on the criteria identified to be the main selection factors, we requested information from recruiters regarding the quality of each of the candidates from the short list (those who were selected after screening of CVs and the first interview and participated in the last stages of selection). Two HR companies were involved, that had recruitments and gave us information about the candidates. We obtained information on the candidates to 3 assistant manager positions, 3 marketing assistant positions, and 2 positions of accounting. In total, we obtained information about 41 candidates on the short list of selection, which participated in final interviews.

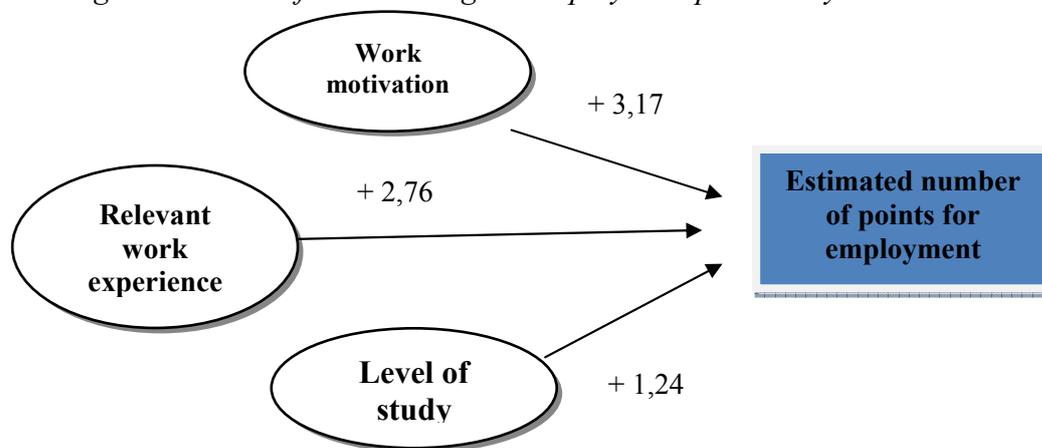
Recruiters rated each of these candidates on a five points Likert-type scale, on the following criteria: level of education, fitness of the educational specialization to the vacancy position, work experience (number of years of experience, number of positions filled in the past), the salary requested, languages, PC usage, communication skills, motivation and attitude towards work, availability for overtime, professional goals, the credibility of the candidate. For each candidate there have been granted a number of points from 1 to 10, depending on the preference employment. In this way, all persons for whom the assessment has been conducted on these criteria received a number of points depending on the preference of evaluators regarding their selection for employment (the employed candidate received the highest number of points, the next preferred candidate one point less and so on).

In analysing the predictors for the occupational selection we used **simultaneous regression analysis** (which means the concomitant inclusion of the variables in the model). The predictor variables that we selected for inclusion in the model are: *relevant work experience*, *education level*, *work motivation*, *job matching educational specialization*, *foreign languages*, *the salary requested*.

**Regression equation obtained is:**

**Estimated number of points for employment** =  $-8,152 + 3,17*Work\ motivation + 2,76*Work\ experience + 1,24*Education\ level$

Figure 3 Regression model for estimating the employment probability



The variables that do not contribute significantly to the estimation criterion were eliminated from the proposed model. Analyzing the statistically significant criteria, we note that the motivation for work seems to have the strongest influence on the final score obtained by the candidate for employment. This result is consistent with results from the questionnaire-based survey, where the motivation for work was assessed to be an important selection criterion.

Given the small number of cases included in the analysis, the results are exploratory, and further study is required on a larger number of cases and multiple selection criteria. Another limit of this analysis concern the small number of criteria captured and low sensitivity of measurements. As for the candidates included in the analysis there were no results from personality tests and other selection steps (except for information obtained in the interview and selection based on CVs), predictor variables used were not able to cover the whole range of predictors that could influence the employment final decision.

### **Employers satisfaction with the quality of the educational system**

There is a rather low level of satisfaction with the quality of education. Only satisfaction with the quality of general universities exceeds the average on a 5 points scale, with a mean of 3.3 ( $\sigma = 1.05$ ). As expected, the lowest level of satisfaction is shown to private education (mean 1.86).

