

HUMAN RESOURCES' QUALIFICATION AND ITS INFLUENCE UPON COMPANY'S PERFORMANCE

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Abstract

Human resources qualifications and level of competences impact the production level of the gross outcome. Work productivity directly impacts the total operating cost of a company. Mismatching between the job needs and the personnel skills can lead to serious dysfunctions in the production process and the production outcome. From the neoclassic theory of the labour market we can state that mismatching is a short run problem, while, based on Spence's job matching theory or Thurow's competition model we can point out that in the case of production companies mismatching is a permanent problem. This paper will present mismatching theory as well as the importance of qualification and skills. In order to show the impact of education on the gross production output we will use a productivity model that outlines the impact of education.

Keywords: Education, Productivity, Qualification, Competences, Mismatching, Over-Education, Under-Education.

1. INTRODUCTION

The last three decades were defined by the increase of global competition, the skill-biased technological adjustment and the aging of population. All these have resulted in a market where finding the right people for the right job becomes challenging. Mismatch (related to skills and qualification) has become a major problem across the world and has important impact on European Union and Romania as well. Even though across Europe, during the last three decades the number of graduates has doubled, job market still faces a lack of the right skills for the jobs. Clear evidences upon this exist in Spain and Italy where it is very probable to find over-educated people, but not over-skilled employees accordingly to OECD studies. The education is meant to deliver better prepared work force that would lead to a higher production gross output.

World economies have changed into service economies, and services became the main dynamic component of economic competition (Plumb and Zamfir, 2011a; Zamfir, 2010; Zamfir, 2011). The performance of organizations directly depends on the individual competence. The relationship "organization/team/individual" is based on the connection "competence/performance" (Corbos, 2005). Human resources directly influence the development of the company (Muscalu and Muntean, 2012), and managers have to be oriented towards excellence (Duduiala Popescu, 2013), with strong principles that can morally orient managerial decisions (Georgescu, 2013). There are growing demands for highly skilled and educated people, and e-learning might be a solution for good educational results (Plumb and Zamfir, 2011b; Zamfir and Plumb, 2011; Zamfir, 2008). This is because in an e-learning system may appear the effect of synergy. According to the definition of synergy, there are some features that arise in a system, and they are not arising in the components (Corbos, 2011, p. 68).

The nation's welfare and standard of living is expressed by the value of what organisations in aggregate output produce per head of population. To raise living standards it is mandatory to increase the employment rate and/or the productivity rate (for example what is produced in each hour worked by people in employment). For this, Romania needs qualified and adequately trained human resources for the job market. Qualifications can be obtained either in formal schooling or through formal and on the job training.

In 2013 the GDP/ capita (INS, 2014), expressed in PPP was 54% compared to the EU average which places Romania as the second poorest country in Europe (after Bulgaria). In this context only 4.1% of GDP is spent on education (EUROSTAT, 2012). The European Union average is placed at 4.7% of GDP. The educational system in Romania depends heavily on public funds. The private contribution to education in Romania was 0.12% (EUROSTAT, 2012). Private contributions include household and other private contributions such as company primes/ subventions. The European average of private contribution is 0.82%

Another important aspect is that participating to continuing vocational training (CVT) in Romania is far below the European level. According to INS Data, less than 2% of the adult population (25 – 64 y.o.) has been involved in any kind of CVT in 2011. The average of European Union is 9%.

2. QUALIFICATIONS AND SKILLS

Increased skills and qualification increase productivity. Higher productivity increases company productivity, thus, better earnings for employees (Becker, 1964, Mincer, 1974). This theory proposes a

link between age and earnings also, as older people have more on the job experience which can be understood as a higher level of proficiency based on the acquired skills; therefore, they are supposed to earn more.

It is very important to make a clear difference between qualifications and skills. Qualifications are related to formal education and are obtained usually in educational institutions recognised by the Ministry of National Education in Romania. The national education system is built on primary education, secondary and tertiary education. Education is compulsory for 10 year of study. The baccalaureate diploma is obtained after 12 years of formal theoretical education (at the end of high schools). University system follows the Bologna protocol regarding higher education (http://ec.europa.eu/education/policy/higher-education/bologna-process_en.htm).

Skills represent competences gained by an individual either during formal education or on job training. The spectrum of skills is widely spread. Studies across Europe show that what companies really need in order to have the job done are skills. Qualification is usually used as a signal of expected skills when clear evidences about the skills level of one person are not available.

