



Is There a Human Capital Effect on Real Estate?

Stefania-Cristina Curea

The Bucharest University of Economic Studies, Romania

Lucian Aron Belaşcu

“Lucian Blaga” University of Sibiu, Romania

Abstract

Sustainable development represents an important goal for emerging economies. The main engine for this development is innovation, which is generated by human capital accumulation. For the real estate industry the growing importance of human capital and the war to preserve and attract the most talented people, the kind of people able to drive innovation, growth and economic success in a global economy, are essential to developing the type of assets that are capable to attract the best tenants and to offer the highest return on investment

Real estate strategies focused on recruiting and retaining talent are also contributing to significant changes in real estate market fundamentals and these changes could have profound implications for where and how people work for a generation.

The purpose of this paper is to explore how human capital is affecting Romania's real estate sector. Our hypothesis is that there are structural changes in how current real estate buildings are being developed in order to be correlated with current expectations and needs from the new generation of employees.

Keywords: Human capital, real estate market, employee generation, workplace, Romania

Introduction

Investment in human capital is one of the most profitable types of investment for any community that is set on the path of sustainable socio-economic development. The future belongs to countries that are able to create an environment that supports innovation and whose resilience depends on the existence of a high level of investment in human capital. Innovation requires a number of factors that allow new ideas to be brought to market and for innovation to unleash its full potential is critical to have the right human capital.



However, for the success of innovation, besides the adequate human capital, other factors are needed, such as: socialization, concentration, learning and collaboration.

The purpose of our research is to explore how human capital is affecting real estate with a discussion on Romania's particularities. Its main objectives are to study the human capital challenges the country is confronting with and to connect these challenges to the real estate markets changes. Moreover, we discuss the real estate industry role in recruiting, retaining, and engaging talent.

As the field of research is relatively new, there is a rather limited number of studies that address this link between human capital development and the real estate market. We briefly present the existing body of research and outline its main findings.

A large body of research (Glaeser et al, 1995; Simon, 1998; Simon and Nardinelli, 2002; Glaeser and Shapiro, 2003; Simon 2004; Shapiro, 2006) studied the human capital and agglomeration effects. They support a positive relationship between city size and growth in employment and population. Studies also support a positive (although varying in magnitude) relationship between city size and wages (Glaeser and Maré, 2001; Wheeler, 2001; Wheeler, 2006; Di Addario & Patacchini, 2008). Moreover, Rauch (1993) makes the argument that cities with higher levels of human capital have higher wages and land values.

Shapiro (2006) analyzes the effects of human capital on rents and house prices, finding stronger effects than on wages. The author has developed a model that shows that "60% of the effect of human capital on employment growth is due to increased productivity, with the remaining effect being a consequence of a relationship between concentrations of human capital and increased quality of life".

Glaeser and Berry (2006) show that the importance of attracting educated households is illustrated by a positive relationship between wages, population and educational attainment.

In a recent paper Donner et al. (2018) present an analysis of the potential benefits of digital cities for real estate development decision making. They conclude that cities that can create excess demand are going to experience increasing property value. Therefore, the policy of attracting human capital will have a direct impact on real estate values.

Closely related to levels of human capital and a possible proxy for real estate development is the presence of knowledge intensive industries or universities who promote firm innovation.

Andersson et al. (2009) estimate that half of productivity gains have been found in the vicinity of universities. Audretsch et al (2005), examining high tech start-up location



choices in Germany, have found that such firms locate near universities to access knowledge spillovers. Acs et al. (2002) found that both university research and industry R&D have a positive effect on patent activity. Autant-Bernard et al. (2013) confirm that technological knowledge is a principal input to R&D activity, as knowledge spillovers positively impact firm productivity.

In this framework, our research investigates the real estate development in Romania in connection with the human capital challenges. The paper is organized as follows: Section 2 presents the data and research methods used, Section 3 addresses the human capital transformations in recent years, Section 4 analyses the real estate market development in Romania mainly after the Global financial crisis, while Section 5 discusses the implications of human capital transformations and for the future development of real estate in our country. The last section outlines the most important ideas advanced by our research and suggests directions for future research.

2. Methods

The research methodology applied in this study is based on the collection and analysis of statistical data. The data was collected from official resources, mainly EUROSTAT, World Bank and Romanian Statistical Yearbook. We collected data on demographic evolutions (past and projections) and on real estate market development. Further, data has been structured in order to support our research.

Unfortunately, there is a lack of information on the real estate sector for Romania, which makes difficult for any researcher to pursue in-depth analyses, but we believe that our endeavour is useful and instructive.

3. The Human Capital Challenge

At the Conference Board CEO Challenge (2017), human capital is ranked as the most important business challenge faced by today's global CEOs. Businesses are also facing the unavailability of talents in the marketplace. Withdrawing the first generation of baby boomers will generate a significant imbalance between supply and demand in Romanian labor force. While baby boomers are leaving the working age population, they will continue to demand a significant amount of material goods and services from the economy. In short, business demand will continue to grow, while the ability of businesses to produce will become tense.

