THE IMPLICATIONS OF THE WORK FORCE DEFICIT ON THE ROMANIAN CONSTRUCTION INDUSTRY COMPETITIVENESS

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Abstract

In the last couple of years, the sustainable economic growth of Romania has been ascribed also to construction market booming. The prognosis shows that this top position in the GDP growth contribution will be maintained on the short and medium run. The need for infrastructure development of Romania as EU country favours investment in construction not only from local, but also from European funds. A deficit in the quality and quantity of work force is noticed. The determinants of this phenomenon are: the acceleration of the demographic ageing and the emigration of the active work force. But the boom of this phenomenon is also due to the lack of correlation between the existing demand for this industry and the educational offer for various qualification stages. The present paper aims- based on the data processed from an inquiry carried out among the executives from the field- to identify the problems and their implications that this sector faces in terms of competitiveness and formulate validate recommendations to be taken into consideration by policy makers.

Key words: work force deficit, Romanian construction industry, determinants, industry implications, policy

JEL codes: L74, J21, R30, R48

CONSTRUCTION LABOUR MARKET TRENDS

The sustained growth rate of constructions sector needs the support of its most important determinant, namely the workforce. The construction labour market can only considered as an integral part of the total Romanian labour market.

Labour market analysis starts from its components: supply and demand, especially from the dynamic view point of the correlation between the social-economic development as a source of labour demand and population demographics as source of labour supply.

In this paper we focused on the analysis of the employed population's dynamics and structure based on the data derived from a Workforce inquiry titled: „Ancheta asupra forței de muncă (AMIGO)" 2002-2007; carried out by the National Institute of Statistics for two reasons:

- 2000 which is considered the macro-stability year for Romania, since when an annual 5% steady GDP growth has been recorded
- Due to the change of definitions of AMIGO methodology, data after and prior to 2002 are not comparable.

We have therefore considered data only after 2002, in order to maintain consistency of results derived from equivalently measured indicators, yet remaining within the same continuing range that commenced in 2000.

As the growth rate of the construction industry, in general is larger than that of the overall national economy, it is inevitable that labour absorption power of this industry is larger than that of other sectors.

The employed population volume and structure have a certain inertia that restricts its capacity to rapidly adapt to fast emerging conditions, as. it is dependent on the slow demographic change processes and the educational policy whose effects are lagged.

This inertia has resulted in a sizable workforce shortage in the construction industry. In order to explore possible sources that may provide an adequate demand fulfilment, the following sources are considered:

1. graduates of industry specific specialised schools of medium and higher education;
2. reorientation of excess workforce that may be available from other industries through incentive schemes;
3. importation of workforce.

The objectives of this paper are:

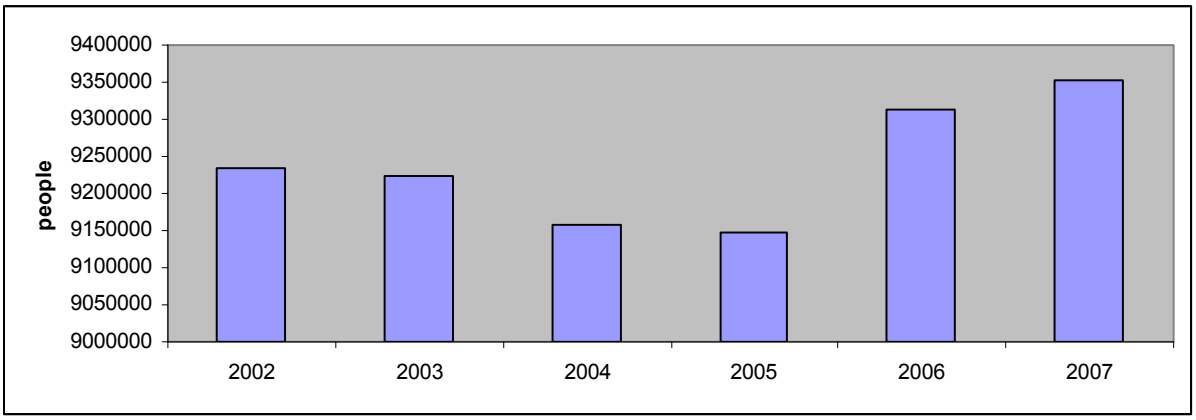
- to identify the workforce sources;
- to identify the shortages of jobs/qualifications based on a pilot-inquiry;
- to recommend possible solutions for the construction industry workforce crisis;
- to highlight critical issues for the attention of appropriate policy makers;

WORKFORCE DEMOGRAPHICS

The Romanian employed population has been continually decreasing between n 2002 and 2005 at an average annual decrease of 29000 persons, amounting in total to 87000 persons over the four years period (see picture no. 1).

Dupa anul 2005 redresarea economica duce la cresterea populatiei ocupate la nivelul economiei nationale.