## Factors influencing employers' needs

### Satisfaction with the quality of the educational system and the selection process

(Hypothesis 1) **The value of the educational qualification of the candidates is more important for companies having a more favourable opinion regarding the quality of the higher education system.**

As expected, the companies having a higher level of satisfaction with the quality of education value more in the process of selection the criteria pertaining to the educational system: the educational degree, quality of university graduated, grades obtained, the theoretical knowledge acquired during university.

Most of the criteria related to a high level of satisfaction are related to the candidates' educational outcome indicators. These results show that a high level of satisfaction with the quality of education is associated with usage in the selection process of the information provided by candidates' qualifications. We can say that **the hypothesis is verified by the data** obtained (the null hypothesis is not invalidated), which allows us to conclude that employers who are more satisfied with the quality of higher education system use more in the selection process the information on the educational qualification of the candidates.

### Perception of the standardization level of the higher education system and the selection process

(Hypothesis 2) **The level of standardization perceived by the companies is associated with more frequent usage of the educational indicators in the selection process.**

Overall, the responses indicate the perception of a low standardization level of the education system (mean 2.42,  $\sigma = 0.97$ ). The *quality of the graduates* is considered to be the least consistent across Romanian universities. Similarly, the rigorousness of the assessment and evaluation systems at different universities is considered to be rather different (mean 2.30,  $\sigma = 1.08$ ).

Analyzing the association between the perception of a standardized educational system and the selection criteria used in the employment process, we note the existence of an association for more of the criteria indicated. Although the hypothesis is validated by the results, one can note that the association is of low intensity. In addition, not only criteria related to education of the candidates are considered to be important, but also the professional experience of candidates and their general skills.

### Size of the company and selection process

(Hypothesis 3) **In large companies the selection process is more complex.**

(Hypothesis 4) **In large companies general skills are more important in the selection process than specific knowledge.**

A relation was identified between the frequency of the selection stages usage in the employment process and the number of employees of the company ( $r = 0.33$ ,  $p < 0.05$ ).

The most desired competencies in large companies are: *candidate fitness with the job* ( $r = 0.34$ ,  $p < 0.05$ ), *fitness of the educational specialization with the job* ( $r = 0.30$ ,  $p < 0.05$ ), *leadership skills* ( $r = 0.30$ ,  $p < 0.05$ ), *candidates' expectations from the job* ( $r = 0.29$ ,  $p < 0.05$ ), *courses attended during faculty* ( $r = 0.28$ ,  $p < 0.05$ ).

### **Company performance and the selection process**

**(A) Results regarding the relation between the performance of the company and the selection process**

(Hypothesis 5) **In companies with a better performance the selection process is more complex.**

The results do not support the hypothesis. Contrary, the more performing companies (according to the turnover) use less stages such as *practical tasks* ( $r = -0.41$ ,  $p < 0.05$ ). Same trend was identified for the companies having higher profits ( $r = -0.54$ ,  $p < 0.05$ ).

Regarding the competencies appreciated in the selection process, the companies with higher turnover are more interested in the *theoretical knowledge* ( $r = 0.6$ ,  $p < 0.05$ ), *leadership skills* ( $r = 0.61$ ,  $p < 0.05$ ), *PC usage* ( $r = 0.43$ ,  $p < 0.05$ ), *desire to learn new things* ( $r = 0.4$ ,  $p < 0.05$ ) and *general competencies* ( $r = 0.36$ ,  $p < 0.05$ ).

In companies with higher total income the work experience is less appreciated, a greater focus being put on the development potential of the candidates, willing to learn new things.

**(B) Results regarding the development level of the company and the selection process**

(Hypothesis 6) **The development trend of a company is associated with a more complex selection process and focus on general skills of the candidates.**

Results show that the companies that developed in the last years more frequently use *group interviews* (*independent t test*,  $t = 3.20$ ,  $p < 0.05$ ), *selection tests* ( $t = 3.17$ ,  $p < 0.05$ ), *application forms* ( $t = 2.21$ ,  $p < 0.05$ ), and *reference check* ( $t = 2.31$ ,  $p < 0.05$ ). The results support the hypothesis.