Figure 1 and Figure 2 highlight the annual change in the Romania labor force (age 1564) between 2005 and 2017 and the projected annual change in the Romania labor force (age



15-64) between 2018 and 2070. The figures show the downward trend of the working age population, which will cause an imbalance between supply and demand for labor force. This imbalance between supply and demand for labor force in the Romanian economy will increase the competition for talent, which in turn, will lead to compensation costs and ultimately will influence corporate profitability. Thus, finding the right talent to fill vacant positions within organizations will become more difficult and significantly more expensive.

Figure 1: Romania working age population (age 15-64, in thousand), 2005-2017

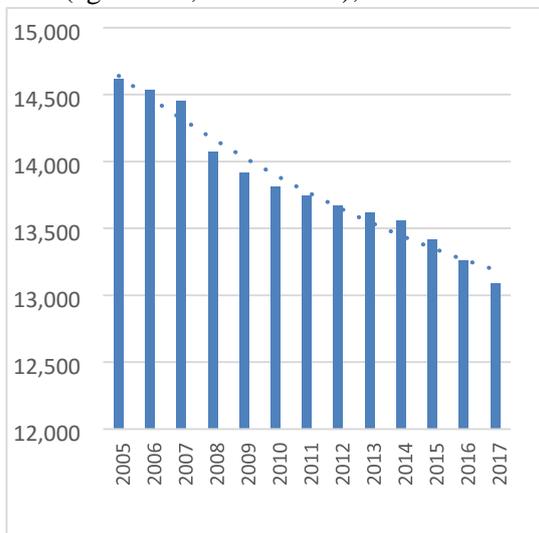
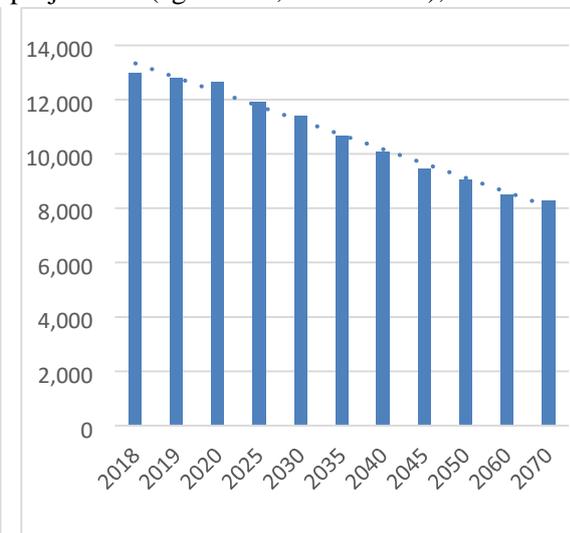


Figure 2: Romania working age population projections (age 15-64, in thousand), 2070

