

INTERNAL AUDITING & RISK MANAGEMENT



YEAR XVII, No. 1 (65), March 2022



**ATHENÆUM
UNIVERSITY**

INTERNAL AUDITING & RISK MANAGEMENT

Bi-annual journal published by the „Athenaeum” University

YEAR XVII, No. 1 (65), MARCH 2022

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BREN Publishing House
12 Lucăcești Street, District 6, Bucharest, Romania
Tel/Fax: 0318179384
www.editurabren.ro
e-mail: brenprod@gmail.com
ISSN 2065 – 8168 (print) ISSN 2068 - 2077 (online)

Indexed by:
RePEc , CEEOL, SSRN, EBSCO, CiteFactor, Google Scholar

INTERNAL AUDITING & RISK MANAGEMENT

Bi-annual journal published by the „Athenaeum” University & Centre
of Excellence in Financial Management and Internal Audit

YEAR XVII, No. 1 (65), MARCH 2022

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DOI: 10.5281/zenodo.6392173

ESTABLISHING AND ACHIEVING THE OBJECTIVES OF ECONOMIC INFORMATION SYSTEMS THROUGH ALGORITHMS SPECIFIC TO BUSINESS APPLICATIONS

Dănuț-Octavian SIMION, PhD Associate Professor

Athenaeum University, Bucharest, Romania

danut_so@yahoo.com

Emilia VASILE, PhD Professor

Athenaeum University, Bucharest, Romania

rector@univath.ro

Abstract: *The paper presents the solutions for establishing and achieving the objectives of economic information systems through algorithms specific to business applications. Any information system needs to implement different objectives in accordance with the goals of the company it develops and so it must get the optimal algorithms for resolving smart problems with appropriate solutions. Smart algorithms are capable to resolve complex problems and out of the box requirements that derived from atypical situations generated by economical situations or business logic. The information systems are included in the information systems, and they are intended to serve the management of the economic unit, so it can be appreciated that the main objective of the information system coincides with the general objective of the basic economic activities. The main objective pursued by the introduction of an information system is the selective and timely provision of all levels of management with necessary and real information for the substantiation and operational elaboration of decisions on the most efficient development of the entire activity in the economic unit. The main objective therefore refers to the entire activity in the economic unit. In order to get to know the activity better, and to carry it out in the best conditions, other secondary objectives can be defined, which are called “conditions” for achieving the main objective. There must be compatibility between the main objective and the secondary objectives, in the sense that the achievement of the secondary objectives must lead to the achievement of the main objective. By implementing mathematical models and*

using computing techniques in specific activities, the computer system imparts increased values to the information system in terms of quantity and quality.

Keywords: *objectives of economic information systems, business solutions, data models, algorithms for business applications, economical data, information processes, business flows*

JEL Classification: C23, C26, C38, C55, C81, C87

1. Introduction

The computer system is included in the information system and has as object of activity, in general, the process of automatic data collection, verification, transmission, storage and processing, data are the raw material and information is the finished product.

Regarding the relationship between the computer system and the information system, it can be appreciated that the computer system tends to equalize the dimensions of the information system, but does not have the same scope as the latter, because within the information system there may be activities that can not be 100% automated.

An information system is composed of the following groups of elements:

- The technical-material basis of the system;
- The necessary SI programs;
- Information base;
- Scientific and methodological basis;
- Human resources;
- The organizational framework.

The technical-material base - consists of all the equipment for data collection, verification, transmission, storage and processing. Represents the hardware of the computer system (Schubert, 2019; Livesey, 2021).

Necessary programs SI - represents the software of the computer system and includes all the programs necessary for its operation: the operating system, specialized software for data management (DBMS, SGF), application programs.

Information base - refers to the data subject to processing, information flows, systems and code nomenclatures

The scientific and methodological basis consists of mathematical models of economic processes and phenomena, methods and techniques for the realization of information systems.

Human resources - are made up of specialized staff (analysts, programmers, system engineers, database administrators, operators, etc.) and

system beneficiaries. Because IT analysts cannot know the specifics of all the beneficiary units they may come in contact with over time, the IT team also recruits specialists from the beneficiary unit to have an idea of what can be done. with the computer, but especially to know very well what they want from the computer, in the context of the future computer system. Thus, a mixed team for the creation of the computer system is created (Sieja, 2019; Karimi, 2020).

Organizational framework - is specified in the organization and functioning regulation of the unit in which the computer system operates.

The functioning of a decisional information system presupposes the development of the following activities:

- collecting data on the state of the managed system and its environment;
- data transmission for processing;
- data processing in order to provide information necessary for the decision-making process;
- adopting decisions and sending them for execution;
- ensuring control and monitoring the implementation of decisions.

The information system makes the connection between the managed system and the management system, being subordinated to them. This link is bidirectional. It can be said that the information system is the „shadow” of the economic processes in the unit. The use of the calculation technique produced changes in the way of carrying out the activities carried out within an information system, and implicitly determined the appearance of the computer system concept.

2. Defining business objects for economical applications

Classification of the objectives from the point of view of the fields of activity on which the economic effects are reflected:

General objectives - are the objectives that affect the basic activity within the economic unit (supply, production, sales).

Objective example: Increasing the load capacity of production capacity. It is achieved by implementing mathematical models, planning, programming, scheduling, launching and tracking production. OR by implementing advanced models and techniques for planning overhauls and overhauls of equipment.

Objective example: Increasing labor productivity. It is done through the rational use of labor (operational monitoring of personnel activity is done on the computer).

Objective example: Optimal use of transport capacity (for car parks). It is achieved by implementing mathematical models that optimize transport routes, correlating the volume of goods to be transported with the capacity of means of transport (Korab, 2019; Riechmann, 2021). Example of objectives:

Decrease in the number of administrative staff or increasing the profit and profitability of the economic unit.

Specific objectives - are the objectives that affect the functioning of the information system.

Example of objectives: Increasing the speed of response to requests from beneficiaries. Increasing accuracy and precision in the process of data processing and information management is mandatory for economical managers. Ensuring the completeness of the information necessary for the management and ensuring the opportunity of the information necessary for the management. Simplifying and streamlining information flows. The economic effects of achieving the objectives of the information system are difficult to quantify, but can be estimated. In the end, they will positively influence the development of the basic activity. In conclusion, the economic effects of IT implementation are direct and indirect.

In terms of the possibilities to quantify their effects (objectives)

- Quantifiable objectives (quantitative): increase the volume of production, decrease transport costs, decrease specific consumption of raw materials and materials

- Non-quantifiable objectives (qualitative): increasing the prestige of the economic unit - is achieved for example by increasing the quality of production (or services), decreasing the refusals to the beneficiary

At the level of an economic unit, a lot of objectives can appear, but because the resources to achieve them are limited, it is necessary to know and prioritize them according to the requirements of the management. By presenting the objectives to the management and then to the employees, it is possible to know them, better understand the requirements for achieving the objectives, and as a result will gain a closer and wider acceptance of all factors that can compete in implementing the systems (Schubert, 2019; Karimi, 2020).

Classification of information systems according to the field of activities to which they refer (field of use):

- IT systems for managing economic and social activities. Their specificity is that the input data is usually provided by man-made documents (or by manually entered data). The output data is provided by the system in the form of documents (lists, reports, graphs, etc.) for a better perception of them by humans.

- IT systems for the management of technological processes - is characterized by: Input data are provided in the form of signals (electronic pulses) transmitted by certain devices automatically, which characterize various parameters of the technological process: pressure, temperature, humidity, composition. The output data are transmitted in the form of signals to some

enforcement bodies (regulators) that automatically modify the parameters of the technological process. This executes the command and automatic control of the technological process. Examples of such systems: the technological process regarding the manufacture of cement, the direction and control of steel mills, petrochemical processes, the manufacture of paper, etc.

There are differences between the objectives of the two categories of systems. Those for the management of technological processes have as objectives the improvement of the efficiency of the aggregates, the pursuit of the safety in operation, the increase of the quality indicators of the products, the improvement of other technical-economic indicators.

IT systems for the research and design activity - they aim to ensure the automation of scientific calculations, computer aided design and other facilities necessary for the specialists in the respective fields (Sieja, 2019; Riechmann, 2021). IT systems for the management of special activities (fields) - intended for specific fields of activity: information and documentation, medicine, legal field, etc.

Depending on the hierarchical level occupied by the economic system in the organizational structure of the company:

IT systems for the management of the activity at the level of the economic unit - can be decomposed into computer subsystems associated with the functions of the economic units: SI for production, SI financial-accounting, SI commercial, SI for human resources, etc.

IT systems for the management of the activity at the level of the organizations with group structure IT systems at the level of the autonomous utilities, at the level of some departments, etc. The structure of an IS of this type results from the integration according to systemic principles of the IS related to the component units, the outputs of these IS being taken over by the IS of the management body of the entire organization.

Territorial IT systems - at the level of the administrative-territorial units, they serve the substantiation of the decisions adopted by the local management bodies (city, county).

IT systems for the management of branches, sub-branches and activities at the level of the national economy - are elaborated and administered by the ministries, departments or bodies that have by law the task of methodologically coordinating the respective groups of activities.

General functional IT systems - intersects all branches and activities that take place in the space of the national economy: the financial system, the banking system, the statistical system.

Information systems play operational, managerial and strategic support roles in business and organizations, and can be grouped into enterprise

information systems, operational information systems and managerial information systems.

It is important for a manager to understand that SI directly supports functions for operational and managerial functions of the organization in accounting, finance, human resources, marketing and operational management. For example, marketing managers need information about volume and sales trends, provided by marketing IS (Applications: Sales Management,

Market research and forecasting, Promotion and advertising, Automation of the business of sales, Interactive Marketing, Customer Relationship Management – Costumer Relationship Management = CRM-, Production Management).