European Union has set up targets in terms of qualifications, making clearly a link between qualification and skills while, there is more important for a country such as Romania to increase the value of skills. This is supported by the high number of graduates that work in jobs that do not require a bachelor degree or a master degree. In 2013/2014 academic year in Romania were enrolled 433 210 students (INS, 2014). Based on the press release of the Romanian Centre of Human Resources Occupation (<http://www.anofm.ro/>) on the 6th of March, the real need of labour force with graduate qualification was of 1244 jobs. There is a huge gap between the companies' needs and the education system deliverables.

On the other hand, companies complain that graduates do not own an adequate level of skills and this leads to extra costs of training for the human capital (World Bank, 2013). When Romanian employers complain that workers do not have the right skills, they are not just reflecting on education credentials or technical qualifications. As said in the introduction, workers are matched to jobs based on a multiplicity of skills not just their educational qualifications. Employers value both generic and technical skills. The former comprise cognitive (e.g., literacy, numeracy, problem-solving) and socio-emotional (e.g., self-discipline, perseverance, dependability, teamwork) skills, also called "soft" or "non-cognitive". Managers need to be emotionally intelligent, and to imbibe such values in their followers (Ölçer et al., 2014). There is mounting evidence that employers in advanced and emerging economies see the lack of socio-emotional (soft) skills at least as binding as cognitive and technical skills (World Bank, 2013). Further

evidences regarding this phenomenon can be found by consulting the most recent Falsh Eurobarometer (2010) report; Gallup, Bowles and Gintis (1998) for evidence of employer surveys from the United States and United Kingdom; Blom and Saeki (2010) for a study for India; and World Bank (2012) for evidence from Latin America.

3. EDUCATION AND JOB MATCHING

Accordingly to the Human Capital Theory, education develops skills that are directly linked to an increase in work productivity (Becker, 1964, Miuncer, 1974) that would lead to superior earnings. On the other hand more and more often managers are facing a scarcity of skills. Job matching represents one of the biggest challenges of any manager nowadays and is widespread across European countries. To find the person that disposes of exactly the required skills for a specific job description seems an ideal difficult to attain by companies. The differences that exist between the job's needs and the skills that the employee disposes are translated in extra charges for the company. Accordingly to an OECD study (OECD, 2011) that use qualifications as proxies for competences suggests that one in four workers is over-qualified and one in every three workers could be under-qualified for their job. This means that the mismatch is a real problem for the job market.

Persistence of the mismatching of qualification was not found to be permanent thought a person's lifetime. Over-qualification seems to be, accordingly to some theories, just temporary (Adam M. Lavecchia, Heidi Liu, Philip Oreopoulos, 2014) at the beginning of one's career. The implications of over and under-qualifications are related mainly to the productivity and to the training costs. It seems that an over-qualified person tends to earn less than their equally-qualified and well-matched counterparts while under-qualified workers tend to earn more (OECD, 2011). The real problem from the employer point of view lies in two major aspects:

- (1) the cost of training in order to bring the under-qualified people to the level demanded by the job and
- (2) the motivation of over-qualified people. Based on the specific literature of the over-qualified personnel, it seems that over-qualification attains also a lack of motivation that generates a less competitive environment at work, so, a lower productivity.

European Centre for the Development of Vocational Training sustains adaptation. From a manager point of view, adaptation should come from the employee. Employees search on the other hand employers ready to invest in their training so that to become better prepared for the job's demands. The

manager's responsibility then becomes finding the most appropriate person for that specific job.

Analysing the Romanian market (World Bank, 2013), during the last two decades the number of graduate students has doubled (this is based on the state report from the National Institute of Statistics). In reality, the industry segment that means around 23% of the active population in the private sector (AMIGO 2010 – 2013), lacks properly qualified labour force. In the same time more and more people with graduate studies have jobs that need only secondary diplomas. This means that more and more people are facing mismatching at workplace. This phenomenon has some immediate consequences:

1. Low productivity rate, among the latest in European Union. Economic indicators show that Romania was the 2nd most non-productive country in European Union: the GDP in PCS/occupied person in EU 27 was 51,0 for Romania. Only Bulgaria among the EU 27 had less than this - 44,5 (EUROSTAT, 2012).
2. High training costs for companies so that employees attend a needed/ required level of competences.
3. Lack of motivation (especially for those who are overqualified).

In summary, these issues lead to higher costs for companies which are translated in a lower competitiveness.

The labour market in Romania can be characterised (JRC Science and Policy Reports, 2014) by:

1. Labour force inadequately qualified for the occupied job
2. An increase demand for properly qualified labour force for the lower part of the tertiary sector (services)

Further, we will analyse classical job models in order to build afterwards a model of job productivity and to analyse the impact of education on the company's productivity in general.

Spence's job-screening model (Spence, 1973) presents education as a signal to identify more capable, able and motivated people for specific jobs. This would mean that in the long run people are motivated to invest in education, thus to become over-qualified, in order to increase their amount of signalling, so that they may differ themselves from others and easily get a better job. This model would sustain the theory that over-education is a permanent problem on the long run.