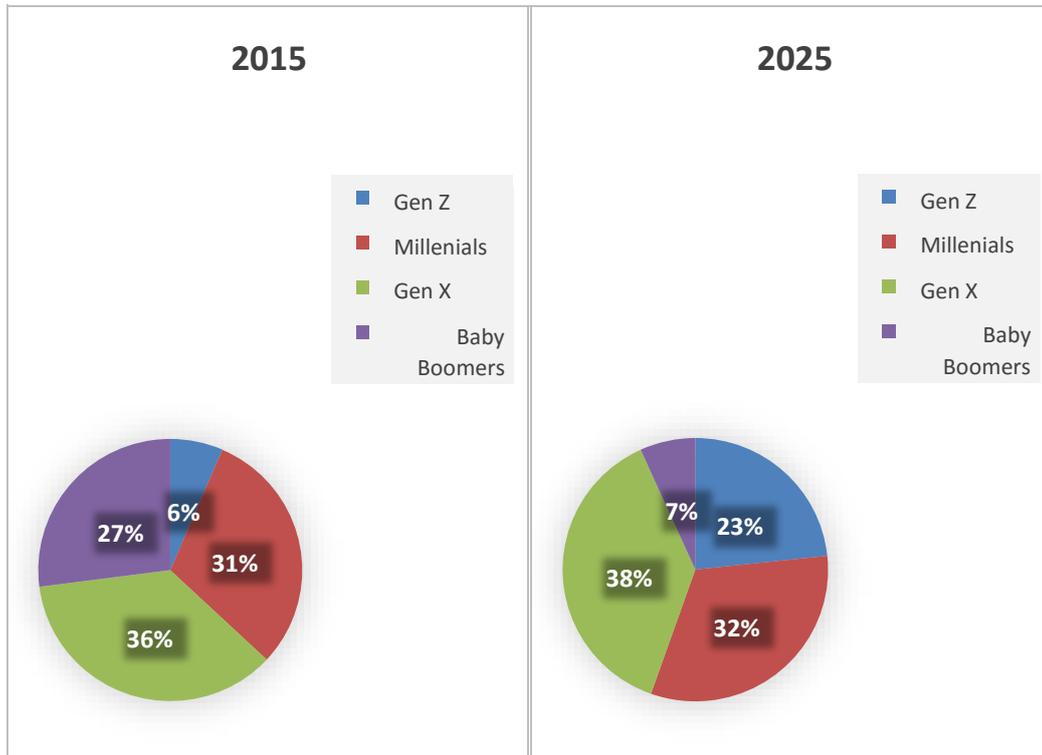


Source: Authors based on Eurostat data

Global statistical overview of generations, including Millennials, Baby Boomers, Generation X, and Generation Z. Generation names and ages are defined somewhat differently by country and/or region. Approximately, the following generation names and age names are considered global generations: Baby Boomers: 1946-1964, Generation X: 1965-1976, Millennials: 1977-1997, Generation Z: After 1997.

The main groups responsible for defining the current workplace in Romania are Baby Boomers, Generation Z and Millennials, generations who are different in terms of their perspectives and set of values (see Figure 3).

Figure 3: Demographics of Romania workforce shifting



Source: Authors based on Eurostat data

Boomer workplaces have dominated until recently. These are now replaced by the Millennials workplaces, also known as Creative Workspaces. This new type of workspace burnt in avant-garde areas, such as creative environments, design and advertising agencies in alternative, entrepreneurial, cities, is now a pervasive condition that exists across the world and is desirable for all types of industries and organizations, including tradition-heavy professional service and financial service firms. The fundamental shift from the button-downed Boomer perspective on work to the freewheeling Generation Z and Millennial perspective can be explained as a shift from desiring Live/Work Balance (Boomers) to Live/Work Integration (Millennials) (Figure 3).

Boomer workplaces have dominated until recently. These are now replaced by the Millennials workplaces, also known as Creative Workspaces. This new type of workspace burnt in avant-garde areas, such as creative environments, design and advertising agencies in alternative, entrepreneurial, cities, is now a pervasive condition that exists across the world and is desirable for all types of industries and organizations, including tradition-heavy professional service and financial services firms. The fundamental shift from the button-downed Boomer perspective on work to the



freewheeling Generation Z and Millennial perspective can be explained as a shift from desiring Live/Work BALANCE (Boomers) to Live/Work INTEGRATION (Millennials) (see Table 1).

Table 1: Baby Boomers vs. Millennials

| | |
|---------------------|---|
| Baby Boomers | <ul style="list-style-type: none">• Hierarchy• Commanding• Instruction• Control• Employee |
| Millennials | <ul style="list-style-type: none">• Community• Coaching• Dialogue• Empower• Entrepreneur |

Source: Adapted from Weingarten, 2015

Large and small businesses have adapted and modified their corporate structure to better align with the Millennial perspective. These have shifted from hierarchy to community, from command to coaching, from training to dialogue, from control to empowerment and from employee to the entrepreneur. This structural change results in a culture of experience where authenticity, diversity, well-being and interconnectivity are highly valued and contributes to informing about the kind of place and common purpose that a Millennial workplace needs to emulate.

4. Real Estate Markets Are Changing

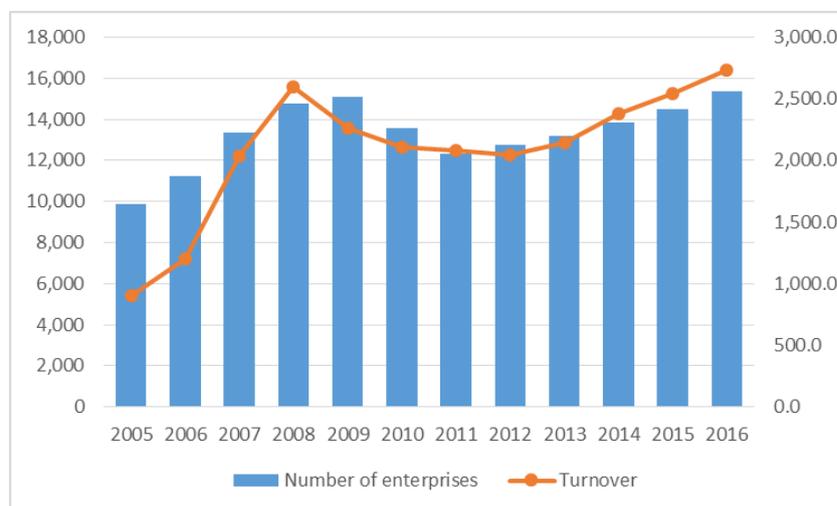
Seriously damaged by the global financial crisis (2007-2009) and the European Union recession that followed until 2011, the real estate in Romania shows the attributes of a market in a changing process after 2008. With a share of 9.13% in the total value added



and 5.40% in total output in 2016, the real estate sector is one of the most dynamic in the last years, in an attempt to recover from the problematic years after 2008.