Economic managers need information on financial costs and benefits, provided by financial IS (Applications: Preparation of Revenue Budget and expenses, Financial Planning, Cash Management, and Investment Management). Production managers need information to analyze resource requirements and labor productivity provided by manufacturing. Personnel managers need information on rights employee salaries and professional development, provided by Information Systems of human resources (Applications: Personnel Records, Payroll and Staff Qualification Improvement) (Korab, 2019; Livesey, 2021).

Operational Information Systems processes data generated and used in business operations. Depending on the role they have, there are several categories: processing systems a transactions - records and processes data resulting from transactions, updates the bases data and produce a variety of documents and reports; process control systems - provides operational decisions that control physical processes; automated systems services - those that support communications.

Information Systems have always been necessary for the processing of data generated and used in business operations. Operational SI produce a variety of information, but they (information) does not highlight which information products are best suited for managers. For this reason, further processing through computer systems is necessary.

3. Algorithms used to integrate economic data into application modules

Searching and Sorting are two of the most common subproblems in programming. They are an essential part of many data processing processes. Search and sorting operations are frequently performed by people in everyday life, such as searching for a word in the dictionary or searching for a number in the phone book. The search is much simplified if the data in which we perform this operation are sorted (sorted, arranged) in a certain order (words in alphabetical order, numbers in ascending or descending order).

Sorting data consists of rearranging the data collection so that a field of the items in the collection follows a certain order. For example, in the phone book, each item (subscriber) has a name field, an address field, and a field for the phone number. This collection follows the alphabetical order by name field.

If the data we want to sort, that is, sort, is in the internal memory, then the process of rearranging the collection will be called internal sorting, and if the data is in a file (data collection of the same kind on the media external), then we will call the process external sorting (Sieja, 2019; Livesey, 2021).

Each element of the data collection is called an item and this in turn is made up of one or more components. A C key is associated with each item and is usually one of the components. We say that a collection of n articles is ordered ascending by the key C if $C(i) \leq C(j)$ for $1 \leq i < j \leq n$, and if $C(i) \geq C(j)$ then the string is ordered descending.

Search algorithms

There are some basic search techniques, and we'll assume that the data is in internal memory in a series of articles. We will search for an article by a field that we will consider a search key. The search process will show the position of the searched item (if any).

Noting with k_1, k_2, \dots, k_n the keys corresponding to the articles and with the key we are looking for, the problem is to find (if any) the position p with the property $a = k_p$.

Items are usually kept in ascending order of keys, so we'll assume that $k_1 < k_2 < \dots < k_n$.

Sometimes it is useful to find out not only if there is an item with the desired key, but also to find where otherwise a new item with the specified key should be inserted so that the existing order is maintained.

So the search issue has the following specification:

Date $a, n, (k_i, i = 1, n)$;

Precondition: $n \in \mathbb{N}, n \geq 1$ și $k_1 < k_2 < \dots < k_n$;

Results p ;

Postcondition: $(p=1$ și $a \leq k_1)$ sau $(p=n+1$ și $a > k_n)$ or $(1 < p \leq n)$ și $(k_{p-1} < a \leq k_p)$.

To solve this problem we will describe several SUBPROGRAMS.

A first method is sequential search, in which all keys are examined successively.

```

Search Secv subprogram (a, n, K, p) is: {  $n \in \mathbb{N}$ ,  $n \geq 1$  and}
{k1 < k2 < . . . . < kn}
{Searching for p as:}
{(p=1  $\wedge$  i a  $\leq$  k1) or (p=n+1  $\wedge$  i a > kn)}
{or (1 < p  $\leq$  n) and (kp-1 < a  $\leq$  kp)}
    Let p: = 0; {Case not yet found}
If a  $\leq$  k1 then p: = 1 otherwise
If a > kn then p: = n + 1 otherwise
For i: = 2; n executes
If (p = 0) and (a  $\leq$  ki) then p: = i End if
End if
End if
End if
End - SearchSecv

```

It is observed that by this method $n-1$ comparisons will be performed in the most unfavorable case, since the counter i will take all the values from 2 to n . The n keys divide the real axis in $n + 1$ intervals. The same number of comparisons will be made in $n-1$ of the $n + 1$ intervals in which the searched key can be found, so the average complexity has the same order of magnitude as the complexity in the worst case.

Obviously, in many cases this algorithm makes unnecessary calculations. Once the desired key has already been found, it is useless to cycle through the other values of i . In other words, it is possible to replace the FOR cycle with a TIME cycle.

```

CautSucc subprogram (a, n, K, p) is: {  $n \in \mathbb{N}$ ,  $n \geq 1$  and}
{k1 < k2 < . . . . < kn}
{Searching for p as:}
{(p=1  $\wedge$  i a  $\leq$  k1) or (p=n+1  $\wedge$  i a > kn)}
{or (1 < p  $\leq$  n)  $\wedge$  i (kp-1 < a  $\leq$  kp)}
    Let p: = 1;
    If a > k1 then
While p  $\leq$  n  $\wedge$  i a > kp execute p: = p + 1 End while
End if
End-SearchSecv

```

Another method, called binary search, which is much more efficient, uses the “divide et impera” technique on data, determines the relationship between the key of the item in the middle of the collection and the search key. Following this check, the search is continued in only half of the collection. This reduces the volume of the remaining collection for search by successive halves. Binary search can be done practically by calling the BinarySearch function $(a, n, K, 1, n)$, described below, used in the subprogram given below.


```

The SearchBin subprogram (a, n, K, p) is: {  $n \in \mathbb{N}$ ,  $n \geq 1$   $\wedge$   $k_1 < k_2 < \dots < k_n$  }
{Find p such that: (p=1 and  $a \leq k_1$ ) or}
{(p=n+1  $\wedge$   $a > k_n$ ) or ( $1 < p \leq n$ )  $\wedge$  ( $k_{p-1} < a \leq k_p$ )}
If  $a \leq k_1$  then p: = 1 otherwise
If  $a > k_n$  then p: = n + 1 otherwise
p: = BinarySearch (a, n, K, 1, n)
End if
End if
sf-SearchBin
The BinarySearch function (a, n, K, St, Dr) is:
If  $St \geq Dr - 1$ 
then BinarySearch: = Dr
otherwise m: = (St + Dr) Div 2;
If  $a \leq K[m]$ 
then BinarySearch: = BinarySearch (a, n, K, St, m)
otherwise BinarySearch: = BinarySearch (a, n, K, m, Dr)
End if
End if
End-BinarySearch

```

In the BinarySearch function described above, the variables St and Dr represent the ends of the search range, and m represents the middle of this range. Note that the BinarySearch function is called recursively. Recursion can be easily removed, as can be seen in the following function:

```

The BinSeaNotrec function (a, n, K, St, Dr) is:
While  $Dr - St > 1$  executes
m: = (St + Dr) Div 2;
If  $a \leq K[m]$ 
then Dr: = m
otherwise St: = m
End if
End if
BinSeaNotrec: = Dr
End-BinSeaNotrec

```

An algorithm is a finite text, a finite sequence of sentences of a language. Because it is invented specifically for this purpose, such a language is called algorithm description language. Each sentence of the language specifies a certain rule of calculation, as will be seen when we present the language Pseudocode (Schubert 2019; Riechmann 2021). Stopping at the meaning of the algorithm, at the effect of its execution, we will notice that each algorithm defines a mathematical function. Also, from all the following sections it will be very clear that an algorithm is written to solve a problem. However, it will be seen from several examples that there are several algorithms for solving the same problem.

4. Conclusions

Within the informational process, the information formation phases take place economic: collecting data resulting from the direct productive process of the system economic, their verification and transmission for the actual processing (regardless of technical means), the formation of economic information and its archiving. Part of the phases of the information process (eg data collection from primary evidence) is performed within the operational (managed) subsystem of the system economic. It can be appreciated that the subsystem in which the information process takes place together with part of the operational subsystem it forms the managed subsystem of information cybernetic system. The main role of the information subsystem is to provide information for the management of the entire economic system, for the functioning of the information system and for its maintenance within some preset limits (Sieja, 2019; Korab, 2019). Algorithms solve complex economic problems, which can be automated or can solve atypical and specific situations by adapting different application modules to meet the requirements of economic operators.

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DOI: 10.5281/zenodo.6392180

USING CRYPTOCURRENCIES, A MANAGEMENT STRATEGY FOR THE FUTURE

Laurențiu-George DINU, PhD

Valahia University of Targoviste, Romania

dinulaur2005@gmail.com

Abstract: *Strategic management is an important part of an entity's resources to achieve its goals. Involving the manager and the management team, knowing the context in which they act, setting goals, identifying trends in the field of activity, technological upgrade, identifying directions of action, global policies in the area, legislation and alignment with the online environment, make the organization's target easier to reach. This study is a review of the literature and articles, to help managers have a complete picture and to be a potential tool to help make decisions in the use or acceptance of cryptocurrencies. The world of cryptocurrencies is developing at a dizzying pace and it is imperative to ask ourselves if it can be a viable alternative to the classic payment methods for Romanian companies as well.*

Keywords: *cryptocurrencies, strategic management, blockchain, management strategies*

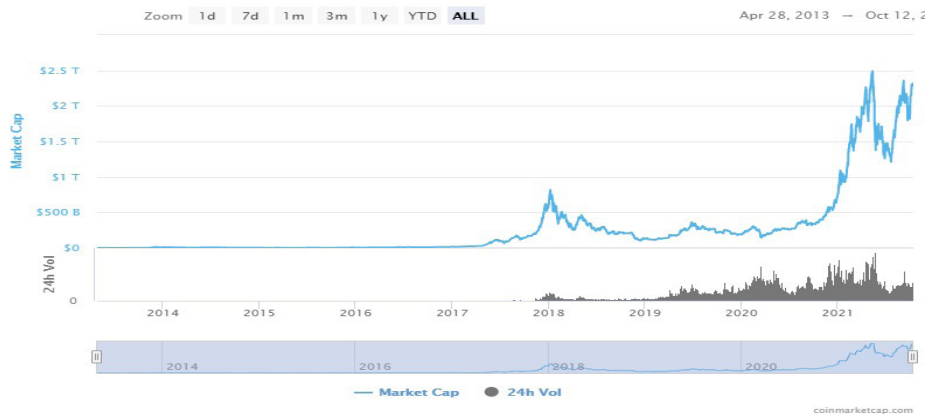
JEL Classification: *G23, G24, G28*

1. Introduction

Blockchain technology was first outlined in 1991 by Stuart Haber and W. Scott Stornetta, two researchers who wanted to implement a system in which time stamps of documents could not be changed. But only almost two decades later, with the launch of Bitcoin in January 2009, the blockchain had the first real-world application. The Bitcoin protocol is built on a blockchain. In a research paper that introduces digital currency, the creator of Bitcoin's pseudonym, Nakamoto (n.d.), referred to it as "a new electronic cash system that is peer-to-peer, without trusted third parties." Since then and until now, more than 12,645 virtual currencies have appeared, which are traded in over 412 exchanges around the world, and the total market capitalization is \$ 2,298,921,256,405 (Coin Market Cap, 2021a). It is often a mistake to consider a virtual currency

(cryptocurrency) as an electronic currency (Apti.ro, 2013). In Romania, the legislator makes a clear distinction between virtual currency and electronic money. The name cryptocurrency indicates that this means of payment uses cryptography and is decentralized to control transactions and prevent double spending, a common problem for digital currencies.

