

**SMART ENTREPRENEURSHIP: OPPORTUNITY FOR  
DEVELOPMENT OF THE FURNITURE INDUSTRY IN THE NORTH-  
EAST REGION OF ROMANIA**

**Procopie-Florin GUȘUL<sup>1</sup>**

*“Ștefan cel Mare” University of Suceava, Suceava, Romania*

---

**Abstract**

*Augmented reality (AR) allows for further development of the physical world by adding real-time virtual digital information. This gives entrepreneurs and especially retailers unprecedented options to attract customers. Having the power to put (virtual) products into the hands of customers creates interesting opportunities for users in order to prefer a particular brand, service or product. Although it is expected that the AR solutions market to grow exponentially in the coming years and several companies have already tried to expand their business by using this type of smart technology, this issue is less known in Romania, much less in regions which are less economically developed and, specifically with regards to the entrepreneurial environment. This paper debates and demonstrates that AR technology applied by a smart entrepreneur can direct customer behaviour in the purchasing process and produce favourable outcomes such as product knowledge, positive attitudes, and stronger buying intentions. This paper specifically addresses how an AR-type solution widely used by a multinational company such as IKEA may become an opportunity to develop entrepreneurship in the North-East region of Romania, having as starting point the Strategy for Research and Regional Innovation through Intelligent Specialization (RIS3) North-East which evokes the furniture industry as a priority for the region, corroborated with the statistical data presenting relevant information on primary production in the wood industry.*

**Keywords** smart city, augmented reality, intelligent specialization, entrepreneurship, furniture industry

**JEL classification:** L26, O14, O32

---

---

<sup>1</sup> “Ștefan cel Mare” University of Suceava, Faculty of Economic Sciences and Public Administration, Suceava, Romania, [contact@floringusul.ro](mailto:contact@floringusul.ro)

## **1. Introduction**

Nowadays, population living in urban areas has never been so large and continually growing. During the '50s, almost one third of the world's population used to live in cities. The number of persons has increased significantly to 50% in year 2011 and we have to take into consideration that it is projected to increase to almost 70% by year 2050 (United Nations, 2011, p. 4). This momentum of urbanization has expanded globally. We notice that this aspect affects regions which are less matured and developed, perhaps more than industrialized ones. Consequently, ultra-urbanization leads to a growing disparity in the development of the regions, both socially and especially economically. In this context, less developed regions, although with a certain degree of urbanization, are stagnant in terms of economic growth compared to highly industrialized, sustainable and have real growth prospects in the future. With the aim to alleviate this developmental dissonance, it is necessary for the players in the less developed areas to catch up with the big competitors, by developing strategies, following models of good practice, implementing sustainable, modern solutions, but without losing sight of the fact that they have to take into account the local specifics and the available resources.

Moreover, information and communication technology (ICT) has transformed the prospects of urban areas to plan and implement urban growth (Bakici et al., 2013). As such, ICT has a profoundly transforming impact on people, organizations and whole communities today (Eger, 2009, p. 48). As a result of urbanization and digital revolution, the concern in the Smart City concept has increased heavily in the recent years. Thus, governments and policy-makers develop economic policies for cities and regions that rely on developed technology devices, with the general scope of building a core for the ever-growing urban areas of the future. As a result, people in a city or a specific region are working in this direction because they are looking for an increase in quality of life, both as citizens, beneficiaries of public services and consumers or customers of private companies supplying goods or services.

Smart City is an interdisciplinary research field that combines spatial planning approaches (Chapin, 2012), economic geography (Bunnell, Coe, 2001), the knowledge economy (Zygiaris, 2013), urban technology (Caragliu et al. 2009) and marketing (Doel, Hubbard, 2000). These studies focus on particular issues and interconnections that lead to a definition of smart city, seen as an improved quality of life for human factor. Although innovative approaches have been achieved, the theoretical research of the intelligent city is at an infant stage. Despite a multitude of definitions were made, they are

still inadequate as a whole and do not have a homogeneous basis for grasping the Smart City concept. Still, it can be said that the competitiveness of a city, a region or even a private firm is determined by the power and desire to innovate, but also by the economic force it manifests. Even smaller structures, which are now increasing their chances of growth, are repositioning by setting up and implementing ICT infrastructure or even a smart solution. In this process, a multitude of business opportunities are being developed, leading to greater entrepreneurial activity (Bakici et al., 2013; Doel Hubbard, 2000). Throughout the time academics have realized that intelligent cities are richer in entrepreneurial opportunities (Lombardi et al., 2012), there is no further analysis to show that Smart City solutions could lead to an increase in development entrepreneurial spirit, at least not at the level of less developed regions, not to mention their existence in the North-East region of Romania.