Figure 4 shows the evolution of the real estate market in Romania in terms of number of enterprises and turnover after 2005. It is easily observable the surge in both indicators until 2008 (for turnover) and 2009 (number of enterprises), when the industry reached its peak in the post-communist period, but also the drop recorded by both number of enterprises and turnover after these years until 2011. After this year, the industry recovered slowly and has managed to return to the 2008 values in 2016.

Figure 4. Real estate market in Romania: number of enterprises and turnover, 2005-2016



Note: Turnover in million euro and on the secondary axis (right)

Source: Authors based on Eurostat data

At the same time, the industry profitability's evolution, measured by the gross operating surplus¹ (see Figure 5) displays a different pattern after 2008, as its recovery was slower than the one of turnover until 2014, but afterwards it declined towards 2009 level in 2016. This might be explained by the personnel costs that were not adjusted to turnover and value added evolution after 2008. On the other hand, the last two years captured in Figure 6 indicate a solid dose of optimism of the real estate industry concerning the future, as the levels of Gross investment in tangible goods increased

¹ Gross operating surplus is defined as the difference between value added and personnel costs. See, in this respect, Eurostat Statistics Explained.



significantly in 2015 and 2016, beyond any previous levels (they were even higher than the 2008 values). Another interesting observation is that gross investments were highly positively correlated to gross operating surplus until 2009 – this indicates that profits were the main source of financing for investments – but this correlation becomes slightly negative until 2014. Moreover, the difference between investments and surplus increases significantly in 2015 and 2016, signaling the presence of other major financing sources than profits for business in the industry.

Figure 5. Real estate market in Romania: Gross operating surplus and Gross investment in tangible goods, 2005-2016 (millions euro)

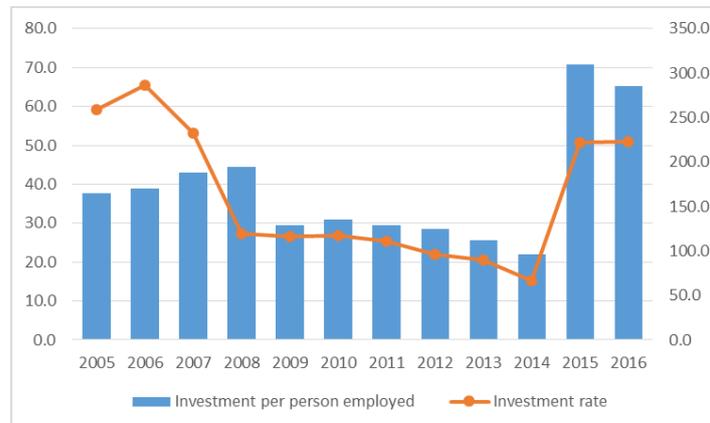


Source: Authors based on Eurostat data

Figure 6 confirms the same industry optimism in 2015 and 2016; the investment per person employed increased more than threefold in 2015 compared to 2014 (but it declined in 2016), while the investment rate² remains at high levels compared to 2014 both in 2015 and 2016 (its values are almost four times higher).

Figure 6. Real estate market evolution in Romania: Investment per person employed and Investment rate, 2005-2016

² Investment rate is defined as the gross fixed capital formation divided by gross value added. See Eurostat Statistics Explained.

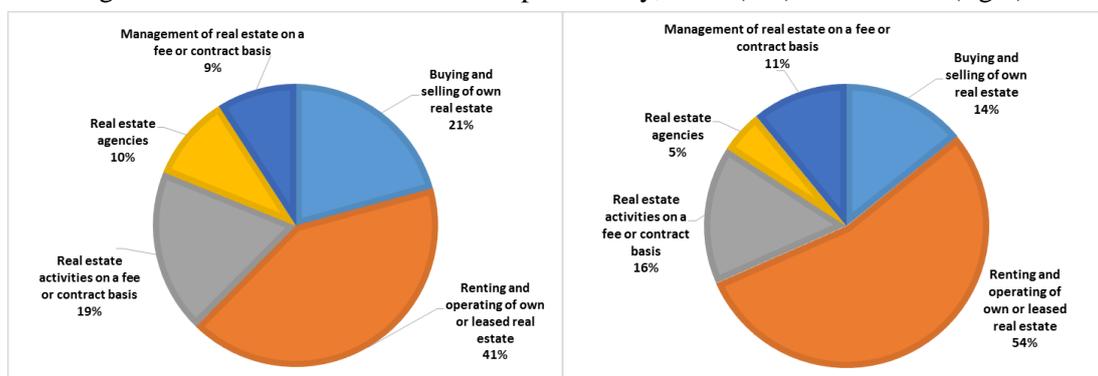


Note: Investment per person employed in millions euro; Investment rate in percentages and on the secondary axis (right).