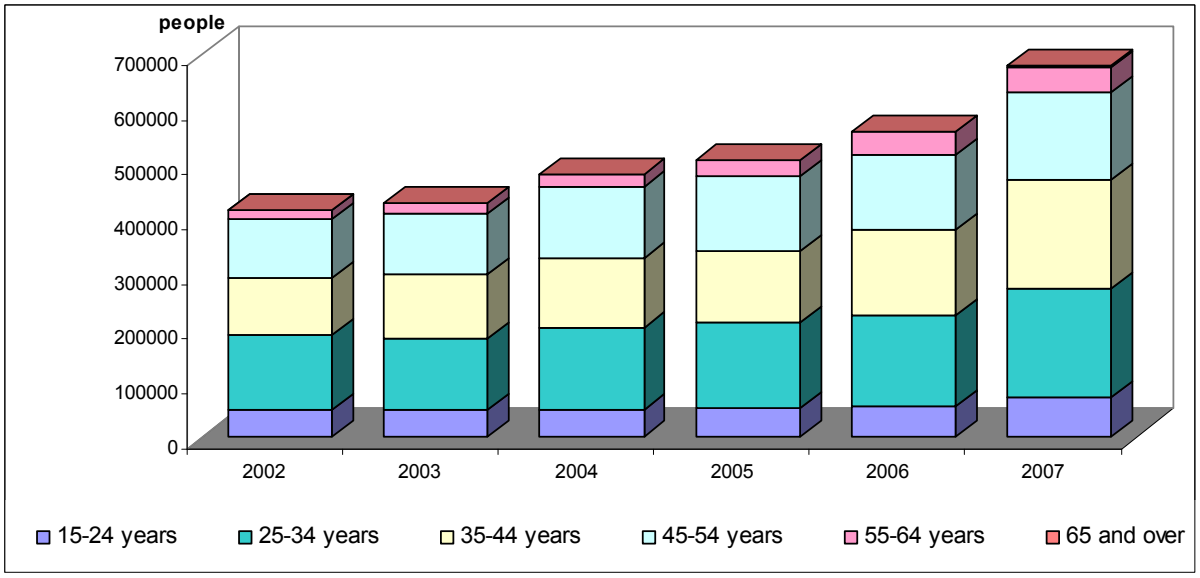
Picture no. 1 Employed population by age groups (period 2002-2007)



Source: AMIGO 2002-2007, INS

The evolution of this indicator for construction industry does not follow the same pattern though (see picture no. 2). The number of employed persons in the construction industry has increased during the same period by 265766 persons (an annual average increase of 53153,25 people/year). This increase has been found to be balanced for all age groups; consequently the structure according to this characteristic did not change from one year to another.

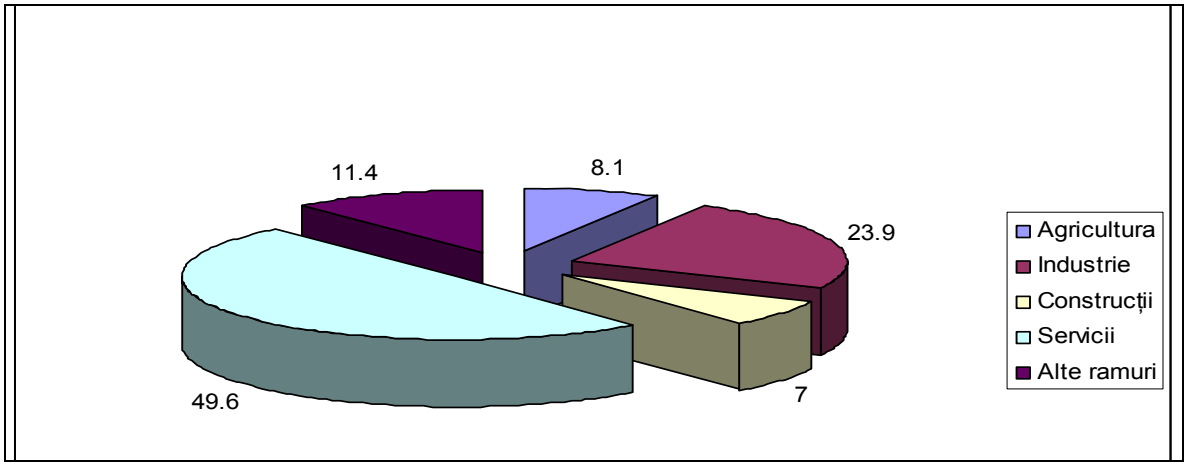
Picture no. 2 Employed population in constructions by age groups (period 2002-2007)



Source: AMIGO 2002-2007, INS

Valoarea adaugata bruta a ramurii de activitate constructii reprezinta 7% din PIB (anul 2006, figura no. 3)) şi a înregistrat cea mai importantă creştere comparativ cu anul precedent, dintre toate celelalte sectoare care contribuie la formarea PIB (fig. 1. 2).

Picture no. 3 Ponderea principalelor ramuri în PIB Romania 2006



Sursa : Institutul Național de Statistică

Specialiştii din Comisia Națională de Prognoză estimează pentru construcții creşteri anuale relative de peste 10% până în anul 2010, după care ritmul anual de creştere s-ar stabiliza în jurul a 9%[1] până în 2013, rămânând şi pe termen mediu cel mai „turat" sector al economiei naționale. În aceste condiții este de asteptat ca necesarul de forta de muncă să aiba aceeasi evolutie atragând în fiecare an un surplus de aproximativ 50000 persoane/an.

