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BOOK OF ABSTRACTS

NICE 2022

Edited by:

Assoc. Prof. Dr. Gratiela Dana BOCA

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TABLE OF CONTENTS

Nr. crt	Article title	Authors
1	The public debt in Albania and its role in the economic development of the country	*Klodian MUÇO*
2	New trends in the construction sector	*Diana Minodora POP*
3	Use of waste materials in architecture	*Gülcan İNER* *Evren ÇAĞLARER*
4	“New age” composite material	*Evren ÇAĞLARER*
5	A multidisciplinary approach of integration of geo-monitoring data and techniques in the achievement of sustainable strategies goals	*Adrian T. RADULESCU* *Gheorghe M. T. RADULESCU*
6	Assessment of collaborative networks of the training programs on human capital development in industrial clusters	*Corina M. RADULESCU* *Alina Natalia POP*
7	Situation of clusters at the level of the northwest development region of Romania	*Alina Natalia POP*
8	Impact of demographic changes in economic and urban development in Albania	*Mithat MEMA* *Marsida ABDUL*
9	A cross model for plastic management behavior	*Graţiela Dana BOCA* *Arzum ISITAN*
10	An analyze of food waste management attitude and behavior in Romanla	*Gratiela Dana BOCA* *Francesco GENOVESE*
11	A new provocation - Education 4.0	*Daniela Elena BIRTOC*
12	A vision about future of bio plastic in Turkey	*Arzum ISITAN* *Fatma KIRMIZI* *Cem GÖK*

13	Plastic waste recycling for Sustainable Environment	*Gratiela Dana BOCA*
14	Current state of knowledge and research of the adoption and application of blockchain technology	*Diana Cezara TOADER*
15	Fintech and future of finance	*Diana Sabina IGHIAN* *Rita Monica TOADER*

THE PUBLIC DEBT IN ALBANIA AND ITS ROLE IN THE ECONOMIC DEVELOPMENT OF THE COUNTRY

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ABSTRACT

There is a great debate among economists of different schools of economic thought about the role of public debt in economic growth. Much of the economic literature suggests that a low level of public debt can positively influence the design of better policies for supporting the economy of a country. This also can stimulate economic growth, serving as an investment financier of innovations in technology, stimulating productivity growth and competition. On the other hand, other economists think that public debt inhibits the economic growth of a country, and leads to increased taxes for future generations, harming the well-being of citizens. In such conditions, naturally can arise the questions: what impact the public debt had on the economic growth of a country like Albania, where during the pandemic it exceeded 80% of GDP? And, how can its costs be financed in the future?. Given this situation, the objective of this paper is to study the sustainability of public debt in Albania and measure its impact on the Albanian economy. The methodology used in this paper is that of descriptive statistical analysis and an empirical model on public debt sustainability. What we wan to prove through this paper is that: public debt, at moderate levels, serves to stimulate economic growth. But, while it exceeds the suggested ceiling by 60%, it generates more costs than benefits for the economy. This, especially, happens when it is used to finance infrastructure investments that have a long-term return on investment or when debt is used inefficiently, that means, when it does not generate enough jobs to cover its costs.

KEYWORDS: *Public debt, Public debt sustainability, Economic growth, Albania*

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NEW TRENDS IN THE CONSTRUCTION SECTOR

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ABSTRACT:

The industrialization of constructions represents a possible solution in increasing competitiveness in this sector. Standardization and industrialization of buildings are some of the drivers for new trends in the sector. Off-site construction is increasingly technology-driven, relying on approaches and tools such as Design for Manufacturing and Assembly (DFMA), Lean manufacturing, Building Information Modelling (BIM) and BIM-related planning tools of the company's resources. Managerial and technical skills will have to be increasingly intertwined and the construction managers have to be aware that a balance between these skills and relevant knowledge is critical when selecting best technological strategies. The paper aims to present through a review of the literature the most important trends in the evolution of this sector, the analysis being made by bibliometric methods relevant papers indexed in WOS and Scopus, during 2012-2020.