The **Thurrowjob-competition model** (Thurrow, 1975) sees mismatching also as a long run problem. This model is based on two queues: one with jobs and one with candidates to the jobs. The position of a job seeker in the candidates queue is determined by the level of education and is evaluated by the

company as the total cost of education that the company must support in order to better prepare the new person for the job. In these conditions, those with a higher level of education are generally thought to need less training, so, the associated cost is lower. Taking into consideration this model, it is grounded to say that people will tend to become more and more educated in order to occupy good positions all the time, which would lead to a permanent situation of over-educated employees in front of the queue.

Human capital theory states that companies are willing to utilize the maximum of their employees' skills. Moreover, human capital theory says that education level is directly linked to the income level. We need to specify here that there is a clear difference between qualification and skills. While a person can have a graduate qualification and be adequately qualified for a management job, that person can lack some of the skills needed for the job such as interpersonal skills. On the other hand, there can be people holding all needed competences for a specific job but lack the qualification. So, the skills and qualification mismatch should be both used to measure the gap between a person's ability to perform a job and the standard requirements of that job.

Based on this theory, as companies are willing to utilize the maximum of the skills owned by their personnel, it can be stated that mismatch is only a short run phenomenon as the company will adapt its production process such that the existing personnel will be fully utilized.

Regarding the link between education and income, the literature treating over-education and/or under-education phenomenon shows that over-qualified people even though they earn a little more than their colleagues adequately qualified for the same type of job, they earn considerably less than their counterparts that occupy jobs at the level of their education (JRC Science and Policy Reports, 2014).

In neoclassical economic theory, based on the opportunities created by the production possibilities and techniques, Derek F. Abell (Abell, 1980) introduces the tri-dimensional definition of business including the product, the market and the used technology, all these being used to obtain the right product that would satisfy a specific need on the market.

In this context, production companies produce and make decisions based on the production capacity (limited by the given technology) and by the relative prices in the market. Technology nowadays is characterised by a certain degree of flexibility regarding the adaptability of production. This is directly linked to the cost management process in the case of variations of costs coming from acquisitions or changes in the market prices.

Therefore, the job market becomes very reactive to company changes. For examples, *ceteris paribus*,

an increase in the number of those with graduate studies able to occupy a certain position in a company would immediately lead to a salary decrease for that specific position. Coming back to the production characteristics presented above, a company can take advantage on these new market prices for the discussed position and rethink the production process so that it would obtain lower production costs.

On the other hand, individuals have a dynamic behaviour and would start also an adjustment process. Therefore, those who are not happy with the conditions at the actual job would tend to find new positions that satisfy their needs. In time people would occupy the right positions in an organization for their level of qualification and their skills. This is consistent with Ölçer and Florescu (2015), who found that job satisfaction significantly affect job performance.

Based on this theory we can state that mismatching is only a short term phenomenon. But, in reality, on one side technology cannot adapt so quickly to the new production needs, on the other side individuals continue to invest in training and education so that they would tend to occupy better and better positions. The European Union develops a wide set of programs in all member countries that promotes life-long education and life-long skills improvement.

4. PRODUCTIVITY MODEL

Productivity is defined as the report between the used resources and the production output. In other words, productivity measures how efficient the production process is in transforming the inputs (capital, labour force, etc.) in outputs. To show the impact of qualification on the production output we will use a productivity mode (Mun Tsang and Henry Levin, 1985).

In order to define a productivity model we will begin from the following premises about a company:

1. A company is an organization characterised by different horizontal integration. The management has its own objectives and can operate on different upon different property forms. These have an impact on the work output.
2. A pivotal role is defined by the relation between the management and the production personnel. Historically, this relation is a conflictual one. We threat the human resources separately as employees cannot be considered just as other capitals. By hiring personnel the company gets the work capital owned by the employee. In this context the workforce psychology plays an important role (people will always tend to work the minimum for the maximum possible income). Therefore the management team has as special aim the development of a special supervision and motivation system.

3. The production output is conditioned not only by technology and production workflow, but also by a chain of decisions (production and management decisions).

We can consider the production of gross output (Y) as a function of labour force, capital, materials, job structure, organizational structure and time.

$$Y = F(L, LC, K, M, JS, OS, T, X).$$

L = labour

$L = (L_1, L_2, \dots, L_n)$ is an array of n elements that correspond to the n occupations in the production flow. These occupations included management positions, administrative, professional and technic personnel, as well as usual workers, operators, etc.