Pentru a observa în ce măsură prima sursă considerată: ***tinerii intrați pe piața muncii, absolvenți ai şcolilor de profil, cu nivel de instruire mediu şi superior*** asigură acest necesar am analizat datele prezentate în tabelul nr. 1.

Table no. 1. Construction graduates state of affairs

Specialization type	Year of study							
	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	deviation 2007/2006 compared with 2000/2001
Vocational schools (Construction materials, Constructions mounting)	4185	2522	4304	4300	10322	10331	9499	**5314**
Special vocational schools (Construction materials, Constructions mounting)	649	719	476	649	697	835	520	**-129**
Post high-schools (Architecture, sistematization and construction-mounting)	309	234	189	96	115	87	152	**-157**
Foremen schools (Construction materials, Construction mounting)	306	175	208	165	95	118	174	**-132**
Total vocational schools, post high-schools and foremen schools in constructions	5449	3650	5177	5210	11229	11371	10345	**4896**

[1] http://www.cnp.ro/site/user/repository/0fe953ab78419bec8af2.pdf

Weight in total vocational schools, post high-schools and foremen schools in constructions graduates	4,86	3,78	4,77	5,19	6,55	6,85	6,49	**1,630**
Higher education (Architecture and constructions)	1802	2120	2636	2653	2765	2825	2892	**1090**
Weight in total higher education graduates	2,36	2,27	2,55	2,4	2,55	2,52	2,3	**-0,06**
Total construction graduates	**7251**	**5770**	**7813**	**7863**	**13994**	**14196**	**13237**	**5986**

Source: Statistical yearbook 2006,INS
Caietele statistice :Învăţământul profesional, postliceal şi de maiştri la sfârşitul anului şcolar 2006/2007 şi Învăţământul superior la sfârşitul anului universitar 2006/2007, 2008, INS

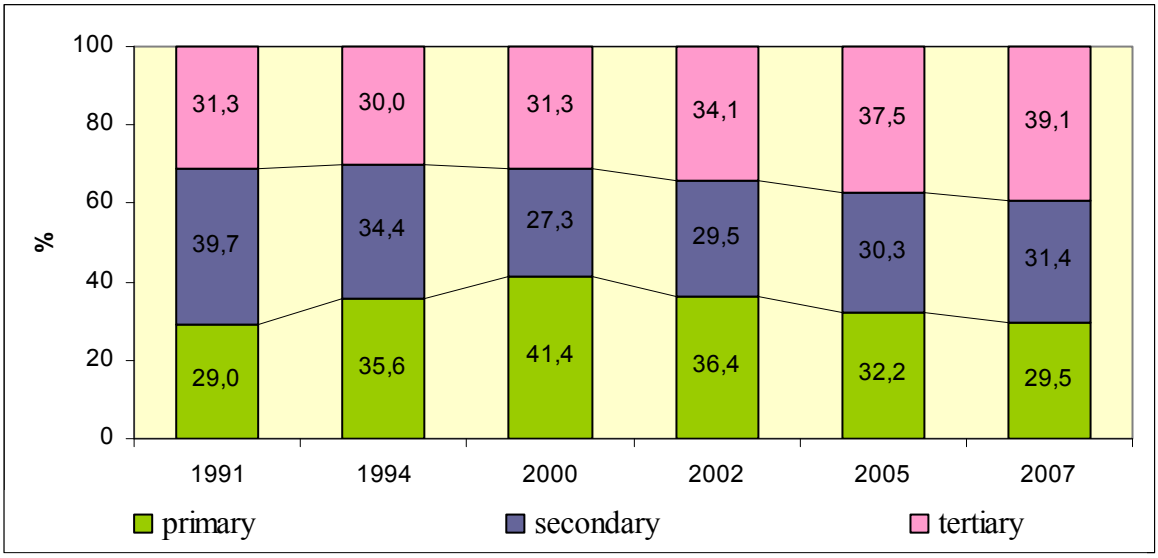
One can firmly deduce from the above facts that the current education system is not fully adapted to the labour market particular demands. In 2006/2007 cei 13237 de absolventi nu au acoperit decat 25% din surplusul de fortă de muncă al anului 2007.

A second option to cover the construction workforce shortage is to attract unemployed people or other available persons from other sectors (characterized by a slower growth or productivity).

The dynamics of the employed population structure after 1990 (see picture no. 4.) is marked by Romania's transition to market economy.

Between 1989 and 1999, well over 2,9 million working places disappeared in the downfallen sectors at that time, amongst which, construction and transportation industries were severely affected , while only 958 thousands of new working places have been created during the same period, mainly in agriculture (400 thousands), trade, real estate activities and the service sectors. The manufacturing industry has suffered a sharp decrease not only from production aspect, but also from workforce shrinkage point of view, which had decreased by up to (24,4%) in 1999, while the agricultural workforce had increased by (41%), to a much larger nominal average, in comparison with OECD countries and other countries in transition.