Figure 1. Total Cryptocurrency Market Cap



Source: Coin Market Cap (2021a)

Given these issues, the question arises: should managers consider the world of cryptocurrencies and focus on them? Should virtual currency payments be included in the management strategies of decision-making entities?

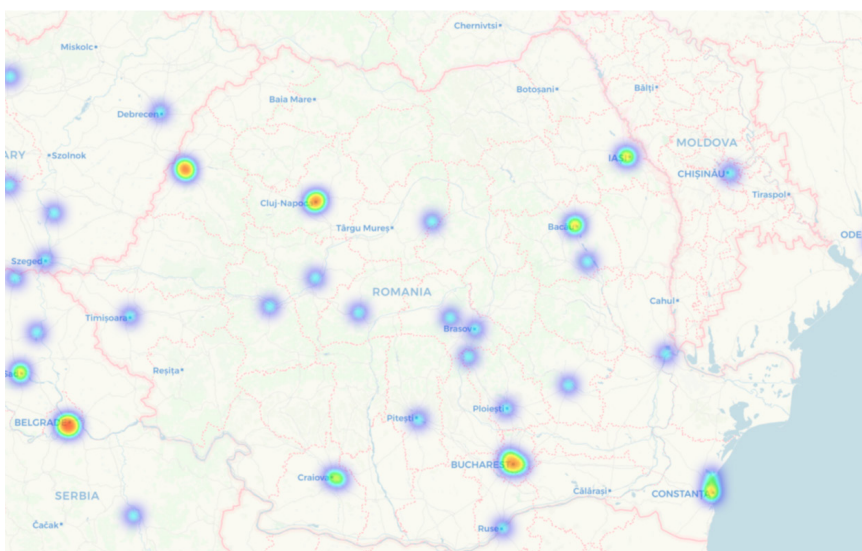
2. Literature review and proposals

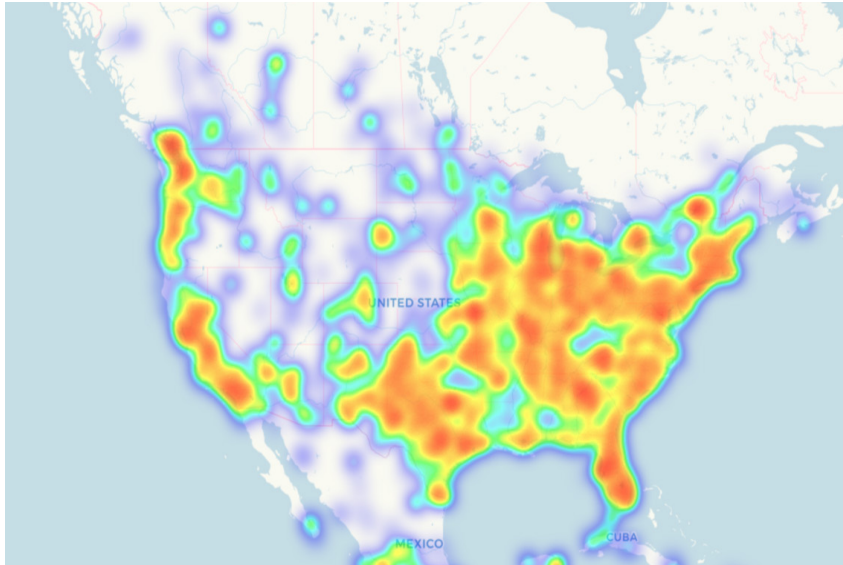
Currently, there is no specific legislative framework in Romania for cryptocurrencies, their possession and trading being considered neither illegal nor regulated, but undoubtedly taxable. In Romania, there are 4,502,810 companies (www.totalfirme.ro). Of these, over 30,000 traders registered in the Netopia system can accept payments in EGLD (eGold) currency as of 03/01/2021. The conversion from eGold to RON is done automatically in the NETOPIA Payments network, resulting in faster, more secure and low-cost transactions, both for those who accept payment in eGold and for those who pay using the Elrond network cryptocurrency (Criptomonede Romania, 2021). Among the merchants that accept payment in cryptocurrencies, we mention: PC Garage, evoMAG, Vola, BeKid, Il Passo, but also the University of Sibiu. Four people paid taxes in the summer of 2021 at the University of Sibiu using cryptocurrencies using Egold and Bitcoin (G4Media.ro, 2021).

Romanians are the most interested in cryptocurrencies in the world, according to Google searches till now, in 2021. Romania is 9th place by number of cryptocurrency Automated Teller Machine (ATMs) (Neagu, 2022). A cryptocurrency ATM works in a similar way to a conventional ATM, except that it is connected to a cryptocurrency account and not to a bank. The device allows people to buy cryptocurrencies with cash and debit or credit card. Some are bidirectional and also allow the sale of digital currencies in exchange for cash. The USA is the most “prepared” country in the world in terms of cryptocurrencies and dominates by far the top according to the number of ATMs, with 17,436 units. On the 2nd place are Canada, with 1,464 ATMs, followed by Great Britain (200 units) and Austria, with 157. Romania has, according to the quoted source, 86 crypto ATMs, before the Czech Republic, the next ranked, with 68 such units or Italy (11th to 65th ATMs) and Germany (14th to 53rd ATMs).

In the last year, Romanians have been the most interested in cryptocurrencies, the number of Google searches being 7,635 per 100,000 inhabitants, with the highest increase globally, of 331.3% compared to the previous year. If Romania ranks 9th in the world in terms of the number of ATMs with cryptocurrencies, in terms of the overall score that shows how ready our country is for cryptocurrencies and takes into account all indicators, we rank 33rd in the world, with a total of 5.1 points, tied with Austria. As expected, the USA has the highest score (7.4 points), followed by Cyprus (6.47) and Singapore (6.3).

Figure 2. Degree of acceptance of cryptocurrency payments. Comparison between North America and Romania





Source: Coin Map (20220)

Elrond Network, the Romanian unicorn that develops blockchain technology, announces (Costea, 2021) the acquisition of Capital Financial Services, a company licensed by the National Bank of Romania to operate as an electronic money issuer in the European Economic Area. Capital Financial Services, which operates under the Twispay brand, offers payment processing services for online merchants. The acquisition of the company makes it easier for Elrond users to access financial services, in full compliance with the regulations in force. “This is a strategic first step in the plan to enter the global payments market. The Elrond infrastructure facilitates payments at an incomparably lower cost than anything currently available on the market, at a much higher speed, between anyone, from anywhere in the world. The e-money license under the tutelage of the NBR ensures our legal compliance to achieve this global payment system” said Benjamin Mincu, CEO of Elrond Network, for Forbes Romania. The acquisition must be approved by the National Bank of Romania. In September, the Sibiu company Elrond Network, which also launched a digital currency - EGLD, announced that it had exceeded the threshold of a market capitalization of 5 billion dollars, in the context in which the price of a currency is over 200 dollars.

The year 2020 was an alarm signal for the entire business environment because the unforeseen challenges that arose from the pandemic context forced us to make last-minute decisions to adapt to the rapidly growing use of technology and the digital environment, says Ovidiu Toma, CEO of Crypto DATA (Neagu, 2021).

Cryptocurrencies are never far from titles these days. If there is no news that the value of Bitcoin has reached a record \$ 65,000 for the first time in 2021, it is news that Tesla founder Elon Musk is investing billions in it, along with investments in lesser-known currencies such as the ShibaInu token. or BabyFlokiCoin. As the buying and selling of crypto becomes more common, the opportunities to spend virtual currencies are somewhat limited in comparison due to its volatility. However, there are a growing number of companies in a multitude of industries - from high technology to airlines - that accept cryptocurrencies, allowing customers to use them as the official method of payment for their goods and services.

Internationally, the Hong Kong-based Pavilion Hotels & Resorts group accepts payment in 40 cryptocurrencies, starting in July 2021, following the conclusion of a partnership with Coindirect (Walsh, 2021). AXA Insurance, Microsoft, Starbucks, Tesla, Amazon, Visa, PayPal, airBaltic, Sotheby's, Coca Cola, LOT Polish Airlines, Expedia, Home Depot, Lush accept payments in cryptocurrencies, and the list goes on.

Also, at the state level, starting with 09.06.2021, El Salvador accepts payment in BTC (Coin Market Cap, 2021b) and in Venezuela, starting with 01.10.2021, citizens can buy plane tickets through cryptocurrencies.