Source: Authors based on Eurostat data

Besides these overall trends, the Romanian real estate industry is undergoing through noteworthy changes at the level of its main components when one compares 2008 to 2016 – we illustrate these changes in Figures 7 to 9. First, although the most important activity – “Renting and operating of own or leased real estate” – dominated the industry back in 2008, its turnover represented more than half of the total industry turnover in 2016. Actually, only this activity and another one – “Management of real estate on a fee or commission basis” – record an increase in importance in the total industry turnover between 2008 and 2016; all the other activities have seen their share in turnover declining. i.e. “Real estate agencies” share in turnover declined from 10% to 5%, while the share of “Buying and selling of own estate” dropped from 21% to 14%.

Figure 7. Real estate market turnover per activity, 2008 (left) versus 2016 (right)



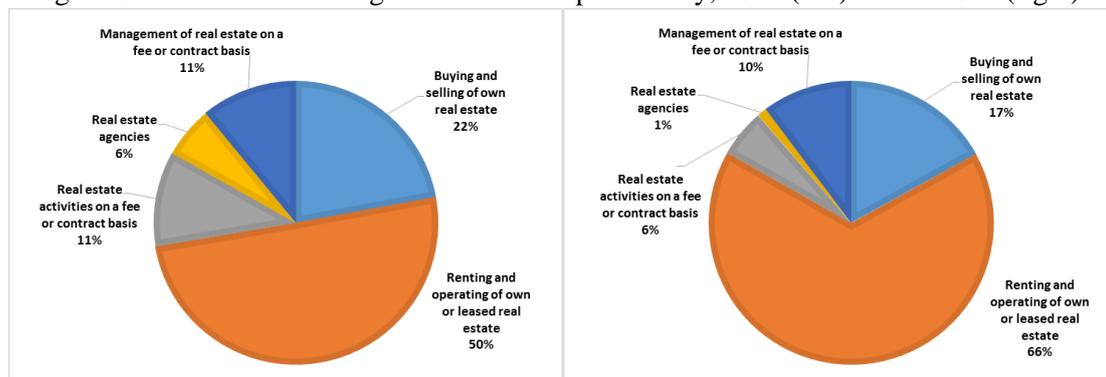
Source: Authors based on Eurostat data



The different dynamics of the real estate sector components has direct consequences on the investments structure and propensity. As Figure 8 shows, “Renting and operating of own or leased real estate” increased their share in gross investments in the real estate industry from 50% in 2008 to a rather extraordinary 66%, a dynamics matched by no other type of activity in the industry – actually, all the other activities diminished their share in gross investment between 2008 and 2009.

On the other hand, the investment rate values of the different types of activity within the real estate industry shows categorically that “Buying and selling of own real estate” became in 2016 the activity with the highest predisposition towards future expansion (its value is above 350%), thus overcoming the “Renting and operating of own or leased real estate” as the main performer from the investment rate perspective. This signals a shift in the manner real estate will further develop in Romania, in our view, marked by the advent of younger generations with different views over the quality of their working life, shopping styles and family.

Figure 8. Real estate market gross investment per activity, 2008 (left) versus 2016 (right)



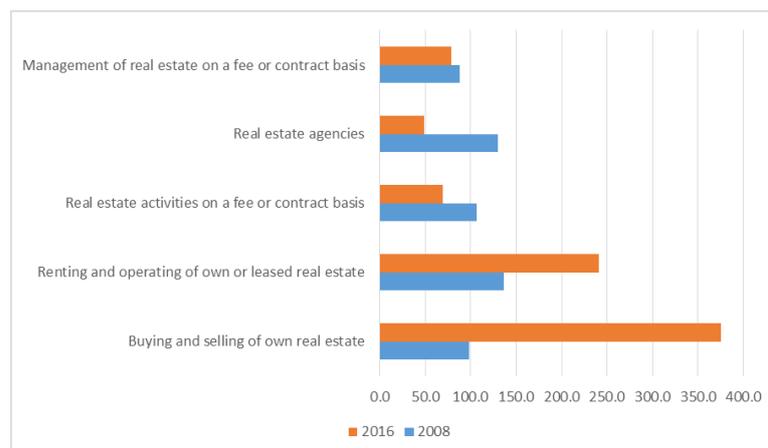
Source: Authors based on Eurostat data

A better and more thorough outlook of the real estate market development in Romania is offered by its progress in the main regions of the country from the GDP per inhabitant point of view – these are Bucharest-Ilfov (where the capital of the country is located), North-West (with Cluj as the main city, but also Oradea), Center (it includes two very dynamic cities, Brasov and Sibiu), West (with Timisoara and Arad) and South-East (a



region that hosts Constanta, the main city on the Black Sea shore)³. Figure 10 shows the clear dominance of the Bucharest-Ilfov region – this does not come as a surprise, given that the capital of the country is in the region, but also that many businesses are incorporated in this region, although their effective activity is located elsewhere in the country – followed by North-West, West and Center regions (with a similar number of units) and then South-East. At the same time, we notice in Figure 10 the drop in the market development until 2011, followed by a rather slow recovery – only in 2016 the number of real estate units has returned to its 2008 level (with the exception of the SouthEast region).