Picture no. 4 The dynamics of employed population structure on sectors



Source: Workforce balance sheet at 1st January 1992, 1995, 2001, 2003, AMIGO 2005-2007, INS

The economic growth of after 2000 has lead to a structural change of the employed population as a result of secondary and tertiary sector absorption strengthening, thus reducing the weight of employed population in agriculture.

As a matter of fact, the process that started in 1990 is repeating itself, but in opposite direction. The strong development of construction industry, other manufacturing industries and services attract the surplus workforce from agriculture. The process needed though some retraining, re-orientation and re-qualification of the new workforce.

When the workforce shortfall could not be covered from the two sources considered so far; a third source can be explored; that of workforce importation. A competing sector that fast developing at an even more explosive rate; that of the hospitality industry which is capable of absorbing considerable amount of workers of various qualifications in various capacities must surely be a matter of. Concern, especially where neighbouring countries are rapidly growing their tourism industries which itself involves a lot of construction and maintenance demand of the same limited pool of qualified construction industry professionals, where competing workforce shortages in those countries do also prevail.

After 1996 Romania's workforce emigration turned into a true social phenomenon amounting unofficially to 2 million people. The Romanians that work abroad have been recently termed *economic diasporas* and contributes with more than 4 billion euros to GDP in remittances.

According to the Ministry of Foreign Affairs statistics of 2006[2], the majority of Romanian citizens that work legally abroad are in Italy (493793 people), Spain (445000 people), Germany (73000 people), Portugal (43500 people), Austria (42000 people) and Hungary (38739 people). In countries like Hungary, Sweden, France, Great Britain, Belgium and Cyprus there are Romanian communities amounting to some 20 thousand people, while in Ireland, Holland, Greece, Check Republic, Denmark, Slovakia, Finland, Poland and Slovenia, the Romanian communities does not exceed 10 thousand persons. Therefore the total legally registered Romanian emigrants in all the above countries amount to only under 1.226.600.

A large segment of this workforce that has been exported to other countries are specialists of various degrees of skills from the construction profession. As can be gleaned from the EURES portal, more than 70% of all published vacancies on 30th of April 2007 requested construction workers of various kinds, which explains the great momentum of exodus from this particular profession towards other EU countries, especially in view of the fact that the net average salary of a construction worker in Romania is below the already very low average national salary.

In addition, due to the great shortage of construction workers in EU countries, in general, resulting in an ever increasing potential earning for construction workers it can easily be deduced that the great attraction for emigration from this particular industry sector is likely to be maintained.

It is logical therefore to expect that in order for Romania to fill the gap created by such construction workforce exodus, construction companies in Romania would have to import workforce from other countries where the earning potential of such workers is relatively lower than Romania, thereby reversing the momentum.

This trend has already started, albeit not to a large extent, where according to the latest OMFM[3] figures, the majority of migrant force in Romania is sourced from Turkey, followed by Moldova and China, where average wages are relatively lower than those in Romania. Due to proximity and existing business connections as prime factors the weight of such importation from these countries stands at 27,4%, 15,9% and 13,8% respectively.

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[2] Interview of secretary of state in Ministerul Muncii, Solidarității Sociale şi Familiei, Daniela Andreescu, in România Liberă/15 January 2007.

[3] The Romanian (Office of Migrant Workers)

PILOT INQUIRY RESULTS

In the last five years the sustainable growth of Romania's economy is attributed mainly to construction industry's boom. The short and medium term prognosis estimates that this sector's contribution will maintain a top position in terms of GDP contribution.

The need for infrastructure development of Romania as an EU country favours investment in construction financed not only from local resources, but also from European funds Workforce as volume and qualification is not adequate.

The determinants of workforce reduction in this industry as well as for entire Romanian labour market are: workforce accelerated demographic ageing and the work emigration of the active population.

This shortage might provoke a deceleration of the construction industry development. To offset this, one needs to asses the extent of which construction companies are already affected by this phenomenon.

A better understanding of it might allow making validated decisions to ensure through proper and adequate education and training the necessary workforce.

The Construction Ownership Association together with the Academy of Economic Studies of Bucharest have carried out a comprehensive inquiry that aimed at defining the main aspects surrounding construction industry current workforce shortage crisis.

Some methodological considerations

The sample contained 120 construction companies. The methods used for gathering data comprised both indirect; through e-mail, as well as face to face direct interview method at the company's headquarter.