This paper aims to reduce this gap in research undertaken so far on the concepts of entrepreneurship and Smart City taking into consideration that the North-East region is still the poorest region in Romania. Thus, the work represents a review of the specialized literature on Smart City concepts and innovative technical solutions to produce added value in the North East region. The motivation of the chosen theme lies in the finding of an untapped maximum potential of the North-East area, namely the furniture-producing industry in the conditions of a large wooded area. We find an opportunity to develop entrepreneurship that deserves to be researched and implemented with the aim to improve the competitiveness of the region both in the national and European context.

## **2. Literature review**

The smart city concept has been researched for the first time in the late 1980s as a novel approach to governing the urban area and has developed increasingly in the last decade. The idea of smart cities is in fact a perception on the development on cities where businesses and individuals use technology to strengthen their function in the new economy, generate new job opportunities, and enhance the quality of life (Anttiroiko et al. 2014). Consequently, the concept is based on the belief of intelligent use of ICT to improve the quality of life in urban areas, also the improvement of digital content and services in cities through the implementation of smart solutions.

In general terms, the smart city is an urban habitat that uses technologies to boost the efficiency and performance of ordinary urban activities and services provided to individuals. In other words, researchers

have described a smart city from different perspectives. Some define the concept by stating that a smart city connects a variety of infrastructure (organizational, social and physical) and ICT to increase the intelligence of a city (Harrison et al., 2010). A different definition of a smart city states that it is the one that uses modern technologies to upgrade the quality of life, the competitive edge, and the viable efficiency of city services, at the same time protecting and promoting the availability of resources for current and new coming generations regarding social issues, economic and also environmental issues. Initially, the purpose of smart cities was to increase the quality of citizens' lives by diminishing the gap between supply and demand (Zanella et al., 2017). To meet the demands for increased quality of life, smart cities focus especially on solutions that are both efficient and sustainable for all kind of utilities such as energy, transport, health infrastructure, administration and others to cope with the increasing needs of urbanization (Ejaz et al., 2017).

A variety of nowadays studies have outlined the essential aspects and characteristics of a smart city:

- smart infrastructure (such as wireless networks);
- technology (integrated hardware and software and network technologies);
- the economy (provider of competitiveness, such as innovation, trademarks, entrepreneurship and productivity, integration on the international market);
- administration (with regards to political engagement and citizen services, transparency and efficiency in local administration);
- urban mobility (improved access and real-time information, modern and sustainable transport technologies and systems);
- environment (attractive environment, low pollution and improved environmental conditions);
- individuals (with regards to the integration into the community, the quality of social networking, and the acceptance of innovation);
- quality of life (along with all aspects of human life that might be improved, such as culture and education, safety, health, etc.) (Nam, Pardo, 2011; Balakrishna, 2012; Chourabi et al., 2012).

Consequently, the particular implementation of this vision may be diverse and include, for example, the evolution of a wireless city out of current scarce wireless networks with no connections between them, smart buildings, intelligent public services or utilities and transport, smart urban

administration, smart medical infrastructure and social management, intelligent tourism and green urban areas, through the engagement of innovative network sensors and network infrastructures.

Contemporary researchers in business management have introduced a wide variety of theories about entrepreneurship. Generally, the ability of an individual to provide, produce, create and receive or realize opportunities at an appropriate time and place, or through appropriate individuals and prices, forms a system called entrepreneurship. UNIDO (1999) described entrepreneurship as the process of using the initiative to transform the business concept into new venture capital, diversifying the existing enterprise or high-risk hypothetical venture.

Many interpretations and debates on the topic of entrepreneurship indicate that it involves innovation, evolution, recognition, capturing opportunities and transforming them into business ideas. Entrepreneurial advancement is an incentive for economic, industrial and social development. It can also be said that development of entrepreneurship is a predisposition to be open to new ideas and methods and make individuals more focused on the present and the future rather than on the past events. Entrepreneurship brings about leadership in what concerns resource efficiency administration, technical progress, innovation and capital formation to cultivate novel techniques and opportunities for production, profit and sustainable economic growth.