KEYWORDS: *Strategies, Lean Manufacturing Off-site constructions, BIM, Industrialization of construction*

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USE OF WASTE MATERIALS IN ARCHITECTURE

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ABSTRACT

The material is the main element of architecture. Innovations in architectural designs are shaped by the development of material technology. In the construction process that started with the need for shelter, hundreds of different materials have been used to date. However, nowadays resources are running out, environmental impacts are increasing and wastes are becoming an important problem all over the world. The energy consumption for the production and transportation of building material is quite high. Therefore, the concepts of resource conservation, efficiency, sustainability and recycling have become priority for the construction sector. There are many types of materials that have completed their useful life but are used by reforming instead of being garbage. These types of materials are plastic, paper, wood, glass, and metal materials which are particularly suitable for recycling and reuse in different forms and forms. These recyclable materials can be reshaped and used for both building construction and interior furniture production. For example; The Eindhoven-based designer WooJai Lee has transformed recycled paper into bricks that can be used for building furniture. Made from recycled newspapers and wood glue, Paper Bricks are as strong as real bricks and have an aesthetic and appearance similar to stone or marble. Their texture is warm and smooth to the touch, like paper or fabric. To make the bricks, newspaper is transformed into pulp and combined with wood glue before they are pressed into the right shape. The colour of the bricks depends on the colours of the paper utilized. Each brick can be cut, drilled and glued in the same way as wood. The holes in the side of each block allow them to be joined together. Researchers from the National Council of Scientific and Technological Research (CONICET) in Argentina have come up with a novel way to turn used plastic drinking bottles into eco-friendly building bricks. The PET (polyethylene terephthalate) material the bottles (and bricks) are made from is as strong as a conventional house brick made from sand and cement. Also, By collecting plastic bottles and plastic waste to be used as a wall infill improves the surrounding environment and provides

inexpensive building materials plastic bottles, used for wall infill and plastered on the exterior. Or, glass bottles are using same type of structure. glass bottles can provide some structure and bring in light. All recycled bottles used in buildings help to reduce the need for new materials and lower the costs. In sustainable architectural applications, it is important that the material is recyclable in the field of building materials for increasing building efficiency and energy conservation. In addition to using 100% recyclable materials in building production, the number of buildings built with waste materials is increasing day by day. The buildings built with waste materials other than the known building materials, without using new materials, have a high contribution to the environment, economy and design. In this article, building application designs designed with waste materials will be examined.

KEYWORDS*: Waste material, Re-use, Sustainability, Design. Recycled, Economic sustainability.*

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"NEW AGE" COMPOSITE MATERIAL

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ABSTRACT

The story of new materials begins with the entry of plastics into the material world, which has a history of eighty years. The composite material is adobe, which was first made in ancient times. However, apart from the first composites used for military purposes in the Second World War, they were commercialized all over the world in the early 1950s. Therefore, composites are still a new type of material all over the world. The first purpose in the production of composite materials was to replace conventional materials. Thus, it was possible to develop production parameters such as stronger, more economical, longer-lasting, easier process ability than traditional materials. Today, products that cannot be realized with conventional materials can only be produced with composite materials. The new generation composite materials have been in line with the needs of the sectors, and most importantly, thanks to the studies carried out at the nano scale. Almost all of the materials called smart materials today consist of new generation composites. Wearable-trackable technologies in the electronic information industry, which are called smart textiles in the textile industry, pharmaceuticals, devices and surgical instruments in the medical-medicine industry, and their use in the aviation and space industry are the most basic known examples of these. Thanks to the behavior of these nanostructures, which make up many nanostructures and materials, such as graphene, materials are called "new age" composite materials. In this study, "new age" composite materials were examined with examples according to the sectors, and their production and investment costs were investigated. New investments made on the basis of sectors and studies that shed light on the future have been examined both scientifically and economically.