3. Using cryptocurrencies – Advantages

The advantages of cryptocurrencies over banks and real money are that they can become a successful alternative to the classic banks. Bankers argue that transactions are guaranteed and the risks are lower. However, the bank account implies the existence of a third party in the bank-customer relationship. In addition, at the bank you have to accept account fees, some hidden, which does not happen when you use cryptocurrencies. In addition, the security of your operations is given by the key you have assigned to the Digital Wallet with which you trade. Also, important advantages of cryptocurrencies over banks, compared to banking operations, is that when working with cryptocurrencies, you can use platforms, get in direct contact with other users or you can trade through a broker. The great advantage of cryptocurrency is that it does not depend on a central authority. If you have a company or you are a trader, you will be able to avoid bank credit for development, a loan that obliges you to guarantees, mortgages, interest, hidden fees, which can reach up to 3% of the traded value, choosing to invest in cryptocurrencies. If you are a seller and use crypto-currency, you are no longer in danger of the money you expect as payment for the services offered being blocked due to problems that the person who bought from you has and cannot send you the money. which you expect and without which you cannot pay, say, employee salaries.

In the financial world, the use of cryptocurrency can generate a movement of significant magnitude as, say, the steam engine has revolutionized navigation on the seas and oceans, compared to the classic sailing ships. It is estimated that more than 2 billion people on Earth cannot have their own bank account, so they are an emerging market for a cryptocurrency and thus become a loss to the banking system, unable to absorb them. Or, it is known, a bank disappears if it keeps its money in a safe house and does not invest it so that its money generates added value.

In addition, low-income families who set up bank deposits have problems with the numerous commissions, risking receiving less money than they deposited in the bank before maturity, due to the rigidity of the contract.

Even the states of the world whose banking system has reached the brink of collapse have chosen to invest in cryptocurrencies. In addition, cryptocurrency, by being a digital currency, is driving the unprecedented development of e-commerce.

Let's not forget that banks are subject to local, regional, national, continental or global legislation. Often, where there are problems, political or military conflicts, classic transactions are called into question. Or, by choosing cryptocurrency operations, local or continental differences are eliminated, because the sine qua non of using cryptocurrency is that the users involved in the transaction must be connected to the Internet.

Another great advantage is that the rise of the cryptocurrency market determines a much larger efficiency of international transfers. The advantage of Blockchain technology is that more and more companies, from local to multinational ones, are turning their attention to cryptocurrencies, to the detriment of the classic banking system.

Blockchain seems complicated at first glance and certainly can be, but its basic concept is really quite simple. A blockchain is a type of database. In order to be able to understand the blockchain, it helps you to first understand what a database really is.

A database is a collection of information stored electronically on a computer system. The information or data in the databases is usually structured in table format to allow easier searching and filtering of specific information.

Spreadsheets are designed for one person or a small group of people to store and access limited amounts of information. Instead, a database is designed to host significantly larger amounts of information that can be accessed, filtered, and manipulated quickly and easily by any number of users simultaneously.

Large databases do this by adding data to servers that are made up of powerful computers. These servers can sometimes be built using hundreds or thousands of computers to have the computing power and storage capacity needed by many users to access the database simultaneously. While a

spreadsheet or database can be accessible to any number of people, it is often owned by a company and managed by a designated person who has complete control over how it works and the data within it.

A blockchain is different from a database by:

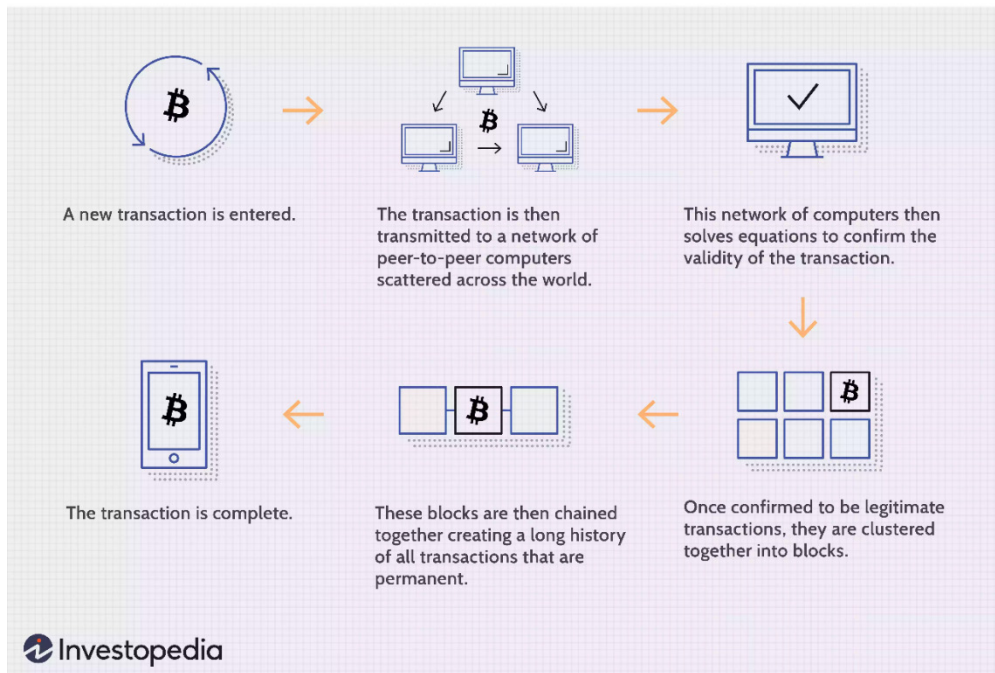
- ✓ Storage structure

A key difference between a typical database and a blockchain is how the data is structured. A blockchain collects information together into groups, also known as blocks, that contain sets of information. Blocks have certain storage capacities and, when filled, are chained to the previously filled block, forming a data chain known as a “blockchain”.

A database structures its data into tables, while a blockchain, as its name suggests, structures its data into pieces (blocks) that are chained together. This makes all blockchains databases, but not all databases are blockchains. This system also inherently makes an irreversible chronology of data when implemented in a decentralized nature. When a block is filled, it is set in stone and becomes part of this chronology. Each block in the chain receives an exact timestamp when it is added to the chain.

- ✓ Transaction process

Figure 3. The transaction process of cryptocurrencies



Source: Hayes (2022)

- ✓ Specific attributes of cryptocurrency
- ✓ Decentralization

In order to understand the blockchain, it is instructive to visualize it in the context of how it was implemented by Bitcoin. Like a database, Bitcoin needs a collection of computers to store its blockchain. For Bitcoin, this blockchain is just a specific type of database that stores every Bitcoin transaction ever made. In the case of Bitcoin and, unlike most databases, these computers are not all under one roof and each computer or group of computers is operated by a single individual or a group of people. In a blockchain, each node has a complete record of the data that has been stored on the blockchain since its inception. For Bitcoin, the data represents the entire history of all Bitcoin transactions. If a node has an error in its data, it can use thousands of other nodes as a reference point to correct itself. In this way, no node in the network can change the information held within it. Because of this, the transaction history in each block that makes up the Bitcoin blockchain is irreversible.

- ✓ Transparency

Due to the decentralized nature of the Bitcoin blockchain, all transactions can be viewed transparently, either with a personal node or using blockchain explorers that allow anyone to see the transactions taking place live. Each node has its own copy of the chain that is updated as new blocks are confirmed and added. This means that if you want, you can track Bitcoin wherever it goes.

- ✓ Security

Blockchain technology explains security and trust issues in several ways. First, new blocks are always stored linearly and chronologically. That is, they are always added to the “end” of the blockchain. If you take a look at the Bitcoin blockchain, you will see that each block has a position on the chain, called “height”. As of November 2020, the height of the block had so far reached 656,197 blocks.

Once a block has been added to the end of the blockchain, it is very difficult to go back and change the content of the block, unless the majority has reached a consensus to do so. This is because each block contains its own hash, along with the hash of the block in front of it, as well as the aforementioned time stamp. Hash codes are created by a mathematical function that turns digital information into a string of numbers and letters. If that information is edited in any way, the hash code also changes.

- ✓ The aim for which it was created

The purpose of the blockchain is to allow the recording and distribution of digital information, but not its editing. The main thing to understand is that Bitcoin only uses the blockchain as a means of transparently recording a payment register, but the blockchain can, in theory, be used to immutably record any number of data points. As discussed above, this could be in the form of transactions,

election votes, product inventories, state identifications, house documents and more. Currently, there are a wide variety of blockchain-based projects that seek to implement blockchain in ways other than helping the company, other than recording transactions. A good example is the use of the blockchain as a way to vote in democratic elections. The immutability of the blockchain means that fraudulent voting would become much more difficult to achieve.

✓ Applications for Blockchain technology

This impressive technology provides the support needed for decentralized tracking and transaction of anonymous digital currencies around the world. While blockchains allow cryptocurrencies to function, their functionality has applications beyond cryptocurrencies. For example, banking and fintech payment companies have already shown a major interest in blockchain technology. From insurance and real estate to crowdfunding and data management, the potential applications of blockchain technology are numerous and it is likely that there will continue to be new ways to adapt this technology to the core business world in the future.

However, there is an important use of blockchain technology that exists outside of its more traditional business applications: Some of the world's emerging economies benefit from the integration of blockchain technology in various ways. In various countries, such as India, Kenya and East Africa, blockchain technology has found uses in banking and financial services, supply chains, agriculture and in the management of land ownership records.

Among its many benefits (primarily its ability to keep data secure), blockchain technology also aims to accelerate and reduce transaction costs and boost financial inclusion by providing more opportunities for those who do not have easy access to services. financial.