Entrepreneurial function involves discovery, evaluation and also taking advantage of opportunities, that is new products, services or production processes, different and innovative strategies, organizational forms and new markets for products and services. Thus, we might say that entrepreneurial momentum is an unforeseen and still unappreciated economic opportunity.

There are nowadays entrepreneurial opportunities due to a multitude of entrepreneurs that have different ideas about the applicable value of resources or at the moment when resources are transformed from inputs into outputs. The entrepreneur's theory focuses on the heterogeneity of opinions about the worth of resources (Alvarez, Busenitz, 2007). Some researchers believe that entrepreneurship or entrepreneurial function may be defined as the detection of favourable circumstances and the consequent creation of a brand-new economic activity, often through the formation of a new firm (Reynolds, 2005). In other words, Reynolds states that since there is not a market for "opportunities", the entrepreneur has to exploit them, which means that the

entrepreneur needs to develop their capacities to obtain resources, as well as the organization and exploitation of opportunities.

In this context, smart entrepreneurship appears as part of a wider concept in smart cities; with a focal point on a new business management concept that takes technologies into consideration as factors that enable innovation and improvement in IT with the aim of growth of quality of life. Above all, one should not oversee considering intelligent technology in this new vision of smart entrepreneurship, which, in fact, is an integrative view on modern technology.

Interactive technologies have altered the way individuals communicate and interrelate with existent reality. During the last several years, a continuous flow of new technologies have been brought to life to individuals, and among the newest is the augmented reality (AR). The augmented reality points out to the integration of computer-generated graphs into the real world (Suryana et al., 2017). AR is able to introduce enriched product information (Lu, Smith, 2007) such as three-dimensional product images in distinct shapes, colours and styles, and therefore it is now used to help buyers decide before purchasing (Oh et al. , 2008). AR does this by integrating virtual computer-generated information into the user's real world, thereby enriching the user's experience of reality (Poushneh, Vasquez-Parraga, 2017). To be more specific, we might consider AR as an interactive technology that develops three-dimensional virtual content of images, objects or information and afterwards creates a map in the consumer's reality. We might attest to the fact that existing content is enriched by AR. Consumers can see the ultimate result displayed on a screen, but they cannot perceive the operation of the technology.

### **3. North-East region Specialization Strategy, a starting point for development of furniture industry**

When we analyze the development of regions, their economic growth strategies and intelligent specialization, we find that, following successful European models, they are or ought to be dependent on the regional context, a certain historical and economic determinism, whether we there is about membership to a political movement, natural resources and economic sectors considered traditional in the area (mining, woodworking, etc.), geographic position or settlement system (capitals, big cities versus small and medium cities, metropolitan or peripheral areas, border areas, etc.).

In general, smart specialization strategies presented as good practice models are based on the idea that a region would not be able to achieve remarkable performance in all areas of science, technology and innovation, thus requiring a prioritization process that takes into account needs and disposable resources in the region (and a useful tool for this is SWOT analysis, for example). However, during the 2014-2020 programming period, a new approach is being adopted, in this case activity based, not sectorial.

Thus, for the North-East region, the North East Regional Intelligence Specialization (RIS3) Strategy was approved in December 2017 as an integral part of the North-East Regional Development Plan 2014-2020. In this programmatic document, a detailed analysis of the North-East region identified those areas / sectors with intelligent specialization potential, as follows:

- Agro-Food Sector;
- Wood and furniture processing;
- Biotechnology;
- Textile industry;
- ICT (also including new media);
- Tourism;
- Environment.

Our attention is directed to one of these sectors, namely the furniture industry, given the forest resource of the area, its history, the existing educational resources (forestry high school, profile faculty, etc.), as well as the repeated findings on the discrepancies development between the regions of Romania or even at European level. In addition, as mentioned in RIS3, the entrepreneurial spirit in the region is below the moderate level, even lower, thus the region is the last position in 2014 in the national ranking of the total number of firms (55,249) and in terms of SME density (16.83 SMEs per 1,000 inhabitants). It is also known that SMEs account for 99.71% of the total number of existing companies. The same situation is encountered in the case of the distribution of new company registrations that reflect the discrepancies of entrepreneurial development between the counties of the North-East region.