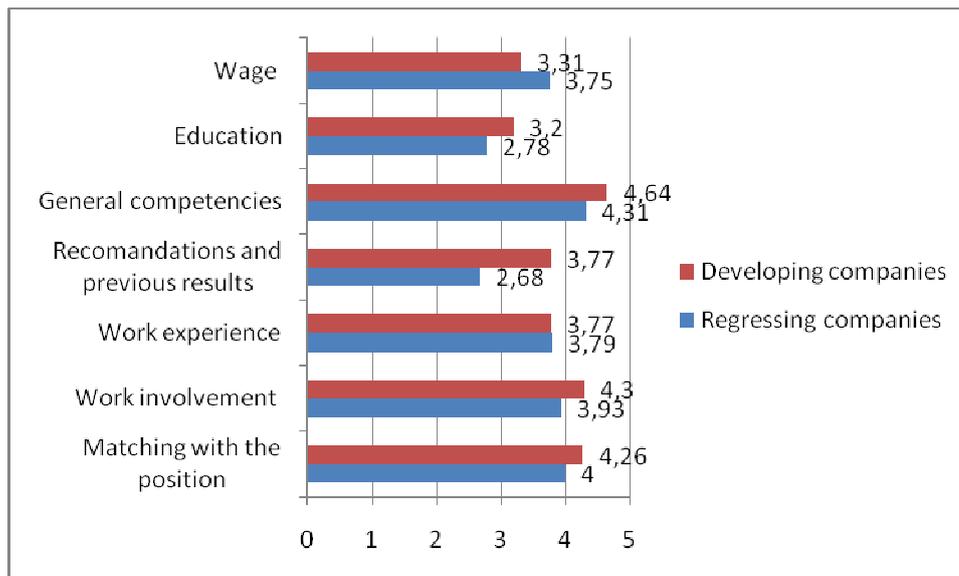


Figure 4 *Importance of the selection factors in developing companies vs. downsizing companies*

In developing companies there are more important in the selection process the following competencies: *general competencies* ( $t = 2.9$ ,  $p < 0.01$ ), *work involvement* ( $t = 2.5$ ,  $p < 0.01$ ), *fitness with the job*, and *educational qualification* ( $t = 2.3$ ,  $p < 0.05$ ), *professional outcomes and recommendations* ( $t = 2.8$ ,  $p < 0.01$ ). Contrary, *the wage required* ( $t = -2.2$ ,  $p < 0.05$ ) and *work experience* are more important for companies that have downsized in the last years.

### **The specific characteristics of the vacancy and selection process**

#### **(A) The importance of the selection stages according to the job category**

(Hypothesis 7): **The number and the importance of the selection stages in the employment process vary according to the characteristics of the vacant job.**

Contrary to our expectations, we note that for management positions companies' use even less selection stages. Except the *intelligence tests* (which are more frequently used), all the other stages are less implemented for management positions.

Although the hypothesis is supported, and differences were identified in the selection process according to the level of the vacancy, the differences identified are rather low.

#### **(B) The importance of the selection criteria according to the category of the vacant job**

(Hypothesis 8) **According to the job category, companies will implement different selection stages.**

(Hypothesis 8.1.) **Criteria related to educational qualification of the employees are more important for entry level jobs;**

(Hypothesis 8.2.) **Criteria related to the educational specialisation are more important for specialised jobs (technical field, IT, accounting).**

Both hypotheses are supported by the research results. Educational indicators are more important for entry level jobs and for those specialised jobs.

During the selection process, the information obtained by companies during the selection stages is more important than the information signalled by the candidates' educational diplomas. These results show the high costs hiring companies have with the employment process.

### **Causes generating difficulties in young graduates employment**

The greatest difficulty is *the insufficient training of the young graduates* (mean 4.11,  $\sigma = 1.0$ ), followed by *high expectations* (mean 4.09,  $\sigma = 1.1$ ), *high employers' taxes for employees' wages* (mean 3.85,  $\sigma = 1.4$ ). The macro-structural factors seem to be less a barrier for graduates' employment (such as *high number of graduates* or *too protective legislation*).

### **Testing the human capital and screening theory hypotheses**

(Hypothesis 10) **Through education graduates develop the skills required on the labor market.**

The answers support the human capital hypothesis. 53% of the respondents agreed that *the educational system develops the competencies of the graduates* (mean 3.32,  $\sigma = 1.1$ ).

(Hypothesis 11) **The information signalled by higher education diplomas facilitates the hiring decision of the employers.**

The results do not support this hypothesis. Contrary, according to respondent's opinion, the educational system does not perform a selection of the graduates.