✓ Banking opportunities

In many parts of the world, individuals do not have easy access to banking services. With blockchain technology, users around the world could access banking services where they would not otherwise have the opportunity. In particular, people in emerging economies where there are no easily accessible standard banks could use blockchain technology to access these services. A specific application is the use of the blockchain for instant transfers of money between countries and without major fees and delays. In India, ConsenSys Ventures, a blockchain software firm, worked with India's National Institute for Transformation (NITI) Aayog, the Indian government's policy think tank, to implement the blockchain in a land titling project. ConsenSys Ventures has also signed an agreement with the Andhra Pradesh state government for a number of uses for its technology, including in land titling, supply chains and medical records. Crypto billionaire Vitalik also donated \$ 1 billion worth of

Shiba Inu and Ethereum (Chakravarti, 2021) coins to the India Covid-19 aid fund, which were redeemed this year. Crypto Relief announced its partnership with UNICEF India and the Ministry of Health and Family Protection, India, to procure 160 Mn syringes for a faster deployment of vaccines in the country. Sandeep Nainwal, the polygon's founder, announced that Crypto Relief had donated \$ 15 million (over INR 110) to UNICEF India. In Kenya, IBM has partnered with Twiga Foods, a business-to-business logistics platform for food kiosks and stalls in Africa, to expand microfinance lending to vendors. These loans were intended to help sellers buy and manage multiple stocks. IBM's contribution has been to build a blockchain-enabled lending platform that can determine the creditworthiness of food suppliers. In Nigeria, blockchain technology has been used to monitor toxin levels along the Niger River, where efforts are being made to clean up the river belt. The international organizations funding these projects rely on these data as part of their reporting requirements. In Haiti, victims of hurricane and earthquake damage over the past decade will also benefit from the blockchain, for the registration and recording of property transactions, voting, intellectual property and other aspects of bureaucracy. In 2019, La Banque de la République d'Haïti announced that it is considering a pilot program that uses blockchain technology to create a digital version of the Haitian Gourde. The aim of this project would be to improve the domestic payment system and promote financial inclusion in Haiti.

✓ emerging economies

For Paul Domjan, former global head of research, analysis and data at the investment bank Tellimer (formerly Exotix), emerging nations are the most promising beneficiaries of blockchain technology. He argues that because "border markets in Latin America, sub-Saharan Africa and South Asia lag far behind, in the field of property registration, with an average performance of less than half that of the best performing economies", they are prepared for the benefits of the blockchain (Bitcoinist, 2021).

Amnesty International Director Mark Dummett expressed cautious support for the integration of the blockchain into efforts to address these and other issues affecting developing countries, saying: "You need to pay attention to technological solutions to problems. which are also political and economic, but the blockchain can help. We are not against it" (Consensys, 2021).

- ✓ factors that have an impact on cryptocurrencies around the world, such as the public interest, the legal position of the government, and whether or not they can be used in banks
- ✓ number of digital currency owners
- ✓ the number of online searches about cryptocurrencies
- ✓ accessibility of Bitcoin, Dogecoin and other digital currencies, especially the prevalence of cryptographic ATMs

Indeed, global financial services firms are seeing a growing demand from their customers for access to bitcoin and other cryptocurrency-related products, and capital markets are also facing a wide range of crypto-related developments. As the field continues to grow, other organizations are exploring whether to get involved and where to start.

Given the above, should managers ask what are the realistic use cases for their organization? The board of directors of financial services firms should begin by asking whether the organization can leverage cryptocurrencies to increase the value of existing products or services. Firms in the trading ecosystem, such as payment companies and merchants, may seek an increase in the volume of transactions or the interest of new customers in cryptocurrency. The business case to do this must be offset by the risk of volatility in cryptocurrencies. The boards of these firms should also ensure that management has explored the likelihood that cryptocurrency will be used for payments rather than as an asset, where it is widely used today.

Other opportunities, partly due to the development of a derivatives market, allow financial services firms to participate in the cryptographic ecosystem. Moreover, financial services companies can quickly serve the interest of new customers in exposure to encryption.

Thus, blockchain technology is currently being actively developed; It is a promising tool for many areas of economics and business. The advantages of a distributed register, such as the lack of a hierarchy of participants, the ability to carry out transactions with protected persons personal data, the high ability to adapt to different processes - from carrying out insurance operations to tracking the supply chain - make this technology and solutions based on it more than relevant. The ability to optimize processes and create cheaper alternatives to existing mechanisms is confirmed by the experience of companies such as ING, Santander, Walmart, Maersk, etc. The prospect of conducting secure transactions protected by cryptography and consensus mechanisms attracts investments in billions of dollars in blockchain projects worldwide (Lewis, 2018).

It is essential that governments allow the development of bottom-up digital currencies and not impose them from a top-down central bank. In this way, the necessary trials and errors develop a successful model can happen through an open and responsible competitive process (Powers, 2014).

4. Conclusions

Managers are, or will soon be, obliged to consider the implications of the direct impact of cryptocurrencies on their business and the potential indirect impact from several angles. In addition, there is considerable potential for new business

models, which are beginning to emerge in many areas. Cryptocurrencies tend to polarize opinion between skeptics and strong supporters, and so far, there are few intermediate points. However, this is changing rapidly. The study of the field, the identification of opportunities, the harmonization with the utility of the alternative instrument used, investments in technology are necessary steps to be made in order to be in connection with the future. Managers have various tools at their disposal to document themselves. From scientific articles, to charts, analyzes, articles, news, statistical tools such as Descriptive Statistics, Root of unity, Granger and Johansen causality test, co-integration tests, Cryptocurrency index (Coinbase Index), analysis of the efficient market hypothesis (EMH) etc., in order to be able to make the best decisions for the companies for which it operates.

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DOI: 10.5281/zenodo.6392186

ANALYSIS THE POTENTIAL OF THE RURAL ENVIRONMENT IN ROMANIA

Brîndușa Mihaela RADU, PhD Associate Professor

Athenaeum University, Bucharest, Romania

bmradu@yahoo.com

Mariana BĂLAN, PhD Professor SR I

Institute for Economic Forecasting – NIER, Romanian Academy

dr.mariana.balan@gmail.com

Abstract: *The process of transition from the super centralized economy to the market economy has generated, in the agriculture and rural development of Romania, multiple economic and social problems. Therefore, it is normal for concerns about identifying solutions and methods to solve them to mobilize more and more specialists in the field (Dona, Dobre, Georgely, 2005). In this context, the experience of other countries could not be ignored, among which a special place is occupied by the member countries of the European Union. At present, agriculture and rural development in Romania continue to be in a state of crisis, and the economy is far from stable in order to sustain it. On the contrary, the declining ratio of rising prices for agricultural products to those of industrial products bought by farmers deepens price shifts, leading us to the conclusion that agriculture is declining compared to other countries, especially those in the EU, which represents the model and the target it aims at. In this context, we mention that Romania is in the process of implementing the European model of agriculture and rural development. Starting from the general (principles, mechanisms) and reaching the particular (the case of the European Union countries and the situation in Romania), by analysing the rural area, the paper tries to formulate solutions and proposals according to the concrete conditions regarding the creation of a favourable economic environment. development, in the sense of consolidating a sustainable and multifunctional development of the rural space (Patriche, n.d.).*

Keywords: *rural potential, rural environment, rural tourism, sustainable development*

JEL Classification: *Q11, Q13, Q16, Q24, Q32, R14*

1. Introduction

The first and most common terminological inaccuracy refers to “rural area” and “agricultural area”; “rural activity” and “agricultural activity” or more simply “rural - agricultural activity”. It should be noted from the outset that the two notions, although relatively appropriate, cannot be confused or considered synonymous. The scope of the notion of rural space, rural activity, of rural in general, is wider, more extensive, including within it the notions of agrarian space or agrarian activity or, simply, agrarian. Analysing in evolution the rural-agrarian correlation, a certain modification of it is found. In predominantly agricultural societies, the highest share of activities in rural areas is held by agricultural activities¹.

Over time, the rural area has diversified both structurally and functionally, in the sense that more black structures and activities have emerged. The rural area is a very complex concept, which has generated a great diversity of opinions regarding the definition, the scope and its components. To understand the complexity of this concept it is necessary to define, even briefly, the main specific notions and its components, such as:

- The rural includes all the activities that take place outside the urban and includes three essential components: the administrative communities made up of relatively few members and who have mutual relations; pronounced dispensation of the population and collective services; the special economic role of agriculture and forestry.

Although, from an economic point of view, agriculture and forestry have an important place, the meaning of the word “rural” is broader than that of agriculture or forestry, which includes other activities such as: industry specific to rural areas; handicrafts, productive services on agricultural production and unproductive on the rural population².

- The rural area is a notion that, due to its complexity, has generated numerous opinions, which differ from one author to another, but in essence almost the same conclusions are reached.

According to some opinions, it is considered that “rural space” can be defined according to the notions that characterize it, it includes everything that is not urban. This general definition often creates confusion between the notion of rural and the notion of agricultural, which does not correspond to reality. The rural space is not a concrete and heterogeneous space. Heterogeneity can be viewed in two ways: the first refers to the terrain - topography, subsoil, soil and microclimate; the second aspect refers to demography - density, polarization

1 <https://www.scribub.com/management/ORGANIZAREA-SI-AMENAJAREA-SPAT22575.php>

2 <https://www.scribub.com/economie/agricultura/SPATIUL-RURAL-ORIENTARI-METODO42165.php>

from small settlements to large urban agglomerations. A more complete definition of the rural area appears by taking into account the following criteria: morphological (number of inhabitants, density, type of environment), structural and functional (type of activities and relationships).

From this definition of the rural space are highlighted at least the following elements (Dona, Dobre, Georgely, 2005):

- the rural area is characterized by a low population density;
- the forms of human settlement are the villages and communes, characterized by the individuality and discontinuity of the built space;
- productive activity is predominantly agricultural and forestry but does not exclude the processing industry and rural trade;
- relationships between people are mainly based on mutual knowledge from all points of view;
- the environment is much less polluted than in urban areas, etc.

The final form of the definition of the rural space is found in Recommendation no. 1296/1996 of the Parliamentary Assembly of the Council of Europe on the European Charter for Rural Affairs in the following form: the expression (notion) of “rural area” includes an inland or coastal area containing villages and small towns for:

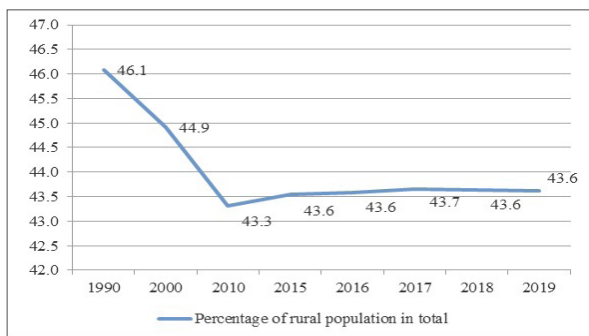
- a. agriculture, forestry, aquaculture and fishing;
- b. the economic and cultural activities of the inhabitants of these areas (crafts, industry, services, etc.);
- c. the arrangement of non-urban areas for leisure and entertainment (or nature reserves);
- d. other uses (excluding living)”.