In order to analyze the furniture manufacturing industry (fundamental forestry and wood engineering), RIS3 (Saramet et al., 2017) set up the following sectors for reconfiguration:

- Innovative business models for traditional products;
- Bioenergy;

- Developing new products, processes and technologies.

Therefore, in the context of a low entrepreneurial spirit, the furniture industry has the potential for smart specialization through the implementation of innovative new technologies to reconfigure the classical products designed to develop this sector to increase its contribution to increasing competitiveness in the region, lead to a sustainable and environmentally friendly economy.

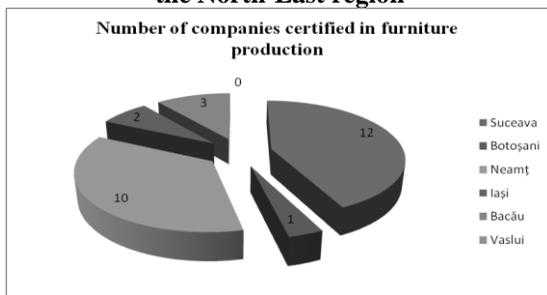
With regard to the 2022 target for any of the intelligent domains (including the furniture industry), this is set in RIS3 as allocating 1% of regional GDP to RDI, compared to 2014.

As with any industry, one of the main challenges lies in the availability of resources, their geographical spread, and how these resources are used to maximize their efficiency. In this respect, according to the statistics of forestry activities elaborated by INS in 2016, the forestry fund was concentrated in a considerable proportion in the Center region (19.3% of the total forestry fund) and North-East (18.2%), followed by West regions (14.1%), North-West (15.2%), South-West Oltenia (12.4%), South-Muntenia (10.0%), South East (8.4%) and Bucharest-Ilfov (0.4%). At the national level, the largest areas of forestry were recorded in the following counties: Suceava (438 thousand hectares), Caraș-Severin (421 thousand hectares), Hunedoara (317 thousand hectares), Argeș (277 thousand hectares), Vâlcea (271 thousand hectares), Bacău (270 thousand hectares), Harghita (264 thousand hectares), Neamț (262 thousand hectares) and Maramureș (260 thousand hectares). Thus, three of the six counties of the North-East region are among the topmost wooded areas in Romania. In this context, it is not difficult to conclude why the furniture industry has been selected as a field of intelligent specialization in the North-East region, given that the raw material is apparently in sufficient quantities for exploitation.

At the same time, the amount of timber exploited in 2014 was 4,668,800 cubic meters, which represents 26.10% of the total country-wide timber mass. In 2014 there was an increase in higher processed products comparing to those primarily processed. In 2014, in the furniture industry, 412 local units were active in the North-East region (compared to 423 in 2013), most of which were in Suceava (21.12%), Iași (23.30%), Neamț (18.45%) and Bacău (21.12%), especially in the sub-areas "manufacture of unclassified furniture" and "furniture manufacturing for offices and shops". Regarding the number of companies certified in furniture production on 01.11.2018, the Association of Furniture Producers in Romania (APMR) produced a statistic and numbered not less than 115 furniture producers at national level and their

distribution at the North-East region is represented graphically below (Figure 1).

**Figure 1: Number of companies certified in furniture production on 01.11.2018 in the North-East region**



Source: Author's representation of statistics in the field available at <http://www.industriamobilei.ro/lista-societatilor-atestate-ca-producator-de-mobila/>

From the above mentioned statistics, in the context of a growing need for responsible management of wood, we find that this industry requires integrated regional management policies and solutions for the efficient (with social and economic benefits) of raw materials. Equally, we note that innovative solutions in the field could represent significant opportunities for further development of the industry.