The inquiry's objectives were:

1. To asses to what extent the workforce shortage as volume and missing qualifications is perceived by the construction companies;
2. To identify main shortage areas of professions/jobs;
3. To evaluate the companies' inclination to invest in human resource training;
4. To asses the attitude of construction companies with respect to workforce importation;

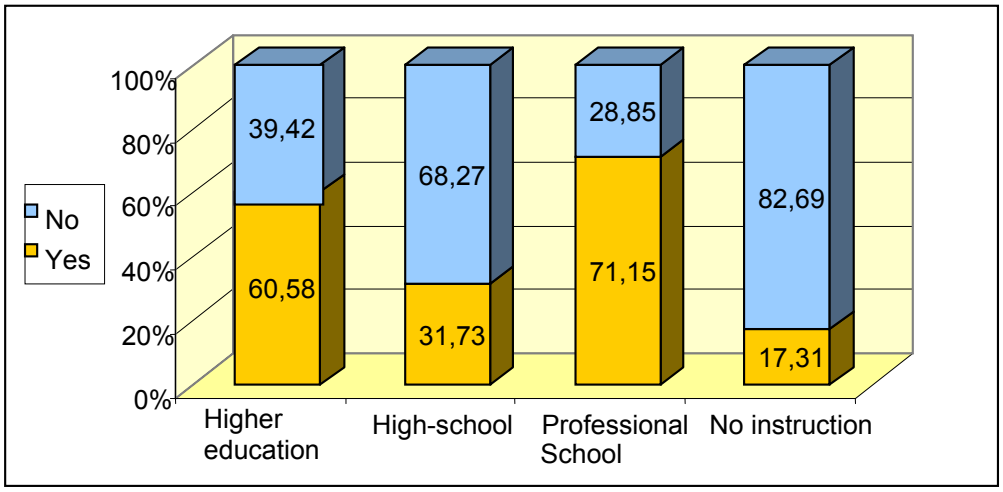
Inquiry's results analysis and interpretation

1st objective: To asses to what extent the workforce shortage as volume and qualifications shortage are perceived and experienced by construction companies;.

The majority of construction companies (95,2%) declare that they were confronted with difficulties due to qualified workforce shortage.

This shortfall holds true not only for the professional schools leavers who obtained a specialized training at (71.15 %), but also is equally applicable to the higher education graduates who indicated a corresponding shortfall of: (60,58%).

Picture 5 Workforce shortfall by level of instruction

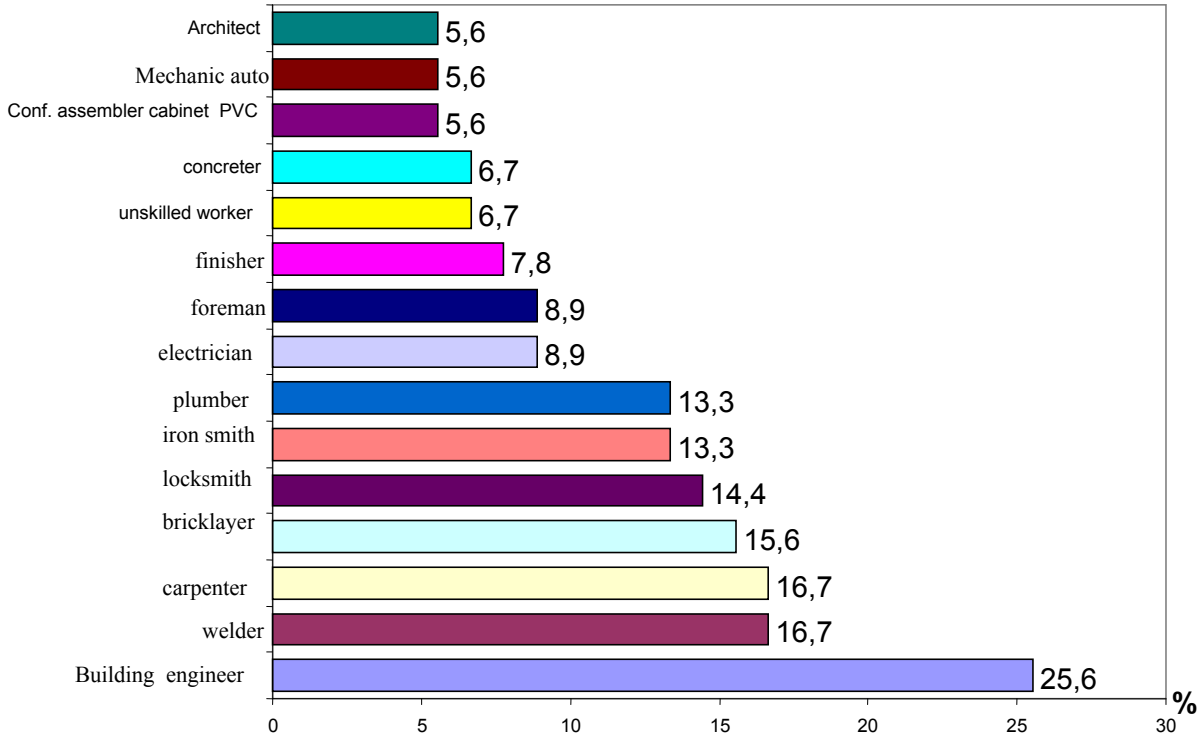


One might consider that this shortfall may severely affect the construction industry development potential as **26%** out of the total construction companies have indicated that they were forced to decline work orders due to lack of availability of appropriate workforce.

2nd Objective . To identify the main shortage areas of professions/jobs.