2. Analysis of the Demographic Potential of the Rural Environment

With the political events of December 1989, the rural environment in Romania underwent massive structural transformations. The CAPs and IAS were abolished, the lands of the peasants were returned, the agriculture practiced here was transformed into subsistence agriculture. Another decisive phenomenon for that period was the return of a fairly large mass of people, who lost their jobs in the city, with the abolition of large factories and factories, which amounted to a large mass of employees.

However, the rural population decreased as a share of the total population (Figure 1), due to the massive emigration of labor from the rural area. The villagers went abroad in search of a job.

Figure 1. Evolution of the rural population after 1990

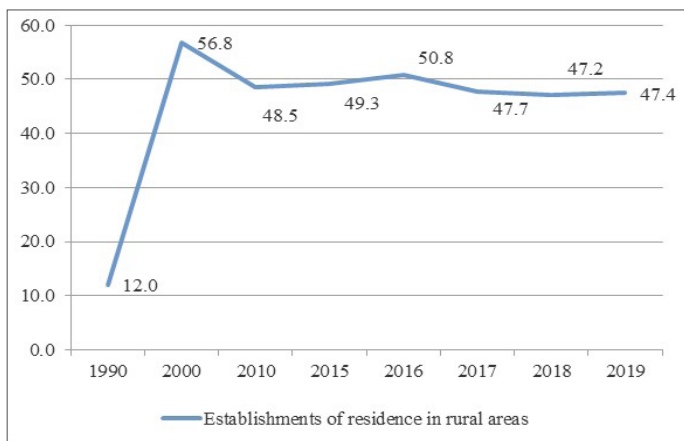


Source: Own calculations based on TEMPO database data online, <http://statistici.insse.ro:8077/tempo-online>

It can be seen that after a sharp decrease in the percentage of the rural population in total from 1990-2010, this percentage tends to stabilize around 43.6%. Analysing the evolution of residences in rural areas (Figure 2), we find that the evolution changed radically after 1990. If until 1990, the changes of residence were almost exclusive from rural to urban (in 1990, only 12% there were changes of domicile with settlement in rural areas), this process was reversed, registering continuous increases, thus in 2000 this percentage reached 56.8%. After 2010, this percentage stabilized around 48%.

So, there is still a tendency for people to settle in rural areas, which are considered cleaner, less polluted and of course with lower living expenses.

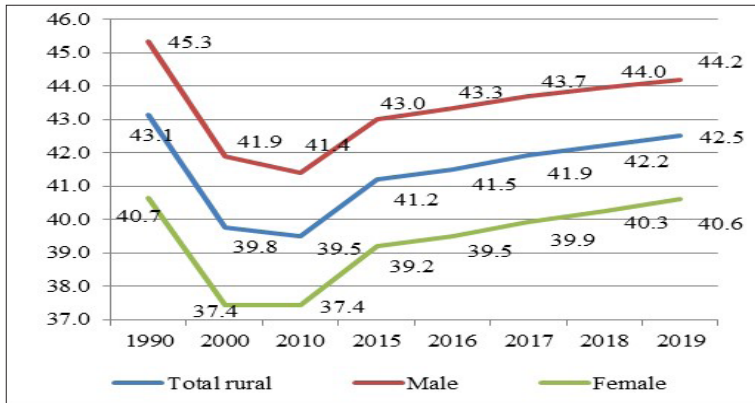
Figure 2. Evolution of the percentage of changes of residence in rural areas (calculated as a percentage of the total changes of residence at national level)



Source: Own calculations based on TEMPO database data online, <http://statistici.insse.ro:8077/tempo-online>

Regarding the evolution of the working age population in rural areas (Figure 3), the evolution is different.

Figure 3. Evolution of the percentage of the working age population in rural areas, by total and by sex after 1990



Source: Own calculations based on TEMPO database data online, <http://statistici.insse.ro:8077/tempo-online>

After the sharp decrease recorded in the period 1990-2000, the evolution of the working age population has an upward trend, especially after 2010. We find that the predominant rural population is the male population throughout the period analysed, in 2019, 44.2% of the male working age population in our country was in rural areas, and 40.6% of the female working age population in our country was in rural areas. This means that on average we get a figure of 42.5% of the working age population, existing in rural areas.

The rural population has a higher average age than the existing population at national level (Table 1), both in total and by sex. From here we can conclude that, in general, the rural environment in Romania has an older population than the national population.

Table 1. Average age of the resident population on July 1 by sex, total and in rural areas

	2012	2013	2014	2015	2016	2017	2018	2019
Total	40,8	41,0	41,2	41,4	41,6	41,8	42,0	42,2
Rural	41,1	41,3	41,5	41,6	41,8	41,9	42,1	42,3
Male-total	39,1	39,4	39,6	39,7	39,9	40,1	40,3	40,5
Male -rural	39,4	39,6	39,7	39,9	40,1	40,2	40,4	40,6
Female-total	42,3	42,6	42,8	43	43,2	43,4	43,6	43,8
Female-rural	42,9	43,0	43,2	43,3	43,5	43,6	43,8	44,0

Source: TEMPO online base, <http://statistici.insse.ro:8077/tempo-online>

If in total, the differences are not significant in terms of the rural population, analyzed by age groups (Table 2), we find the real problem of the rural population in Romania.

Table 2. Distribution by age groups of the population living in rural areas

	1990	2000	2010	2015	2016	2017	2018	2019
Total	45,9	45,0	43,3	43,6	43,7	43,6	43,6	43,6
0- 4 years	44,9	53,2	45,6	45,7	45,8	45,5	45,4	45,2
5- 9 years	44,9	53,2	45,6	45,7	45,8	45,5	45,4	45,2
10-14 years	40,3	43,9	51,7	50,6	49,8	48,9	48,2	47,6
15-19 years	39,9	50,6	49,7	46,4	46,4	46,4	46,4	46,4
20-24 years	47,3	41,8	41,6	48,7	49,9	50,6	51,0	51,3
25-29 years	40,3	43,9	51,7	50,6	49,8	48,9	48,2	47,6
30-34 years	34,5	40,6	39,2	38,5	38,8	39,3	39,5	39,9
35-39 years	47,2	40,1	49,1	52,4	52,6	52,6	52,4	51,9
40-44 years	37,6	33,3	39,5	43,5	43,3	42,7	42,0	41,5
45-49 years	47,3	41,8	41,6	48,7	49,9	50,6	51,0	51,3
50-54 years	51,4	41,9	34,9	38,6	39,5	40,5	40,3	40,8
55-59 years	41,3	45,3	38,0	41,2	42,2	43,0	44,1	45,2
60-64 years	58,3	54,0	43,1	37,4	36,8	36,4	36,3	36,6
65-69 years	34,5	40,6	39,2	38,5	38,8	39,3	39,5	39,9
70-74 years	61,6	59,5	53,0	49,4	48,8	47,9	46,6	45,2
75-79 years	31,9	37,0	42,6	40,1	39,7	39,5	39,3	39,1
80-84 years	64,2	60,1	56,1	54,8	54,5	53,9	53,1	52,3
85 years and over	37,6	33,3	39,5	43,5	43,3	42,7	42,0	41,5

Source: Own calculations based on TEMPO database data online, <http://statistici.insse.ro:8077/tempo-online>

The lowest share of the population by age groups in rural areas is the population under 19 years (whose shares vary around 45% of the total population of the same age nationally), but also the population between 30-34 years (whose share varies around 39% of the total population of the same age nationally).

On the other hand, we find that the rural population far exceeds the national average in terms of the population aged 80-84. Surprisingly, the population aged 85 and over accounts for only 41.5% in rural areas, which confirms that the rural population, although much older than the national population, does not have as high a life expectancy. as the urban population. This is due to the difficult access to medical services, endowments with

precarious medical units in this area, as well as the more difficult education and work that the inhabitants provide in agriculture.

3. The Economic Potential of the Rural Environment

– The agri-food sector

Represents the basic sector in rural areas. It produces the main crops that form the basis of human and animal nutrition. The surface of the land fund in Romania which is assimilated with the surface of the country (Table 3) consists of arable land, natural pastures and meadows, vineyards and orchards, forests and other lands with forest vegetation, constructions, roads and railways, waters and ponds, other surfaces.

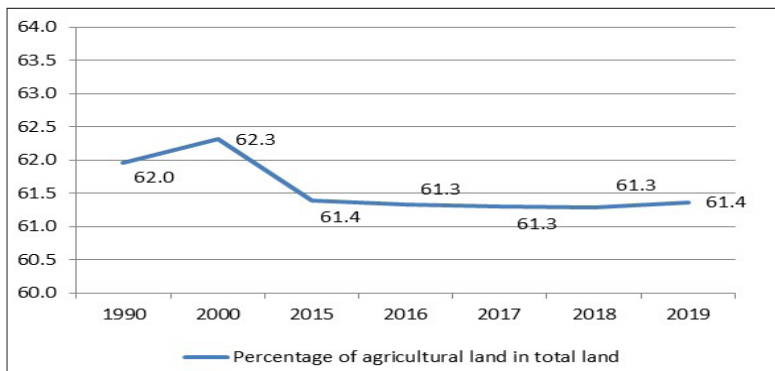
Table 3. Total land area in Romania by agricultural use
(thousands of hectares)

	1990	2000	2015	2016	2017	2018	2019
Total land area	23839,1	23839,1	23839,1	23839,1	23839,1	23839,1	23839,1
Area used for agricultural purposes	14769,1	14856,8	14634,4	14621,4	14615,1	14611,9	14630,1

Source: TEMPO online base, <http://statistici.insse.ro:8077/tempo-online>

Regarding the evolution of the share of land for agricultural use in the total land area (Figure 4), we find that it evolved from 62% in 1990, increased to 62.3% in 2000, after which decreased until 2015. After 2015 we are witnessing a situation of this share around 61.3 - 61.4%, agricultural destination of the areas, as a percentage of the total land area.