#### **4. Is Augmented Reality a viable solution for smart entrepreneurship in the furniture industry?**

How can entrepreneurs use smart technologies to outperform competitors and create value for customers? A variety of organizations have become keen on the development of AR technology and therefore technology has advanced and has captured several forms: mobile applications (for example, Star Chart, Snap Shop, IKEA Catalogue), headset devices (such as Google Glass, Microsoft Hololens, Vuzix Glass), contact lenses and other devices (for example, Memory Mirror or Magic Mirror,). In the above-mentioned forms AR might be applied in different contexts depending on the objectives of an organization and some entrepreneurs have already begun to familiarize their customers with this kind of technology. For example, Neiman Markus has created Memory Mirror in some of its stores. This kind of particular AR device turns the simple purchase of a costume into a true experience for its customers. More precisely, they can see what a costume

looks like at any angle, "examining" it virtually, and may analyse distinct things after they have already tried it in virtual reality. Also, Augmented Reality applications might be set up to be functional on smart devices. One famous example is Pokemon Go, a very interesting application which has managed to attract the attention of players around the world.

An examination of available academic literature, together with a review of industry literature on the usage of augmented reality applications for entrepreneurship, reveals an increase in evidence that such applications have a potentially beneficial value for retailers, but also for customers. More specifically, the focus is on five benefits:

- i. Enhanced reality technologies can improve sales for offers such as garments or makeup. We are aware that some retailers, such as J.C. Penny and Bloomingdales test the usage of "virtual chambers" that allow customers to "try out" a variety of products, fashionably looking at a screen, but also, some retailers in the beauty industry are planning to offer buyers new manners to try makeup products with using 3D augmented reality or anti-aging mirror applications.
- ii. A big provocation with which retailers are face by is the return of goods and, in particular, of large-scale equipment or products. The charge of shipping for large and heavy elements may sometimes exceed the cost of the components themselves. Enhanced reality technologies might be implemented to diminish these costs for entrepreneurs. For this reason, the IKEA furniture distributor has introduced in 2013 an "augmented reality catalogue". The AR shopping application allows buyers to measure the dimensions (width and height) of an actual camera seen through the lens of a smart phone and then makes a very authentic view of the desired piece of furniture in relation to the rest of the habitat.
- iii. There is a variety of challenges faced by many retailers of building materials and one of the biggest is the inventory management on shelves. AR shopping applications can be used to reduce physical inventory management costs and cargo needs analysis.
- iv. AR applications can help a consumer to "interact" or have closer connections to marketed products, even before purchasing. An example of this is Blippar, a company that implements an augmented reality application capable of bringing to life the smallest and simplest things for consumers, like apples. By accessing the "apple" button, a buyer is capable to know the type of apple and also the different apple

varieties that are available at the time of sale, the origin of the apple, the apple's dietary content and much more. Such specific content can help create a customer-to-product connection and the extent to which the product is in relation with a particular smart entrepreneur. Therefore, retailers may use this smart solution to engage their consumers or buyers even before entering the sales unit.

- v. Customers are increasingly demanding and are increasingly expecting products and services that meet their specific needs. Jewellery business, such as De Beers and famous skin care company Shiseido have introduced AR applications to help buyers test different jewellery and cosmetic designs, commonly, based on the skin colour of their customers.

Based on our studies, we can say that AR solutions have the potential to offer online buyers (and not only these ones) a more straightforward and committed product experience, which might contribute to a diminishing in product returns and, implicitly, a better rate of receipts. In addition, it has the ability to appeal to the attention of buyers in advertising (Javornik et al., 2017).

Based on the very idea to reduce product returns, cultivate customer engagement, gain popularity and implicitly increase sales revenue, IKEA, the famous Swedish furniture corporation, presented in 2013 a digital extension of the printed catalogue, made globally in more than 60 languages. With the support of AR application, costumers were able to view pieces of furniture inside the house. Later, buyers can see real-life products and real colours to help them make a purchasing decision (Stinson, 2013). In addition to viewing the current catalogue and locating a neighbouring store, IKEA also offers a placement of furniture in the client's room. Using the camera built into a phone, a smart device measures the room compared to the size of the paper-based catalogue, and then the customer can view the real size furniture item.

The implications of the ease of use of this type of AR solution seem to gain ground in recent years, especially as Zuckerberg (2017) claims that every person already owns a camera phone. In other words, the Aside from this argument, it seems that the IKEA AR application is as accessible to use as the classic online e-commerce site. Furthermore, one might assume that Generation Y is already ready to adopt AR technology on their intelligent devices. In addition to support its usage, the technological anxiety of potential users and the utility value of the application are predictors of the intention to use the technology (Kim, 2008), with potential implications for the benefit of

the entrepreneur, such as sales growth, greater market coverage, competitive advantage, etc.