Figure 9. Investment rate in real estate in Romania by activity, 2008 versus 2016



Source: Authors based on Eurostat data

Another perspective on the development of the real estate market in the main Romania's regions is illustrated in Figure 11, which is similar to Figure 10 but it shows the evolution of the number of employees in real estate businesses between 2008 and 2016. The main remark here is that employees remained at lower levels compared to 2008

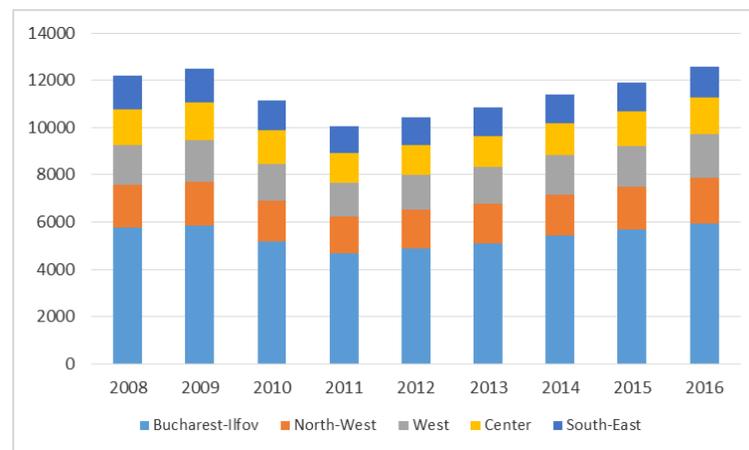
³ At the end of 2016, GDP per inhabitant for these regions was the following: Bucharest-Ilfov – 20,500 euro; North-West – 7,600 euro; Center – 8,000 euro; West – 8,900 euro; South-East – 7,400 euro (Eurostat).



in almost all regions (with the exception of the Center region), which might signal that Romanian real estate businesses have restructured and understood the lesson of the crisis⁴.

Unfortunately, the lack of data impedes an in-depth analysis of the real estate market development in these regions, but it is worth mentioning the fact that the most important Romanian cities' dynamics and development rhythms, fostered by the requirements of the younger generations, as mentioned above, will certainly change the real estate landscape from both housing and office perspectives.

Figure 10. Development of real estate market in the main regions – number of real estate units, 2008-2016



Source: Authors based on Eurostat data

The businesses' search for talented workforce has already impacted real estate property types and market dynamics. In Romania, the real estate markets located in the big cities and metropolitan area offer occupants a better chance of supporting talent and

⁴ The CAGR (compound annual growth rate) varied between 1.46% and 5.27% for the number of units and between -2.25% and 0.54% for the number of employees across the main five regions, between 2008



innovation. In a recent report, BNP Paribas names Romania “The rising star of CEE” (BNP, 2018), given the country’s opportunities in the commercial property market and the boom in the office segment accompanied by growing investment volumes either in retail or various industries. Moreover, the same report considers that “Bucharest continues to have the largest pipeline of new projects due to the development of the office

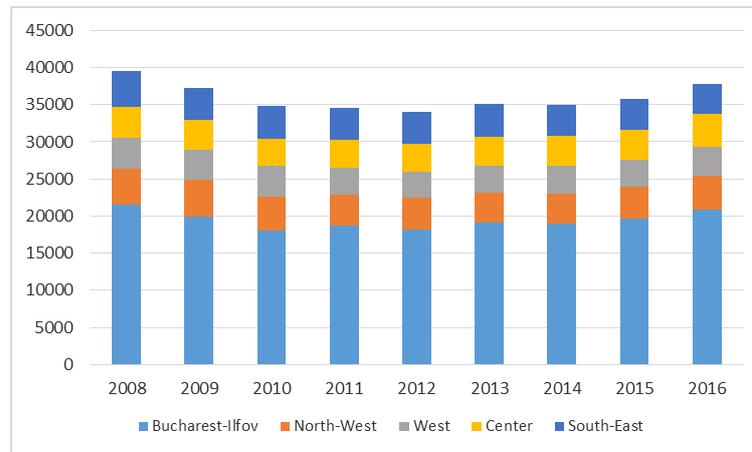
and 2016.

market, industrial, but also residential sectors. Cities like Cluj-Napoca, Iasi, Timisoara or Brasov are following closely behind and we believe the pace of development in these cities will accelerate in the coming years.” (BNP, 2018, p. 5).