### **The value of the educational credentials in the selection process**

The results show that 81% of respondents state that they are interested in the degree candidates have especially in an initial phase of CV screening and only 4% in the interview stage.

The bachelor diploma is important especially for vacancies that require higher education (48%), for the jobs that require a certain specialization (14%), for management positions (11%), and for 19% of the respondents higher education degree is not considered to be important.

Of the respondents, 21% are very little interested in the school performance of the candidates, while only 12% consider themselves as interested in education.

## CONCLUSIONS AND PERSONAL CONTRIBUTIONS

To provide an overview of the entire work, the conclusions were structured in three parts:

- Presentation of the main contributions of the research, both in theory and practical application (thumb);
- Highlighting the implications of this research at the managerial level, the quality management system in higher education;
- Presentation of the main limitations of the paper and the identification of the opportunities for future research, based on the results obtained.

### Personal contributions to the field knowledge

1. **Theoretical contributions** to enrich the literature in this field are:

- identification of the *factors* based on which employers' needs vary in the employment process:
  - ✓ companies' level of satisfaction regarding the quality of higher education;
  - ✓ perceived level of standardization of the educational system;
  - ✓ size of the company;
  - ✓ job characteristics (job level, the degree of specialization for a particular field of activity);
  - ✓ the development of the company (the company trends, financial performance, human resource orientation, level of technological development).
- the identification of the most important characteristics and abilities which define the *preferred candidate* for an employer:
  - ✓ attitude and motivation toward work;
  - ✓ general skills;
  - ✓ professional experience in the field;
  - ✓ the level of education
- clarifying the notion of quality in higher education (compared with the meanings of quality of goods in manufacturing sector), its evolution and the existing approaches;
- theoretical clarification of the main concepts belonging to the quality management system in higher education (quality management models, customer orientation, the products of education);

- identifying the defining characteristics of the labor market that influence the requirements shown by the employing companies regarding workforce quality;
- analysis of the main features of the higher education system that influence companies' hiring needs;
- clarifying at methodological level of the main characteristics of research methods and instruments used in studying the employers' needs.

2. Contributions at the empirical level are reflected in the results obtained through the research:

- identifying the main ***dimensions representative for the quality of a university*** in terms of the four categories of customers (students, graduates, teachers and employers). The research allowed comparisons among the perspectives of the four categories of customers (the identification of common points and the ones that make the differentiation). There are six dimensions to be considered representative for the quality of a university (*professional orientation of the graduates, the quality of the graduates, quality assurance, the selectivity of the admittance system, the tradition of the institution, the rigorousness in passing exams*). The emphasized importance for all four types of customers of the dimension „***the quality of the graduates***”, prompted us to point our research exclusively on the needs of the employers applied on higher educated workforce.
- identifying the most important ***stages and selection criteria*** in the hiring process (it was revealed the preponderant usage of the conventional steps and the importance of *attitudes towards work* and *motivation for work, personality traits* and *general competencies* of candidates);
- highlighting the differences between companies that have developed in the last years and those that have regressed, in terms of selection criteria and skills required in the hiring process (the results showed increased preference of the companies that have developed for *general skills, education* and *attitude towards work*. Differently, the companies that have a tendency to regress proved to be more interested in the *salary* requested by candidates and their *work experience*);
- testing the hypothesis of ***human capital theory*** and ***theory of selection***. In accordance with human capital theory, the education is considered to contribute to the development of graduate skills, but according to the sample answers, education is no longer perceived to contribute to the employment selection. Thus, companies have higher costs with the

selection process, being forced to invest more resources in order to identify the valuable candidates as future employees);

- the identification of the extent to which the *educational qualification* is valued by employing companies in the selection process (the results showed a reduced use in the selection process of the educational indicators: *educational achievement, specialization graduated, teacher recommendations*. On the other hand, we have noticed that those companies more satisfied with the quality of the educational system are more commonly using as selection criteria indicators related to education of the candidates);
- at a methodological level, the research instruments was developed and tested.

### **Implications of research for the quality management system in higher education**

At a conceptual level, terms such as customer, product, service, and quality management system were integrated into the agenda of educational institutions that have assumed the responsibility for the quality of their results (Morley, 2001). Accountability must be accompanied by the implementation of a set of strategies to ensure the quality of education. An important condition is obtaining information regarding the requirements of internal and external customers. In this regard, the absence of information on the skills required by employing companies with respect to the selection criteria is an obstacle not only for the integration of graduates into the labor market (Murnane, Levy, 1998), but also for the quality management system.