Figure 4. Evolution of the share of land for agricultural use in total land area

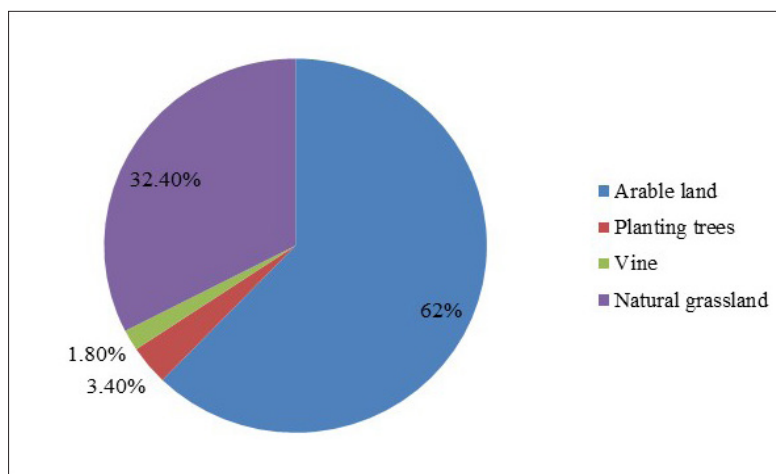


Source: Own calculations based on TEMPO database data online, <http://statistici.insse.ro:8077/tempo-online>

Regarding the destination of these agricultural lands, by main crops (as a percentage of the total agricultural area - Figure 5), we have the following existing structure at the level of 2019:

- 9365 thousand hectares are represented by arable lands, these representing approximately 62% of the surface of the lands with agricultural destination of the country (14811 thousand ha);
- 501 thousand hectares are represented by tree plantations, these representing approximately 3.4% of the surface of the lands with agricultural destination of the country;
- 265 thousand hectares are represented by vineyards, these representing approximately 1.8% of the surface of the lands with agricultural destination of the country;
- 4945 thousand hectares are represented by natural meadows, these representing approximately 32.4% of the surface of the lands with agricultural destination of the country.

Figure 5. Agricultural land use structure



Source: Own calculations according to the Statistical Yearbook of Romania 2020

– Vegetable production

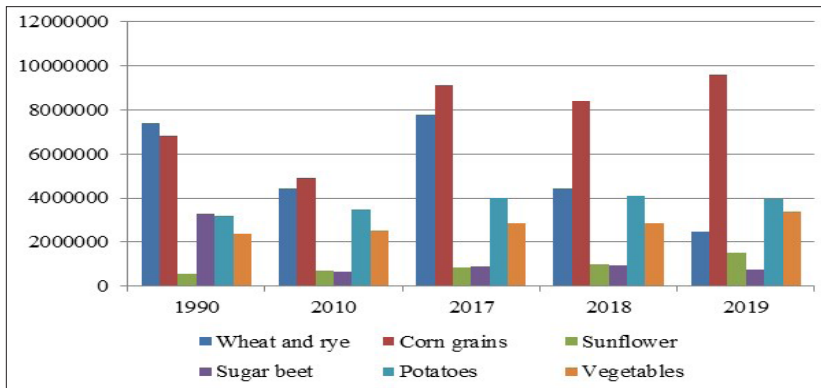
Analysing the evolution of vegetable production by main crop categories (Figure 6), we find that the highest vegetable production obtained in Romania is the production of corn grains. The production of grain maize, after a decrease registered between 1990 and 2010, had spectacular increases, so that in 2019, with a production of approximately 98,000,000 tons, it exceeded by approximately 66% the level of production registered in 1990.

On the other hand, wheat and rye crops, which had a higher production than corn grains, recorded massive decreases after 2018, although in the period 2010-2017 these crops also recorded increases in production in 2017, the level of production being higher than in 1990.

A crop that has experienced massive declines is sugar beet, after 2010 the crop stabilized at a production of about 900,000 tons per year (in 1990 the production of this crop was over 3,000,000 tons per year).

The production that registered permanent increases after 1990, is represented by the vegetable crop, a crop that came to deliver annually about 3,800,000 tons in 2019 (compared to 2,100,000 tons in 1990).

Figure 6. Evolution of crop production by main vegetable production categories



Source: TEMPO online base, <http://statistici.insse.ro:8077/tempo-online>

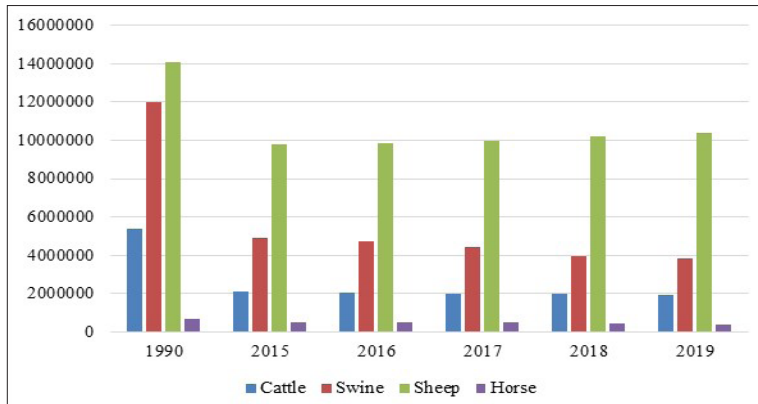
– Animal production structure

Comparing the number of animals with that existing in 1990 (Figure 7 and Figure 8) finds that in 2019 it was considerably lower in all animals. The biggest discounts were:

- for cattle with 48%
- for birds with 44%,
- for pigs with 36%
- for sheep with 27%.

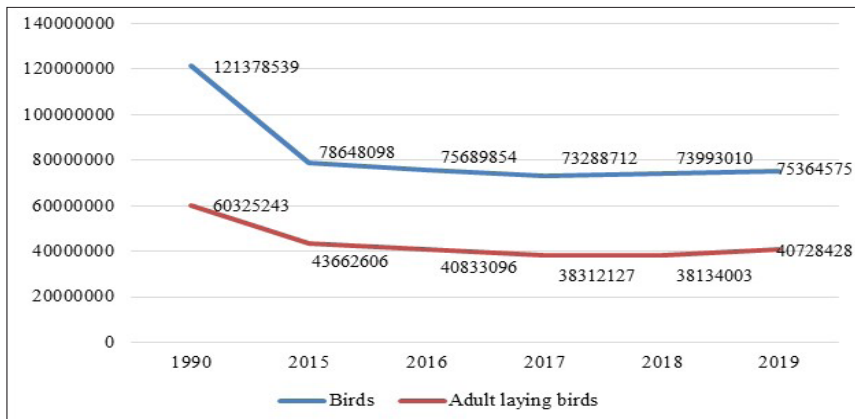
It is found that after 2015, the number of animals in the 4 categories remained approximately constant until 2019.

Figure 7. Livestock, by animal categories



Source: TEMPO online base, <http://statistici.insse.ro:8077/tempo-online>

Figure 8. Evolution of the number of birds by total and by categories



Source: TEMPO online base, <http://statistici.insse.ro:8077/tempo-online>

4. The Potential Offered by the Production in Rural Environment in Romania

Products made in rural areas are the basis of the food industry. This industry produces the food needs of a country as well as a number of foodstuffs and not only that go for export. The most representative industries that are supported by rural production are:

- Meat industry
- Dairy industry

- Milling industry
- Oil industry
- Sugar industry
- Wine industry
- Vegetable and fruit industry
- Fish farming and aquaculture

Many of the industries listed above are based in rural areas, exploiting the products of their place of production, while others are located in cities. Over 90% of these industries have private capital, so we can say that the rural environment, with the products obtained here, have led to the development of a very large number of companies that exploit these products.

I can say that there is still a market segment that is not yet fully exploited, there is still plant and animal production that is being discarded due to the lack of storage and processing capacity. Private initiative is certainly taking place in these areas. Moreover, all kinds of programs and projects are offered for the development of rural areas and disadvantaged areas, projects that can be accessed by investors in these areas. So, the rural environment can continue to offer alternative activities for interested investors.

– Rural tourism

Another sector that offers alternative activities in this environment is rural tourism. Our country has beautiful areas, not yet exposed to their real capacity, and rural tourism can help exploit this potential. After 2010, the evolution of the number of accommodation places in tourist units in total and in agritourism pensions registered significant increases. If in 2010 the share of places in these accommodation units was 6.5%, in 2019 this share reached 13.8%, that is a doubling of places.

Our country has a vast tourist potential, still untapped to its full capacity, and rural tourism is attracting more and more attraction, both for tourists from Romania and for tourists from abroad, who are attracted by the culture and ancient customs.

Following the pandemic that made us radically change our habits and destinations, the small rural tourist boarding houses, located far from the big urban agglomerations, have become more and more sought after by both our tourists and tourists from our country. abroad.

5. Conclusions

The important structural changes and the essential mutations that have taken place in the last decades in Romania, have profoundly affected the state of the Romanian countryside. Over time, there have been many changes in the

countryside, which has led to a profound transformation of the traditional image of the countryside. In response to two phenomena, urbanization and industrialization, nineteenth-century Europe underwent a change of direction, in the sense that interest in rural areas began to grow, with rural potential beginning to be exploited.