In this framework, it is interesting to note that the potential of the most important Romanian cities has not been yet fully used and factors such as the high number of students, low employment rates, still low wages compared to other European Union countries and cities (see Table 1) are the key drivers of the future real estate market development. Moreover, two of these cities are included in the Innovation Cities Index™ 2018⁵: Bucharest is on the 157th position out of 500 cities, with an upward move of 48 positions since 2017, while Timisoara is on the 430th position, but with a downward move of 27 position.

Figure 11. Development of real estate market in the main regions – number employees, 2008-2016

⁵ Based on Innovation Cities™ Program, available at <https://www.innovation-cities.com/innovationcities-index-2018-global/13935/>. The Index is based on 162 indicators relevant for modern cities that take into account cultural assets, human infrastructure and networked markets.



Source: Authors based on Eurostat data

Table 1. Main Romanian cities key facts

| | Bucharest | Cluj-Napoca | Timisoara | Brasov |
|--------------------------|-----------|-------------|-----------|---------|
| Population | 2,104,967 | 323,108 | 331,000 | 290,167 |
| Unemployment rate (2017) | 1.5% | 2% | 1.0% | 2.8% |
| Students | 172,038 | 67,262 | 40,002 | 21,296 |
| Average gross salary | €683 | €601 | €594 | €547 |
| Innovation Index (2018) | 40 | na | 30 | na |

Note: na – not available

Source: National Institute of Statistics; BNP, 2018

5. The Real Estate Role in Recruiting, Retaining and Engaging Talent

Despite a future that will certainly be altered by robot work and artificial intelligence, maintaining a talented workforce is essential for our economy to achieve its true potential. For the real estate industry the growing importance of human capital and the battle to preserve and attract the most talented people, the kind of people able to drive innovation, growth and economic success in a global economy, are essential to developing the type of assets that are capable to attract the best tenants and to offer the highest return on investment. So, the real estate has an important role in assisting the corporations with recruiting, retaining and engaging labor. This role is highlighted by



changing the workplace designs that help foster greater collaboration and give birth to new ideas, amenities that enhance work/life balance.

Workplaces must support innovation and act as intra-organization cultural touchstones. The design of the workplace is driven by the idea that talent must collide as often and as spontaneously as possible throughout the workday. Despite all the interactions people experience on a daily basis that technology facilitated (email, social networking etc.), research suggests that the highest impact on idea generation and knowledge sharing still occurs from direct, face-to-face, contact (Noorderhaven and Harzing, 2009). As such, in order to facilitate interaction between colleagues the design of the workplace must have bigger floor plates, more open work areas and more interconnections between floors.

In this framework, the new high-performance buildings must simultaneously be: (i) innovation accelerators (by promoting hyper-collaboration and connectivity; by attracting talent; by being mobility platforms; by promoting technological enhancements); (ii) community integrators (by being pedestrian oriented, close to transit areas, amenity rich, be constructed from local indigenous material and by promoting sustainable practices); (iii) brand beacon (encouraging brand identity and client desired experience, creating a sense of pride and ownership, promoting a shared purpose); and (iv) cultural touchstone (through authenticity, an engaged workforce, through their role as recruitment tool and by reflecting firm value) – see, in this respect, “Digital Transformations in business and society”, a report of the Chambre de Commerce Luxembourg (2016).

For the real estate industry, these changes in how companies interact with their employees require a massive change in what key metrics the industry relies upon to inform the design of new workplaces. It applies to how the industry evaluates the efficacy of new and existing buildings, from their cores and shells to the design of their interiors. If we accept the notion that workplaces must contribute to accelerating innovation and function as intra-organization cultural touchstones, we can better understand the impact traditional design considerations are having on speculative development.

Concluding Remarks

The real estate sector plays an important role in helping the enterprise with recruiting and retaining labor, primary through the workplace designs that contribute to better collaboration and give rise to new ideas.



Real estate strategies focused on recruiting and retaining talent are also contributing to significant changes in real estate market fundamentals and these changes could have profound implications for where and how people work for a generation.

To use real estate as a talent recruitment and retention tool, occupiers must determine the best markets today and in the future, consider a workplace strategy as a way to contain occupancy costs before compromising on the quality of labor, know the importance of the employee experience to your current and future workforce and consider even slight differences between submarkets that can make or break a project.

In the same way, investors must Integrate work, life, and play into existing and new developments, consider a reverse site-selection analysis that assesses the competitive advantages of the property, the industries it is best-suited to attract, and the ideal strategy for maximizing its marketability and occupancy and consider ways to improve access to the property.