KEYWORDS: Composite material, Smart Material, Nanotechnology, new age material

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A MULTIDISCIPLINARY APPROACH OF INTEGRATION OF GEO-MONITORING DATA AND TECHNIQUES IN THE ACHIEVEMENT OF SUSTAINABLE STRATEGIES GOALS

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ABSTRACT

The 2030 Agenda of the Sustainable Development Strategy includes 17 particularly important objectives, such as improving people's well-being, protecting natural resources or reducing the negative impact of human activities on the planet for future generations. Implementing and then monitoring these themes is crucial for the successful achievement of the objectives until 2030, but also for the improvement of existing policies, for better operation and more precise piloting. Geospatial data and earth observation can identify and localize regional differences. New techniques and tools can lead to the detection of social and economic disparities at both national and local levels. Many studies have revealed that geospatial data are effective tools for monitoring, achieving and progressing the objectives of the regional development strategy. However, there are very few studies aimed at the use of geo-monitoring tools in the implementation of sustainable development actions. Also, the standardization of the monitoring process for all countries together through the cooperation of the scientific and political communities is totally deficient. The aim of this paper is to assess the impact of the development of geospatial techniques on the implementation of the objectives of the sustainable development strategy by proposing a set of indicators that integrate the use, sharing, processing and aggregation of data in an efficient way in a multidisciplinary framework.

KEYWORDS: *Sustainable development, geo-monitoring, standardization, collaboration*

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ASSESSMENT OF COLLABORATIVE NETWORKS OF THE TRAINING PROGRAMS ON HUMAN CAPITAL DEVELOPMENT IN INDUSTRIAL CLUSTERS

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ABSTRACT

It is unanimously recognized that human resources are vital to achieving the performance of an organization, these two elements being positively correlated. In clusters, their development strategy and the professional human resources are essential factors of the improvement of competitiveness, which conduct to a group competitive advantage, associated to achieve a common goal. The qualified human resources by various trainings lead to improved competitiveness and development of industrial clusters and, investing in human resources brings many benefits to clusters. The objective of this study is to analyse the perception of managers of three clusters in North-western Romania on the role and importance of staff training programs within them, to analyse social networks in firms and identify the most important actors and the links between these, regarding the implementation of training programs. In doing so, questionnaires were applied as tools for conducting research, and then, Social Network Analysis. The results show that by using the Social Network Analysis easily can be identified agents that facilitate the rapid and efficient flow of knowledge and information to support training programs.

KEYWORDS: Human capital development, training programs, industrial clusters, SNA

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SITUATION OF CLUSTERES AT THE LEVEL OF THE NORTHWEST DEVELOPMENT REGION OF ROMANIA

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ABSTRACT

Through this analysis, those areas that have a development potential are brought to the fore, being anchored in the industrial state of affairs and in the technological evolution of development. Rational accessibility to functional specializations leads to public involvement and private investments based on the principle of "limited resources directed to limited areas". The promotion of clusters at the national level is carried out through the Association of Clusters in Romania, which is a founding member of the European Alliance of Clusters, while the Directorate of Industrial Policies and Competitiveness, socially coordinates the clusters, but also the National Association of Clusters in Romania, which elaborates various national strategies for their development. CLUSTERO has in its composition a number of 47 clusters out of a total of 76 that existed at the beginning of 2020, which brings to the fore the good practices of the members involved and the representation at the European and international level, but also at the national level of the clusters in our country. The cluster is a qualitative initiative through the excellence it confers on the harmonization of common objectives with the strategy and the cooperation between its actors by analyzing the poles of competitiveness that exist and validating the qualitative approach. Excellence in cluster management is considered to be a general condition for successful operation in: industry and the private sector in general, in public sectors and in public administration and government organizations. Therefore, it is obvious that excellent management should also be considered to be the main condition for a cluster organization to achieve the greatest cluster effects in a certain technological, industrial, regional and legislative field: for cluster participants, for the industrial sector and for the development of the regions. Common standards for excellent cluster management enable better mutual understanding, necessary for transnational cooperation between cluster and network organizations and thereby to promote successful international cooperation in the field of clusters.

KEYWORDS: *cluster, management, development ,*

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IMPACT OF DEMOGRAPHIC CHANGES IN ECONOMIC AND URBAN DEVELOPMENT IN ALBANIA

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ABSTRACT

During the past decades there have been immense changes in the economic development, demographic variables and urban structure in Albania. One of the main contributors to this change was the Territorial reform of 2015 that changed the administrational borders of Albanian cities. Just as the world trend, the population growth has slowed down in Albania whereas urbanization continues to rise and the construction sector continues to bloom, regardless of recent crises like Covid-19 pandemic and the Russian- Ukrainian war. Because of this strong relation between the above mentioned factors, in this paper we analyze the relationship between urbanization, businesses and population in terms of cities. As a proxy for urbanization we used the number of construction permits, for business the number of enterprises and for population the number of residents per city. The results show that the above mentioned relationship is different in different cities in Albania due to differences in demographic traits of these cities.

