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An Empirical Examination of the Factors of Data Literacy

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Abstract. To fully leverage the abundance of data and how data enhances decision-making, people must be data literate. Data literacy (DL) encompasses a set of interrelated skills in data management, data analysis, and the ability to interpret and communicate the results. Measuring an individual's DL level is an important first step toward designing and developing educational programs to improve one's DL skills. This paper considers a DL measurement scale referred to as the Global Data Literacy Benchmark survey and then explores the underlying constructs of this instrument. Data gathered from 311 university students across five universities in the United States is analyzed to identify and interpret the underlying factors of this DL scale. Also, the differences in DL scores among various subgroups of the students are investigated. The results show the existence of three DL factors. Also, the DL scores vary considerably among students depending upon the study areas and the comfort levels with data and analytics.

Keywords: Data Literacy, Factor Analysis, Global Data Literacy Benchmark survey.

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A conceptual framework for assessing information security management practices in selected universities in Uganda

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Abstract. The purpose of this paper is to present a conceptual framework for assessing managerial level information security practices, governance, and activities in selected university institutions in Uganda. Extant literature was drawn from existing information security management practices in different organizations. The proposed conceptual framework consisted of four manageable areas, namely, information security governance practices, information security practices, personnel management practices, and physical security practices. These areas are further subdivided into 25 categories that provide a formal checklist for assessing existing information security management practices in university institutions in Uganda.

Keywords: Conceptual framework, information security management practices, university institutions in Uganda.

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Some Features of Social Structures and Institutions Transformation in the Digital Age

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Abstract. The paper examines the peculiarities of digitalization processes influence on the architecture of emerging socio-economic relations. The legal regulation issues of digital technologies and the shifts they cause in public life are considered. The relations arising in connection with the regulation of big data are compared. The evolution of big data into smart content is described. The phenomenon of the "digital twin" is considered, as well as its impact on the social sphere. The tendency to move away from the policy of direct prohibitions in the field of digital technologies and the transition to the control of physical entities (data centers) and the regulation of methods and approaches to data processing (algorithms) is shown. It is noted that the existing expectations from digitalization are overstated. At the same time, the increasing influence of digital technologies significantly changes the existing socio-economic landscape, generating new risks. The answer to these challenges should be the joint work of authorities, business, society and the expert community on the formation of digital culture. It is shown that an important aspect should be the development of expert systems that translate qualitative characteristics into quantitative indicators.

Keywords: Big data, legal regulation, artificial intelligence, digital twin, digitalization, social systems, transformation.

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Geomatics and smart tools in Digital Land Resources Mapping and Sustainability of Coastal Agriculture, Egypt

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Abstract. The northwestern coast of Egypt is characterized by an international interest due to its history and magnificent environment. The area was known as being the bread basket during the Greek and Roman periods. Recently, drastic changes in land use resulting in destructing many of water harvesting tools, thus diminution of the agriculture importance. Restoration of the area and planning self-sufficient communities needs to develop a sustainable land resources database for these regions. Multi concept of remote sensing and the Geographic Information System (GIS) permit to store, merge, and manipulate the huge amounts of thematic maps and attribute data. Sentinel satellite image 2018 scenes, covering the study area at the Egyptian northwestern coast, were acquired. ENVI software was used for image processing. A number of 53 topographic maps at scale 1:50000 were used to input GIS thematic layers relevant to land resources, using Arc_GIS 10.2 system. Field investigation was carried out to represent different soil units and collect ground control points. Chemical and physical soil properties were determined to assist soil classification. Soil map was produced including dominant geographic units and soil association. MicroLEIS system was employed to define soil suitability classes to olives, peach, wheat, beans, and sunflower crops. An intelligent module will be added to analyze the digital maps, interact the given data with learning tool (layer) to provide the decision makers with suggested solution not only information. The results showed that the soils are generally characterized by the presence of Calcic, Petrogypsic and Salic horizons. The limiting factors found in the piedmont and coastal plains are salinity, soil depth and texture. These factors decrease the suitability classes to be between S2 and S5. It can be concluded that the digital mapping of land resources using Geographic Information System (GIS) and satellite data preserve in the investment spent in soil and other thematic mapping.

Keywords: Soils, Space data, GIS, Digital soil mapping, Egypt, IoT.

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Improving Business Processes by Applying the Kaizen Philosophy in a Macedonian Textile Company

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Abstract. This paper presents the research aimed at developing a solution for advancing of business processes in a Macedonian textile company, by implementing techniques and methods of the Kaizen philosophy. The main objective of the paper is to make a comprehensive analysis of the factors that enable the improvement of the overall production process, thus achieving greater effectiveness and efficiency in the production operations, as well as greater market competitiveness. The solutions were based on the concept of improving the efficiency of operations, especially in the area of organization of production operations, in a way that enabled complete elimination of errors, greater productivity and increased quality of the final product, within a precisely defined time frame. Additionally, the paper also shows the key elements from the implementation of the Kaizen philosophy in the process of competitiveness improvement of the company.

Keywords: Kaizen philosophy; management tools and techniques; business processes; textile company; business performance.

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On fractal self-organization of the financial time series

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Abstract. Time series of five financial indexes daily returns were analyzed by means of multifractal and recurrence quantification (RQA) methods. It is shown that a financial crisis in 2008 year is accompanied with the increase in determinism and fractal self-organization. Such regularity is noted as analogous to other nonlinear systems behavior in catastrophic situations. At the same time, the global Hürst coefficient is minimal during the crises instead of maximum for physical systems.

Keywords: nonlinear dynamical systems, multifractals, recurrence quantification analysis, catastrophes.

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DETECTION OF NEOPLASMS IN THE PROCESS OF CLINICAL EXAMINATION OF THE ADULT POPULATION OF RUSSIA

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Abstract. The article analyzes the detection of neoplasms, including malignant ones, in the process of clinical examination of the adult population of Russia. It is shown that during the period of 2013-2020, 312206 cases of neoplasms, including 183436 malignant ones, were detected during the clinical examination. There is a tendency to an increase in the detection of neoplasms, including malignant ones, the average annual growth rate is 6.6%. Even taking into account the difficult epidemiological situation in 2020 caused by the new coronavirus infection COVID-19, which led to the termination for some time of the clinical examination, the detection of neoplasms, including malignant ones, continued to grow. Thus, detection of oncological diseases is increasing, which indicates the effectiveness of large-scale preventive measures, in particular, the clinical examination.

Keywords: active detection, medical examination of the adult population; screening; neoplasms; preventive measures.

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Briefs in Assessing the Adequacy of Health Care Facilities' Fixed Assets

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Abstract. This work considers some procedures to assess the adequacy of fixed assets for Health Care facilities activity. In terms of effectiveness, equitable distribution examines whether limited resources are directed toward improving the health of the population in the delivery of health care services. Assessing the adequacy of health care resources examines the extent to which resources are used to provide health system outcomes and/or achieve health system goals. The results of such an assessment: on the one hand can prevent waste of limited health care resources, and another hand to increase effectiveness of health care services.

Keywords: health care, facilities, nonfinancial assets, assessing, adequacy, effectiveness, efficacy, evaluation.

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