Another implication that we would like to mention is that the idea of knowing the products in detail before the acquisition seems to be an important predictor of the purchasing intention in terms of augmented reality. So far, AR applications can help the customer to assess the size and style of a product, giving him/her the confidence to make a purchasing decision, and thus improving the buying process with benefits on both sides: the customer and the supplier in its quality of AR solutions user.

## **5. Conclusions**

The worldwide trend of digitization and urbanization has led to an increase in focus on the concept of smart city in the last decade. Because Smart City blends in approaches from different areas of research, the wide range of definitions conducts to a non-homogeneous understanding of the concept. However, there are some different features that a smart city must present to be awarded with a "smart" tag. These are, for example: availability and quality of infrastructure and use of ICT; urban development driven by business; social inclusion of citizens in public services, creative and high-tech industries; social and relational capital, including social and environmental sustainability. Among these, ICT infrastructure might be considered as the main feature of smart entrepreneurship in a context of smart urban advancement, based on economic development.

Many researchers have the advantageous characteristics of a smart business solution. There are issues remaining to be debated, among which are, however, which of these attributes essentially lead to entrepreneurial activity in a smart urban area and to what extent. This paper looked at a smartly relevant application for the furniture industry. As a result, based on the analysis of available resources in the North-East region and the intelligent specialization directions defined for the next period, a strong link emerged between the development of AR technology for the furniture industry can lead to the development of entrepreneurship by cultivating customer preference for something new, innovative and useful at the same time. We have demonstrated that by implementing this solution there is a dual advantage: both at the company level by lowering the return rate of marketed products (furniture pieces) and at individual level, the customer, who is in a privileged position of safety and satisfaction (even in the case of online shopping) because he or she chooses a product in perfect harmony with his/her wishes

and needs. Thus, we find an opportunity not yet exploited by entrepreneurs in the North-East region of Romania, an opportunity that needs to be transformed from a potential risk to entrepreneurs (lack of necessary technological information, high implementation costs, etc.) into a reality of business development, conveying the dissemination of information on technology involved by producers, the discovery of new sources of funding (public or private), especially through the continuous cultivation of smart entrepreneurship.

As AR technology is still in its infancy and prior research in this area is limited, we need to gather and debate more empirical information on its benefits to the business environment, sales growth, user decision to buy and the ease with which this solution can be implemented even by entrepreneurs in the SME area or their willingness to allocate resources for business development.

## 6. References

- Alvarez, S. A. and Busenitz, L. W.: The entrepreneurship of resource-based theory. *Entrepreneurship: Concepts, Theory and Perspective*, (June), pp. 207-227 (2007). doi: 10.1007/978-3-540-48543-8\_10.
- Anttiroiko, A. V., Valkama, P. and Bailey, S. J.: Smart cities in the new service economy: Building platforms for smart services, *AI and Society*, 29(3), pp. 323-334 (2014). doi: 10.1007/s00146-013-0464-0.
- Bakici, T., Almirall, E. and Wareham, J.: A Smart City Initiative: The Case of Barcelona, *Journal of the Knowledge Economy*, 4(2), pp. 135-148 (2013). doi: 10.1007/s13132-012-0084-9.
- Balakrishna, C.: Enabling technologies for smart city services and applications, *Proceedings - 6th International Conference on Next Generation Mobile Applications, Services, and Technologies, NGMAST 2012*, pp. 223-227 (2012). doi: 10.1109/NGMAST.2012.51.
- Bunnell, T. G. and Coe, N. M.: Spaces and scales of innovation, *Progress in Human Geography*, 25(4), pp. 569-589 (2001). doi: 10.1191/030913201682688940.
- Caragliu, A., Bo, C. D. E. L. and Nijkamp, P.: Paper Nijkamp et al Smart cities in Europe 2009, pp. 45-59 (2009).
- Chapin, T. S.: Introduction: From growth controls, to comprehensive planning, to smart growth: Planning's emerging fourth wave, *Journal of the American Planning Association*, 78(1), pp. 5-15 (2012). doi:

10.1080/01944363.2011.645273.