KEY WORDS: Population, Urbanization, Enterprises, Construction.

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A CROSS MODEL FOR PLASTIC MANAGEMENT BEHAVIOR

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ABSTRACT

The issues complicating plastic recycling are the quality and price of the recycled product compared to the original plastic. Since plastics are easily adaptable to the functional or aesthetic needs of each manufacturer, the diversity of the raw material complicates the recycling process, making it expensive and affecting the quality of the final product. As a result, the demand for recycled plastics, although growing rapidly, represented only 6% of the demand for plastics in Europe in 2018. The EU plan is to reach a circular economy by 2050, including by reducing the amount of plastic. The case study was carried out in academic environments in Romania and Turkey on a sample of 270 respondents to identify the factors that influence their behavior and attitude with reference to the important problem that plastic represents and the need to replace it with biodegradable plastic. The results showed that there are no differences regarding the importance of bio plastic, they have an education on environmental protection and are well informed, they also disseminate information about this phenomenon to the students.

KEYWORDS: *quality management, plastic, culture of quality, environment*

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AN ANALYSE OF FOOD WASTE MANAGEMENT ATTITUDE AND BEHAVIOR IN ROMANIA

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ABSTRACT:

Food waste is a problem that society has been facing lately. Every day, Romanians throw away around 6,000 tons of food, the equivalent of 300 trucks full of food, while 4.5 million people live on the edge of poverty, According to her, food waste does not only happen at the end consumer, but he is responsible for most of the food thrown away. Globally, not only in Romania, 55% of waste happens in households. But these foods not only produce food waste instead of being consumed, but are transformed into waste which in turn produce greenhouse gas effects that are very harmful to the environment and to humans alike. Food waste produces greenhouse gases in the landfill, which unfortunately has a negative effect on the environment. The case study identifies the factors that influence the behavior and offers solutions in order to correct the consumption behavior, but also how to influence the behavior of the supermarkets. A comparison regarding the behavior of consumers in Italy and Romania was made with the help of SWOT analysis; the behavior of consumers and their reorientation towards a healthy lifestyle and consumption towards domestic products were identified.

KEYWORDS: *food, waste management, consumer behaviour*

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A NEW PROVOCATION - EDUCATION 4.0

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ABSTRACT

Technology began to penetrate the educational process in the new millennium, and the pandemic was a real challenge in this field. For both students and teachers, the use of online platforms was a pioneering but also a challenge. The first steps were taken with Education 2.0 when it started to use technology in fundamental ways. Education 3.0 has emerged as technology has advanced, particularly with the widespread adoption of a more user-generated Internet. This allowed students to access their own sources of information, the ability to learn electronically, and platforms to communicate with teachers and other students. Education has become more networked, with students having their own direct connection to a number of different sources of knowledge, rather than focusing on a back-and-forth between students and teachers.The fourth stage is Education 4.0, which represents a learning technique that focuses on education through advanced and digitized technology. They all affect our daily lives. Universities must prepare their students for a world where cyber-physical systems are ubiquitous in all industries if they are to continue to produce successful graduates. This involves incorporating technology into the curriculum, completely changing the learning process, and leveraging technology to enhance the college experience..