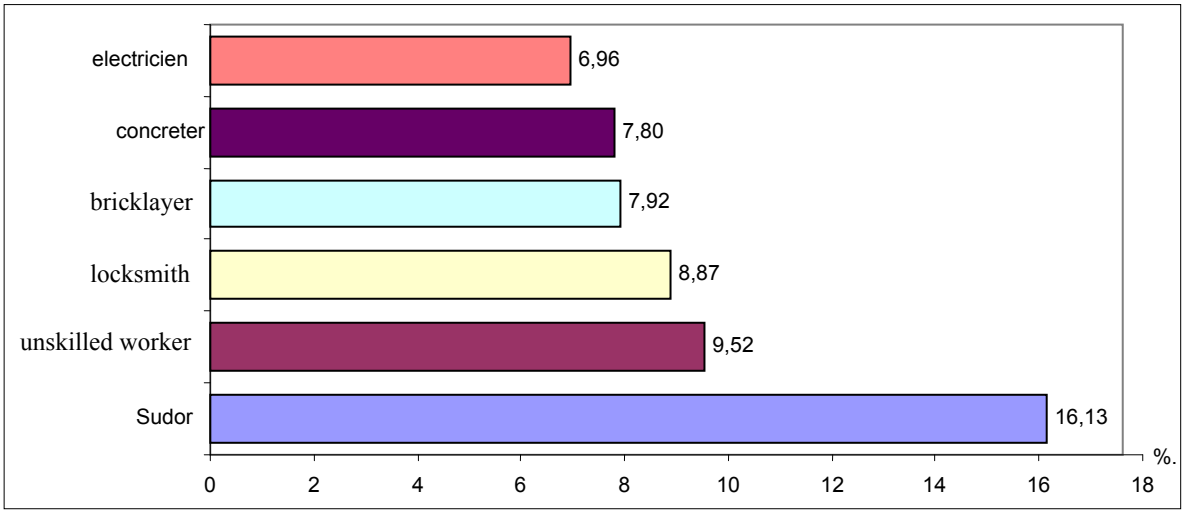
The higher education workforce shortfall is mainly due to the lack of construction engineers as experienced by 25,6 % of the construction companies, as well as architects, as experienced by 5,6% of the companies.

Picture 6 Missing professions / posts by frequency as mentioned by the companies

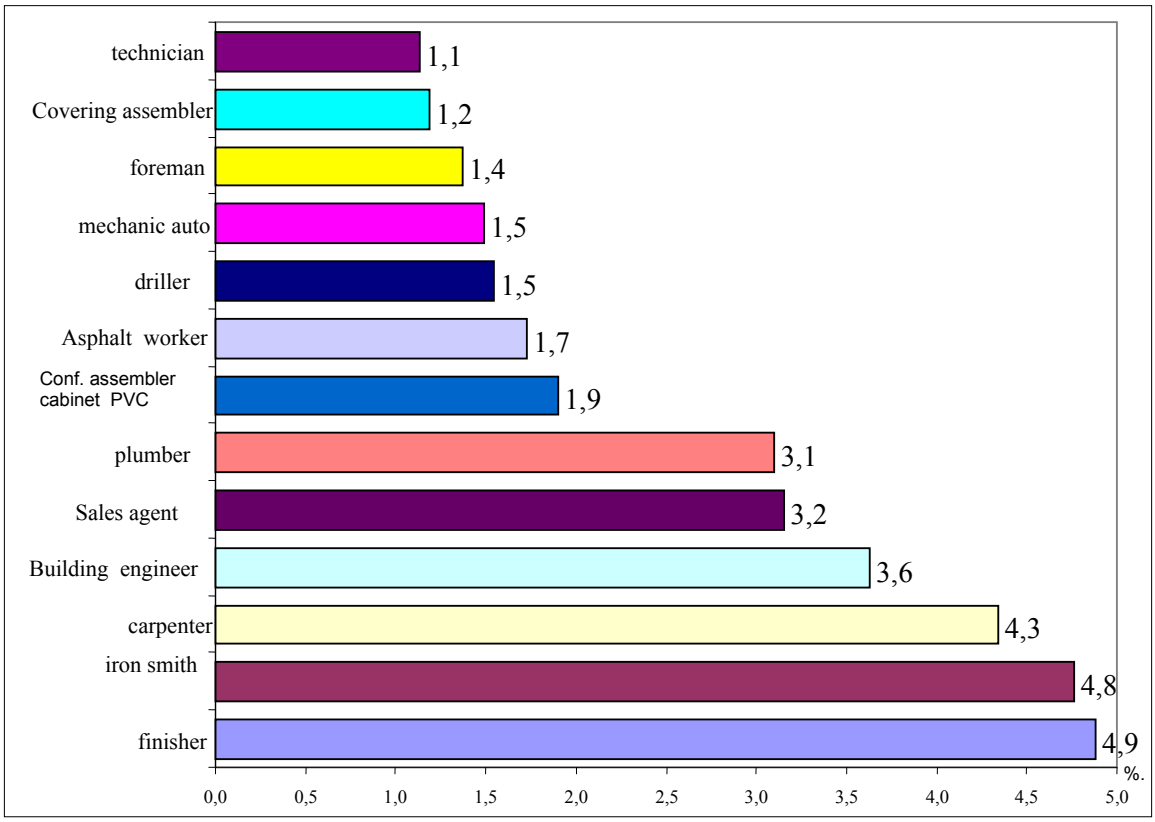


The lack of qualified workers is very severe and affects a broad range of jobs as depicted in picture no. 6. Therefore, 16,7% out of the total companies do not cover their necessary demand of carpenters and welders, while 15,6% can not cover their needs of builders. More than 10% of all companies consider the following qualifications as very difficult to find: a locksmith, an iron-smith, or plumbers in general.