Being aware of the skills required by employers, educational institutions get important feedback that allows orientation of teaching and learning process, so that they effectively respond to labor market needs. For these reasons, we believe that the task of the quality management system in higher education is to facilitate the awareness of the various categories involved (teachers, students, representatives of the educational institutions management) regarding the needs of the hiring companies.

One of the roles and responsibilities that they must assume the higher education systems aimed at improving employment opportunities for graduates (which is an important component of quality management in higher education). We believe that higher education is increasing the chances of employment, and through our research we brought statistical evidence and empirical results supporting it. Hence, it is very important to identify mechanisms that contribute to increased employment opportunities for graduates. Once we have identified factors that have led to higher levels of employment for the graduates, we can

propose strategies to enhance their effect. The need for this type of analysis is more important, as the statistics show a sharp increase in unemployment among young graduates. This category is the most vulnerable in terms of employment chances.

Although most data show that while the quality of the education and training of graduates has decreased, we believe that higher education develops graduates' skills that they still support their employment. The work done by this research was to identify employers' opinion on the role that education has in the graduates' development. Most respondents agreed *that the educational system is developing the graduates' skills*.

Also, supporting the human capital theory, we believe that companies employing graduates with good academic results are hiring future well performing employees.

Next, we present the **main conclusions regarding the research hypotheses** and their implications at the managerial level in higher education.

(1) Based on the interpretations, we noticed that employers who are more satisfied with the quality of higher education system, more frequently use in the selection process educational indicators. The results show that, in terms of respondent companies, higher education does not provide a selection of underperforming students. For this reason, the information provided through educational indicators is seldom used in the hiring process.

In the companies where the satisfaction with the quality of the educational system is higher, the respondents consider *that the university diploma facilitates the hiring decision, and that universities select good students, distinguishing them from the weak ones*.

(2) With regard to the factors related *to characteristics of the companies* that influence the selection process, we showed that in *large companies* there is a higher interest for the general competencies of the candidates. In this regard, the system can contribute to raising awareness among academics (teachers, students) about the importance of general skills, especially for students who want to develop their career in large companies. Thus, we noted that the main criteria for employment of large companies focus on either candidate's suitability for the job or the general skills, such as openness to new, foreign languages and computer skills abilities.

Also, the trend is noticed in the *more developed companies*. In companies that have developed during the last years certain stages of selection are more frequently implemented, such as selection tests, references check, group interviews and employment application forms. But the most common used are the traditional stages: *CV selection, individual interviews*.

The most important criteria include the candidate's personal characteristics, general skills and suitability with the position, all of which are considered more important than work experience or education of the candidate.

(3) The characteristics of the selection process vary according to the job category for which employment is made. Although there are distinct characteristics of the selection according to the category of the vacancy, the differences are relatively small. With reference to the quality management system in higher education, we believe that educational institutions must focus more on knowing for each specialization the specific job requirements. In this respect, it is necessary for each study program to know what kind of jobs the graduates are prepared for, which are the most common jobs held by graduates after graduation, which are the main skills needed to achieve a performing task on those positions.

### **Research limits and further research**

Regarding the limits of the present study, we identified three areas that can be further improved:

- the sub-topics approached require further analysis so that to allow the identification of other factors influencing the employers' needs;
- sample expansion: given the difficulties encountered in obtaining responses from employing companies, the research sample is not a probabilistic one. The results cannot be generalized to all companies in Romania;
- expand the analysis of the employers' needs on specific fields and categories of jobs. In this respect, the research has only analysed the different requirements of employers in the selection process for broad categories of jobs such as accounting, administrative, financial, technical, legal, management / execution.

This study revealed a number of research perspectives that may provide broader knowledge on the topic. Among them we can mention:

- replication of the study on a representative sample of employing companies, allowing the generalization of the results and conclusions;
- application and adaptation of the research tool for distinct categories;
- longitudinal application of the survey in order to constantly get feedback from employers, which to be valued in the strategies of the educational institutions.

All these research directions need to be implemented at higher education institutional level, so that to allow the identification of the main requirements of the labor market.

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