References

- Acs, Z. & Anselin, L. & Varga, A. (2002). Patents and innovation counts as measures of regional production of new knowledge. *Research Policy* 31 (7), 1069–1085. doi: doi.org/10.1016/S0048-7333(01)00184-6
- Andersson, R. & Quigley, J. & Wilhelmsson, M, (2009). Urbanization, productivity, and innovation: Evidence from investment in higher education. *Journal of Urban Economics*, 66 (1), 2-15. doi: 10.1016/j.jue.2009.02.004
- Audretsch, D. & Lehmann, E. & Warning S. *University spillovers and new firm location.*" *Research policy*, 34 (7), 1113-1122. doi: 10.1016/j.respol.2005.05.009
- Autant-Bernard, C. & Muriel, F. & Nadine M. (2013). Knowledge diffusion and innovation policies within the European regions: Challenges based on recent empirical evidence. *Research Policy* 42 (1), 196-210. doi: 10.1016/j.respol.2012.07.009
- Di Addario, S. & Patacchini, E. (2008). Wages and the city. Evidence from Italy. *Labour Economics* 15 (5), 1040-1061. doi: doi.org/10.1016/j.labeco.2007.09.003
- Donner, H. & Eriksson, K. & Steep M. (2018). Digital Cities: Real Estate Development Driven by Big Data. Working Paper. Retrieved from <https://gpc.stanford.edu/publications/digital-cities-real-estate-developmentdriven-big-data>
- Glaeser, E. & Scheinkman, J. & Shleifer, A. (1995). Economic Growth in a Cross-Section of Cities. *Journal of Monetary Economics*, 36, 117–143. doi: 10.3386/w5013



- Glaeser, E. & Mare, D (2001). Cities and skills. *Journal of labor economics* 19 (2), 316-342. doi: 10.1086/319563
- Glaeser, E. & Shapiro, J. (2003). Urban Growth in the 1990s: Is City Living Back? *Journal of Regional Science*, 43 (1), 139-165, doi: 10.1111/1467-9787.00293
- Glaeser, E. & Berry, C. R. (2006). Why are smart places getting smarter? In: Donner, H. & Eriksson, K. & Steep M. (2018). *Digital Cities: Real Estate Development Driven by Big Data*. Working Paper
- Noorderhaven, N. & Harzing, A-W. (2009). Knowledge-sharing and social interaction within MNEs. *Journal of International Business Studies*, 40(5), 719-741, doi: 10.1057/jibs.2008.106
- Rauch, J. (1993). Productivity gains from geographic concentration of human capital: evidence from the cities. *Journal of Urban Economics* 34 (3), 380–400. doi: doi.org/10.1006/juec.1993.1042
- Shapiro, J. (2006). Smart cities: quality of life, productivity, and the growth effects of human capital. *The review of economics and statistics* 88(2), 324-335. doi: 10.1162/rest.88.2.324
- Simon, C. (1998). Human Capital and Metropolitan Employment Growth. *Journal of Urban Economics* 43, 223–243. doi: doi.org/10.1006/juec.1997.2048
- Simon, C. and Nardinelli, C. (2002). Human Capital and the Rise of American Cities, 1900–1990. *Regional Science and Urban Economics*, 32, 59–96. doi: doi.org/10.1016/S0166-0462(00)00069-7
- Simon, C. (2004). Industrial Reallocation across U.S. Cities, 1977–97. *Journal of Urban Economics* 56 (1), 119–143. doi: doi.org/10.1016/j.jue.2004.03.005
- Wheeler, C. H. (2001). Search, sorting, and urban agglomeration. *Journal of Labor Economics* 19 (4), 879-899. doi: dx.doi.org/10.1086/322823
- Wheeler, C. H. (2006). Cities and the growth of wages among young workers: Evidence from the NLSY. *Journal of Urban Economics* 60 (2), 162-184. doi: doi.org/10.1016/j.jue.2006.02.004
- Weingarten, P. (2015). Workplace Transformation: How Human Capital is Impacting Investment in Real Estate. Retrieved from <http://www.nareim.org/viewpoints/workplace-transformation-how-human-capital-isimpacting-investment-in-real-estate/>
- *** (2016). Digital Transformation in business and society, Actualité et tendances – Bulletin économique de la Chambre de Commerce Luxembourg, No.18 (Novembre). Retrieved from



[http://www.cc.lu/uploads/tx_userccpublications/Digital Transformation in Business and Society final 24102016.pdf](http://www.cc.lu/uploads/tx_userccpublications/Digital_Transformation_in_Business_and_Society_final_24102016.pdf)

- *** (2018). BNP Paribas Real Estate Guide to Investing in Romania. Retrieved from https://www.realestate.bnpparibas.com.ro/upload/docs/application/pdf/2018-03/investing_in_romania_2018.pdf?id=p_1699474
- *** (2017). Conference Board CEO Challenge: Leading through Risk, Disruption, and Transformation. Retrieved from <https://www.conference-board.org/ceochallenge2017/>