- Chourabi, H. *et al.*: Understanding smart cities: An integrative framework, *Proceedings of the Annual Hawaii International Conference on System Sciences*, pp. 2289-2297 (2012). doi: 10.1109/HICSS.2012.615.
- Doel, M. and Hubbard, P.: Taking world cities literally, *Marketing the city in global space of flows*, 6(3), pp. 351-368 (2000). doi: 10.1080/136048102200003777.
- Eger, J. M.: Smart growth, smart cities, and the crisis at the pump a worldwide phenomenon, *I-Ways*, 32(1), pp. 47-53 (2009). doi: 10.3233/IWA-2009-0164.
- Ejaz, W. *et al.*: Efficient Energy Management for the Internet of Things in Smart Cities, *IEEE Communications Magazine*, 55(1), pp. 84-91 (2017). doi: 10.1109/MCOM.2017.1600218CM.
- Harrison, C. *et al.*: Foundations for Smarter Cities, *IBM Journal of Research and Development*, 54(4), pp. 1-16 (2010) . doi: 10.1147/JRD.2010.2048257.
- Javornik, A. *et al.*: MagicFace: Stepping into Character through an Augmented Reality Mirror, *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems - CHI '17*, pp. 4838-4849 (2017). doi: 10.1145/3025453.3025722.
- Kim, J.: Adoption of virtual try-on technology for online apparel shopping, *Journal of interactive marketing : a quarterly publication from the Direct Marketing Educational Foundation*, 22(2) (2008).
- Lombardi, P. *et al.*: Modelling the smart city performance, *Innovation*, 25(2), pp. 137-149 (2012). doi: 10.1080/13511610.2012.660325.
- Lu, Y. and Smith, S.: Augmented reality E-Commerce: How the Technology Benefits People's Lives, *Human-Computer Interaction*, pp. 215-238. (2007). doi: 10.1111/1368-423X.00069.
- Nam, T. and Pardo, T. A.: Smart city as urban innovation, *Proceedings of the 5th International Conference on Theory and Practice of Electronic Governance - ICEGOV '11*, (February 2014), p. 185. (2011). doi: 10.1145/2072069.2072100.
- Nations, U.: WUP2011\_Report (2011). doi: 10.2307/2808041.
- Oh, H., Yoon, S. Y. and Shyu, C. R.: How can Virtual Reality reshape furniture retailing?, *Clothing and Textiles Research Journal*, 26(2), pp. 143-163 (2008). doi: 10.1177/0887302X08314789.

- Poushneh, A. and Vasquez-parraga, A. Z.: Satisfaction and Willingness To Buy, *Journal of Retailing and Consumer Services*, 34(October 2016), pp. 229-234. (2017). doi: 10.1016/j.jretconser.2016.10.005.
- Reynolds, P. D.: Understanding business creation: Serendipity and scope in two decades of business creation studies, *Small Business Economics*, 24(4), pp. 359-364 (2005). doi: 10.1007/s11187-005-0692-x.
- Saramet, S. *et al.*: Strategia pentru Cercetare și Inovare Regională prin Specializare Inteligentă, pp. 1-121 (2017).
- Stinson, L.: *So Smart: New Ikea App Places Virtual Furniture in Your Home*. (2013). Available at <https://www.wired.com/2013/08/a-new-ikea-app-lets-you-place-3d-furniture-in-your-home/>
- Suryana, R. A. *et al.*: Markerless Augmented Reality Pada Perangkat Android, *E-Journal Teknik Informatika*, 2(1), pp. 35-46 (2017). Available at: <http://sistemasi.ftik.unisi.ac.id/index.php/stmsi/article/download/29/pdf>.
- Zanella, A. *et al.*: Internet of Things for Smart Cities, *IEEE Internet of Things Journal* 1(1), pp. 22-32 (2017). doi: 10.1109/JIOT.2014.2306328.
- Zuckerberg, M.: *Zuck says copying Snapchat was just step 1 of Facebook's AR platform*. (2017). Available at <https://techcrunch.com/2017/04/18/will-snap-copy-the-fb-platform/>
- Zygiaris, S.: Smart City Reference Model: Assisting Planners to Conceptualize the Building of Smart City Innovation Ecosystems, *Journal of the Knowledge Economy*, 4(2), pp. 217-231 (2013). doi: 10.1007/s13132-012-0089-4.