LC = labour characteristics

$LC = (LC_1, LC_2, \dots, LC_n)$ is also a vector of n sets of work characteristics corresponding to the n types of occupations from L array. LC_i is a set of characteristics of L_i labour. It includes needed competences and skills as well as requirements and work demands.

K = capital

$K = (K_1, K_2, \dots, K_p)$ is an array of p types of capital

M = materials

$M = (M_1, M_2, \dots, M_m)$ is an array of m different materials used for the production output.

JS = job structure

$JS = (JS_1, JS_2, \dots, JS_n)$ is an array with n sets of posts that correspond to the n occupations from array L . JS_i represents the job structure specific for labour L_i and includes both physical and psycho-social characteristics. Among physical characteristics we can count nature of the work, educational needs, demands of special competences for the job, remuneration/ work payment, promotion possibilities, etc. Psycho-social characteristics refer to relations between colleagues, supervision, relationship between management and workers, work atmosphere, etc.

JS plays a pivotal role in our analysis as it defines the relationship between management and workers. It also has a special view over education and skills. This array contains all requests for qualification and competences.

OS = organizational structure

OS = (OS1, OS2, ... OSn) is an array of n attributes of the analysed organization such as organizational complexity, company dimensions, etc.

T= Time/ technology, is a scalable measure and represents the impact of time/ technology upon production. It also plays an important role as it defines the company's flexibility to adapt to new production demands.

X = other factors, such as management objectives, production limitations, economic environment, etc.

The production output is the result of a process in 2 steps:

1st step: $VA = H(L, LC, K, JS, T)$, and represents the added value to the production. It is the net output of the production. This net output is then taken in the 2nd step

$Y = F(VA, M, OS, T, X)$.

For us, it is important to pay attention to the VA output, especially because it incorporates the arrays that contain information about qualification and skills. Regarding this, for the management it is of high importance to analyse the work effort for the production process. Related to this, when we analyse the VA function we become aware of the following:

1. When we consider labour L_i with characteristics LC_i and with job structure JS_i , education plays a major factor in both hiring, from a management point of view, and job completion, from a production overall point of view. When a new person is searched to fulfil the open position, based on the LC_i and JS_i elements the level of qualification and, especially, the level of competences is crucial. Based on this model we would go back to Thurrow theory and say that, for this L_i labour the job searching queue is arranged based on the level of acquired competences (on job and/or in formal training).
2. The added value is directly influenced by the job structure which includes not only physical characteristics but also psycho-social needs. Mismatching when trying to find the right person for the JS_i is further on reflected also in the overall atmosphere at the workplace. As the psychological literature related to mismatching presents the facts, mismatches always lead to a lower productivity rate based on the dissatisfaction of the employer. Regarding education, when people are over or under educated for the job they occupy they tend to be less productive and less cooperative with their colleagues. In these circumstances the overall production output is diminished.
3. JS_i also affects the relationship between colleagues. Based on our model it directly influences

productivity rate as it influences the added value of the production process. When there are differences regarding the education background between people occupying positions that require the same education level misunderstandings might arise and cooperation between peers might suffer. Especially when there are important differences in terms of qualification level obtained.

We can see that in the production of gross output education plays an important role influencing not only the proficiency at the job, but also the overall atmosphere and the relationship between peers. In this situation, matching becomes a serious problem to any manager as its primarily objective ought to be increasing productivity, so, to assure the best working conditions and the best personnel for the positions in the organization chart.

5. CONCLUSIONS

The main challenge is to properly measure individual occupation mismatch. As we could earlier see, qualification and skills affect productivity. But, beyond educational attainment, which can be easily measured through qualification level obtained through formal training, it is much more difficult to measure the skills mismatch which most of the time are tested and assessed only on the job. Measurements on both skills and qualification are important in order to analyse the level of mismatch, so, to further on analyse the productivity outcome based on the level of human resources level of education and training.

Mismatching is a very important issue as it affects the overall productivity of a company, so, it has directly effects on individual earnings as well as company performance. And even though qualification is a good approximation of competences when information upon skills is not available, evidences show that matching only between qualification and job is not sufficient for the best production output. Skills assessments are mandatory. Moreover, skills acquisition implies a surplus of founding from the employer point of view which can affect its overall results.

So far studies on skills are very few, but European Union is aware of this necessity, therefore the European Centre for the Development of Vocational Training is highly active in all European countries. In Romania there is still a long way to reach a fair level of skills matching as the continuous training for adults is quite low and tertiary education is attained by a far smaller percentage than the European average.

The general idea upon European Union and also Romania is that there is a relevant part of the population that is over-qualified but not over-skills. This can be translated that though people have more qualifications than required they still lack the needed competences in order to better fulfil their job demands. This leads to inappropriate investments in human capital from the private sector that links directly with the company's performance.

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