Picture no. 7 Professions with important skills shortage



Picture no. 8 Professions / skills with medium shortfall



As it has already been noted from the analysis of the 1st objective, the non-qualified workforce shortfall is much smaller. Only 6,7% from the sampled companies declared that they are affected by such a shortage.

Of importance for the shortage analysis is not only the frequency these qualifications have been mentioned by the firms, but also by its dimension given by the number of vacancies. For each company employing on average some 170 persons, an average shortage of 17,3 unfilled posts has been recorded, representing 10,18% out of total employed workforce.

Listed in picture number 7, some of the most important skilled professionals in the construction industry, and the corresponding shortfall experience by companies looking to fill vacancies in their domain.

Objective no. 3. The assessment of the construction companies inclination to invest in human resource training .

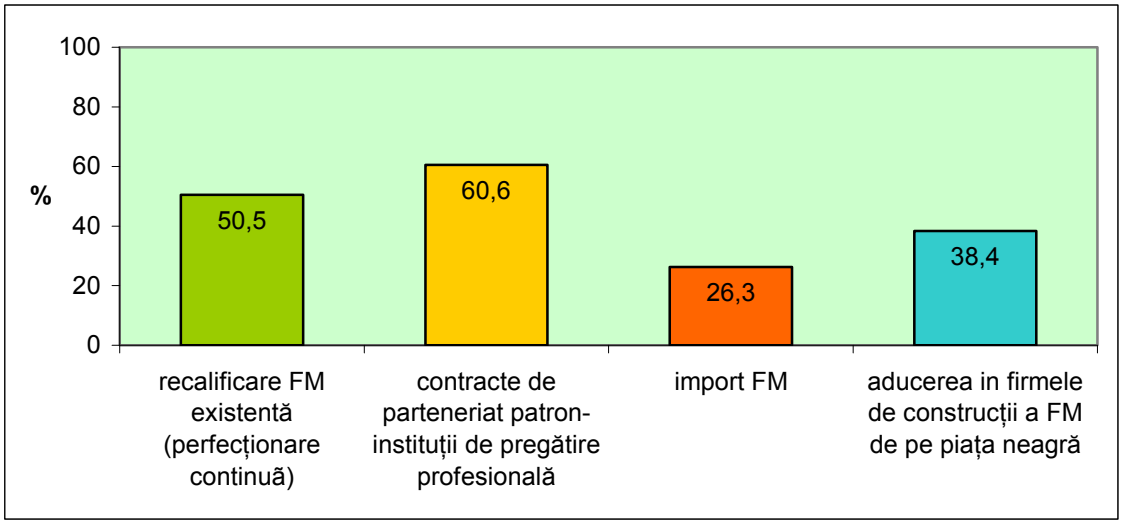
60,6% of interviewed companies perceived that as a viable solution to solve the workforce shortage encountered across the industry is the conclusion of partnerships between businesses and vocational, occupational and educational institutions. The crisis resolution will be facilitated in the medium term by the conclusion of such partnership.

50,5% out of participating companies consider as viable the re-qualification of the existing workforce through on the job continuous training . We understand that the workforce that already work in construction industry and does not have the necessary qualifications (the current modern working methods require continuous improvement) and attracted workforce with other qualifications that are no longer required by the labour market in their corresponding field of activity. Despite that, only 57,7% of the commercial companies are willing to expend resources for the improvement of current workforce. The maximum amount directed toward the improvement of workforce varies between 200 and 10000 RON (60 - 3,000 Euros), with an adjusted average of 1373 RON (400 Euros), per person. Out of the total respondents that mention workforce re-qualification as a viable solution, only 72% are ready to spend money on this. A possible explanation might be the reluctance of the employer that does not have enough leverage to keep a trained employee due to Romanian workforce legislation.