KEYWORDS: *Education 4.0, digitalization, management change*

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A VISION ABOUT FUTURE OF BIO PLASTIC IN TURKEY

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ABSTRACT

The wastes collected separately from the recycling equipment and at the source are passed to the collection and separation facilities and the waste is accepted. The wastes are taken to the separation band to be classified according to their types. The wastes that go through the physical separation process on the belt are collected in the compartments. It is then baled and sold in bales to licensed recycling facilities. In the recycling facility, plastic waste is first broken into small pieces in crushing machines. After it is cleaned and dried in the washing pool, it becomes a burr or granule and becomes a raw material This scrap is sorted at its source in accordance with the orders and quality standards of our customers in our export markets, classified, suitable in terms of quality and supply sustainability. As the zero-waste project becomes widespread in our country, the amount, quality and sustainability of domestic recyclable waste will also increase. However, in order to have a share in the global circular economy, recyclable scrap imports must be made in this period in order for our domestic facilities to operate, expand their market shares, provide employment, and gain skills and standards in value-added products. In the study, three measurement tools were developed for students, academic staff and scientists, and industrial workers' awareness of the use of bioplastics. While developing the scale, items related to the sustainability understanding of university students were created. For this reason, it was acted with an environmentalist understanding. The survey was structured in three parts: the first investigated the socio-demographic characteristics of the questioned individuals (gender, age, education and grade) and the second was structured for the purpose of scaling methodology on students' perception about the concept of plastic sustainability and their participation indifferent

activities regarding plastic recycling. The third part identify respondents as consumer's behavior and attitude about healthy plastic education, how many from them select the plastic, if they are using green products.

KEYWORDS: *bioplastic, environment, waste management*

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PLASTIC WASTE RECYCLING FOR SUSTAINABLE ENVIRONMENT

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ABSTRACT

The problem of replacing plastic with biodegradable materials has become important considering environmental protection. Schools and universities have an important role in educating the young generation and their involvement in volunteering and for environmental education. A structured questionnaire was applied to obtain the necessary data as follows: individual characteristics (age, class, country of origin), the level of knowledge about plastic and its effects on the environment. Another part tries to identify their position in relation to the environment and how they have been or want to be involved in environmental protection activities. The study was carried out in schools to be able to see the level of information that the young generation has regarding plastic, the methods of recycling this one. Last but not least, they also specified the ways in which they want to obtain information and how they want to get involved in environmental protection.

KEYWORDS*: plastic, waste management, recycle, environment education*

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CURRENT STATE OF KNOWLEDGE AND RESEARCH OF THE ADOPTION AND APPLICATION OF BLOCKCHAIN TECHNOLOGY

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ABSTRACT

Blockchain technology has the potential to reshape the existing business models in the financial sector, by providing a number of attractive benefits among which the most relevant ones are: decentralization, absence of intermediaries, lower transaction costs, faster processing times, transparency and immutability of transaction data, usage of cryptography to secure data. To begin with, decentralization implies that all network members have access to a complete audit trail on a resilient distributed ledger. Also, blockchains operate as open-source protocols which provides data transparency, while also eliminating the need for a third-party intermediary to execute transactions. Because of this ability to remove middlemen, transaction costs are reduced. Furthermore, distributed ledgers allow network participants to operate with confidence because transactions are immutable-they are time-stamped and cannot be edited or reversed. Despite being a relatively new technological innovation, blockchain has already begun to make an impact across multiple industries since it creates a myriad of opportunities for transferring value between participants in a trusted and convenient manner. The technology's great potential is leveraged in a wide variety of domains, such as supply chain management, healthcare management, government and public services, energy, education, insurance, tourism, data management, Internet of Things as well as cybersecurity.

KEYWORDS *:blockchain, business models, financial sector*

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FINTECH AND FUTURE OF FINANCE

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ABSTRACT

The new Industry 4.0 trend also appeared in financial form, namely Financial Technology or Fintech. Fintech is used to help companies, business owners and consumers better manage their financial operations, processes and lives, using specialized software and algorithms that are used on computers and, increasingly, on smartphones. Fintech now includes various sectors and industries such as education, retail banking, fundraising and nonprofit and investment management, to name a few. In Romania, bank commissions were among the highest in the region, the chances of success for banks offering cost-effective alternative digital services for the younger generation are very high. The complete change to a digital system on Romania's financial scene will have the effect of reducing costs for the consumer as a result of cutting or eliminating the various costs borne by banking services, as well as by offering the most valuable advantage, convenience. The young generation in Romania is familiar with and opens to Fintech, so it's only a matter of time before it becomes the norm.

KEYWORDS: *fintech, finance, digital system, management change*

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