4th Objective. Assessment of construction companies attitude towards workforce importation;

One of Romania's integration into EU resulting phenomenon was the acceleration of the emigration flux from the country towards other European countries. The compounding effect of an ageing population as well as lack of appropriate training opportunities in the field of constructions in Romania has heightened the crisis of workforce shortage in the industry already depleted by accelerated emigration. Another natural opposite phenomena of workforce importation may provide a further contribution to offset the current trend of skilled workforce shortages. Currently there are 20,2% of the interviewed companies who have already opted to import foreign workers, while 26,3% consider that importation of foreign workforce could resolve the current crisis (picture no. 9)

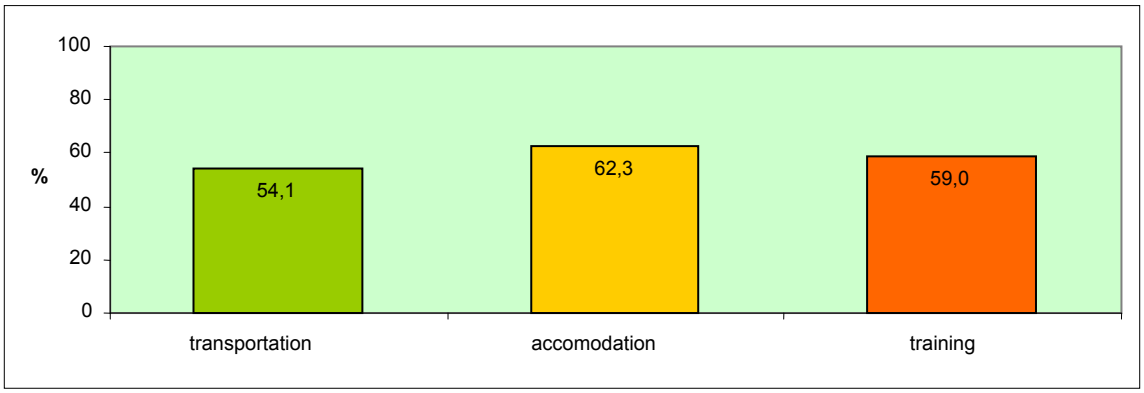
Picture no. 9. Soluții pentru rezolvarea crizei forței de muncă



Ready acceptance of this kind of solution is theoretically prevalent. Due to the prevailing shortage resulting from the booming construction industry in many other countries world wide differentiating aspects relating to technical, cultural or linguistic attributes of the workforce are fast eroding as a natural by-product of urgent and critical need starting from the relatively unskilled level and progressively climbing up the skills level too. This particular phenomenon have been confirmed by up to 91,3% of interviewed firms who have indicated similar experience.

It was found that 80,7% of these firm that have hired foreign workforce recently have done so directly while only 19,3% have had to rely on professional forms to meet their recruitment needs.

Picture no. 10. Expenses types for imported workforce



Even though 64,4% of companies management indicated their preparedness to cover various expenses associated with transport, accommodation and reorientation, confirming the general trend and the desperate need in the field in general, those who did not show preparedness are well established in the field and planned ahead with incentive schemes for employee retention, re-skilling and redeployment or on the other end of the scale they could be those who are newly entered the industry with the natural influx to meet the growing demand whoa re alien with industries intricacies and specific knowledge in the medium to long term and who are likely to face the music later and either participate in the same trend of

importation or develop retention schemes of their own or otherwise opt out altogether as a natural fallout as they cannot meet their work fulfilment requirements
The distribution of the demands associated with workforce importation range from 54.1% for transport needs rising to 59% for reorientation needs and maximizing at 62.3% for accommodation needs which are normally the most crucial ones for a foreign worker as picture no. 10.

CONCLUSIONS AND RECOMMENDATIONS

1. Construction sector growth rate exceeds that of the total Romanian economy resulting in a great deal of demand that can only be satisfied through redeployment from other sectors of economy in addition to an inevitable further importation of additional workforce from abroad.

2. According to macroeconomic forecast the rate of growth of this sector shall continue resulting in corresponding increase in demand for workforce which requires particular attention in identifying additional sources to satisfy prospective demand, especially as the high degree graduates specialized in this sector will be expected to cover only 51,7% of future demand and even a lower percentage of 28,4% of sub graduate level.

✓ An additional opportunity to satisfy part of the shortage resulting from above is the redeployment of workers from other sectors that have undergone downsizing or reorganization resulting in unemployed surplus workforce who will need various degrees of reorientation.

✓ In such case where the two domestic sources above could not satisfy the anticipated demand for workforce in that sector, the external source of workforce would have to be called upon. Even though at this moment on time active companies in the sector do not have a significant experience with foreign workforce utilization, they are nevertheless open to such a solution if the needs so demand.

3. The workforce shortage is having a negative effect on construction companies not only at graduate level but especially at basic entry level resulting in an estimated 10,18% employed workforce shortage forcing the deceleration of project completions.

4. Future needs for the industry may be better satisfied through the establishment of partnership and better coordination between business and education institutions both for increasing future specialized graduate output as well as professional training and reorientation of existing workforce. With that in mind a possible recommendation for future collaboration may entail:

✓ provision of practical incentives offered by construction companies such as paid scholarships and internships/apprenticeship schemes at entry level to attract school leavers to consider a career in construction industry.

✓ While the primary objective of total education system should be the production of anticipated skilled workforce by future economic needs of the country, short term distortions can only be met through active intervention by industry players as above. Modern economies rely therefore on re-skilling and re-orientation of surplus workforce from restructured sectors to satisfy others that are experience shortfalls. Therefore resulting in a multi-skilled workforce in general capable of been redeployed at short notice to meet an ever increasing rate of change in a fast and dynamic modern economy.

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