The countries of Eastern Europe have experienced a slightly atypical evolution in terms of the urbanization process. The communist regime and the historical heritage are two important factors that contributed to the shaping of the urban space. Central and Eastern Europe was a peripheral area, where the urbanization process was characterized by significant stagnation (Neamțu, 2012). In this context, the case of Romania is a particular one, the urbanization process started before the transition period, but nevertheless, the effects were not as visible as in Hungary or Poland. The conditions in which the Eastern European countries were in the 1990s forced the operation of some changes, the rural regeneration being urgently needed (Holland, Burian and Dixey, 2003) as a solution to problems such as: industrialization process, falling markets, weak agricultural sector high performance, low standard of living. In addition, rural areas have experienced high unemployment rates amid large-scale privatization of agricultural cooperatives and the possibility of migrating to urban centres.

All these changes have had an impact on rural areas, which are severely depopulated. In the same vein, Sandu (2011) stated that during the transition period, agriculture played a key role, acting as an “occupational buffer” against the socio-economic effects of the transition, but this role condemned the rural to stagnation, low performance, thus contributing to the thickening of rural poverty. In this context, a vicious circle was created, subsistence generating poverty, poverty which in turn perpetuates subsistence, which is why this vicious circle must be broken.

For a long time, rural development policies focused exclusively on measures to improve agricultural practices, considering that the countryside was seen only as a favourable place for farming. The enlargement of the European Union has changed the map of rural areas, so the approach needs to be diversified. Rural areas cover 90% of the entire area of the European Union, 60% of the total population living in rural areas (Dorobanțu and Nistoreanu, 2012). According to the OECD (2007), rural area accounts for about 87% of the country’s total area, while 45% of the total population lives in rural areas, double the European average. In 2011, Romania recorded one of the lowest urbanization rates in Europe (Mursa and Paraschiv, 2013). On the other hand, the least developed regions are extremely ruralized - 6 of the 15 poorest regions in Europe are regions in Romania, given that Romania is divided into 8 regions, 6 of which are among the poorest regions of the EU.

For a long time, agriculture played a key role in the development of rural areas. However, it was not enough, “agriculture is no longer the backbone of rural economies” (OECD, 2020). Rural development involves more than just the development of the agricultural sector. Measures taken to develop the rural sector have so far focused on supporting agricultural farms, but despite the subsidies granted, these policies have failed to significantly improve the fate of the rural environment. Under these conditions, new measures are needed to restore the countryside, with an emphasis on local specifics, and not on sectors of activity, investments that will take the place of subsidies. Rural tourism seems to be a viable alternative (Bogan, 2012), in recent decades, policies promoted at European level in terms of regional development, together with Member States’ national policies, have encouraged positive social implications.

Regarding the proposals identified after the analysis:

- there is still a market segment still untapped to its full capacity, there is still plant and animal production that is discarded due to the lack of storage and processing capacities. Private initiative is certainly taking place in these areas. Moreover, all kinds of programs and projects are offered for the development of rural areas and disadvantaged areas, projects that can be accessed by investors in these areas. So, the rural environment can continue to offer alternative activities for interested investors.

- Our country has a vast tourist potential, still untapped to its full capacity, and rural tourism is attracting more and more attraction, both for tourists from Romania and for tourists from abroad, who are attracted by the culture and ancient customs. Following the pandemic that made us radically change our habits and destinations, the small rural tourist boarding houses, located far from the big urban agglomerations, have become more and more sought after both by the tourists from our country and by the tourists from abroad.

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DOI: 10.5281/zenodo.6392188

PARTICULARITIES OF THE FINANCIAL ACCOUNTING ACTIVITY IN ECONOMIC ORGANIZATIONS

Ion CROITORU, PhD Associate Professor

Athenaeum University, Bucharest, Romania

ion.croitoru.ag@gmail.com

VIORICA NEACȘU (BURCEA), PHD Candidate

Valahia University of Targoviste, Romania

viorica.burcea@yahoo.com

Silvia MINCIUNĂ, PhD Candidate

Valahia University of Targoviste, Romania

silviaminciuna@yahoo.com

Abstract: *Financial-accounting activity is the instrument within an organization that seeks economic, financial, and asset management. It is important because of the information it manages, information that is at the disposal of the management helps shape the management strategy, policies and decisions. In this respect, an organization's transactions and economic operations are subject to registration in the financial-accounting activity, in compliance with certain accounting principles, rules, and rules. The financial and accounting activity provides information to the management on the implementation of the revenue and expenditure budget, the patrimony under management, the patrimonial outcome, the cost of the programs approved by the budget, as well as information on the annual general execution budget of the organization's budget. The organization of financial and accounting activity is mandatory for all organizations and its implementation involves recording all the economic operations carried out by an organization using the accounts provided for in the General Accounting Plan, which is in line with international accounting standards and the European accounting system.*

Keywords: *financial-accounting activity, financial accounting, management accounting, financial-accounting methods, economic organization, economic operations, accounting principles, transactions, financial statements*

JEL Classification: *M4,M41, M42*

The role of financial and accounting activity

The main objective of the financial-accounting activity is to track revenue generation and how to use it, ensure efficient management and security of the patrimony of the organization, highlight the results of the activity carried out and prepare financial statements or other financial reports. At the same time, the financial-accounting activity provides the resources to finance the programs, projects and activities necessary to achieve the established objectives.

In fulfilling its role, the financial-accounting activity must be neutral and organized distinctly within the organization at an appropriate decision-making level to respond objectively to all stakeholders concerned with the operation and performance of the organization.

Financial-accounting activity is a complex system of collecting, grouping, processing, recording, generating accounting and financial reporting elements, and liaising with decision-makers or different users. Thus, the main activities are:

a) collecting information on the economic operations carried out by the entity - is done by drawing up the primary documents at the time of the transaction or after it;

b) processing and recording of the information on the economic operations carried out - it is done by evaluating and knowing the accounting elements, recording the transactions and transactions in the accounting accounts and filling in the accounting registers;

c) summary of the information - it involves the inventory of the accounting elements, the drawing up of the verification balance and of the accounting registers;

d) financial reporting - requires the preparation of financial reports.

The responsibility for the organization and functioning of the financial and accounting activity rests with the head of the organization, and the organizational structure brings together two categories of staff, namely:

a) *manages*, ensures the management processes and is responsible for ensuring the organization and performance of the inventory of the patrimonial items, the observance of the rules regarding the drawing up of the financial statements, the keeping of the supporting documents, the registers and the financial statements, as well as the organization of the management accounting;

b) *execution*, which ensures the registration of operations and transactions, completing the accounting registers, elaborating the synthetic and analytical statements, as well as the final financial results.

According to the opinion of the specialists in the field of financial-accounting activity, they include:

- a) revenue accounting and expenditure accounting;
- b) Treasury accounting, which ensures the operations of receipts and payments, in accordance with the legal provisions in force;
- c) general accounting that reflects the financial and patrimonial situation as well as the surplus or patrimonial deficit;
- d) accounting for the cost of approved programs.

The organization and conduct of the financial-accounting activity implies the observance of predetermined principles and rules or methods, such as:

- a) use of models of common accounting records and forms;
- b) use of balance sheet models and general account plan;
- c) compliance with established rules and methods;
- d) the chronological and systematic recording of the collections and payments operations, simultaneously in the debit of some accounts and the credit of others;
- e) determining the total debtor amounts and crediting amounts, as well as the final balance of each account;
- f) presentation of the execution of receipts and payments made as well as of surplus / deficit.

The financial-accounting activity is divided into two components:

Financial Accounting - performs the functions attributed to general accounting, is based on norms and has the purpose of recording economic transactions and transactions, elaborates the periodical and annual financial statements, financial position and financial results. Economic and financial operations are recorded in accordance with the applicable accounting regulations, so that users can be confident and confident of their fairness. Provides information to both internal users and external users.

Management Accounting - aims at internal organization management, calculation of costs, establishment of results and profitability of services and works, activity budgeting, tracking and controlling them in order to know the results and providing the necessary information in the decision making process. It responds to the needs of internal users in terms of planning, controlling and evaluating the activities and services provided by the public entity, and provides the necessary information for the different levels of management hierarchy for the purpose of making decisions.

Depending on the objective to be achieved, management accounts can be organized into several sub-accounts, namely: cost accounting, forecasted accounting or accountability centers accounting.

Management accounting refers to production activity, knowledge of which is useful in decision-making, and is an important source of information for the management of the organization in the decision-making process. The information provided by managerial accounting allows the establishment

of a certain line in economic policy as well as the choice of appropriate development programs.

Therefore, financial accounting provides information on the work of the organization in the past, while management accounting calculates and analyzes the value of internal flows and provides information on which management decisions can be based.

Instrument for financial and accounting activity

The persons responsible for the financial and accounting activity ensure the systematic and chronological organization and accounting of the accounting, according to the law, and carry out annually the inventory of assets and liabilities.

Taking into account the internal and external environmental factors of an organization, the financial-accounting activity is influenced by:

a) the strategic objectives of the organization and how it has identified and provided the resources needed to achieve it;

b) the organizational structure, respectively the structure and dimensioning of the financial-accounting department, as well as the procedures and instruments used to ensure the accomplishment of the financial-accounting activity;

c) the management style through which the financial-accounting activity and representation relations with the other functional structures or third parties are ensured;

d) the quality of the staff within the financial-accounting department, respectively knowledge and skills;

e) stability of the applicable legislative and methodological framework, culture and organizational mentality;

f) the economic situation of the organization and the availability of resources.

Taking into account the fact that, according to the regulations in force, the economic organization has the responsibility to organize and manage its own accounting, it must ensure the chronological and systematic registration of the information, the processing and keeping the information regarding the patrimonial situation and the results obtained, the control patrimonial operations and processing processes used, the accuracy of the accounting data provided, and the provision of information necessary to implement the budget.

The organization records in its supporting documents, manually or using the computer systems, the economic and financial operations at the time they are made, and makes entries in logs, files or the balance of verification, according to established rules. Verification balance is the accounting document used to verify the accuracy of accounting records and to check the consistency between synthetic and analytical accounting.

The instrument of the organization for the performance of its functions and attributions, related to the allocation of resources, redistribution of income and ensuring economic and social stability, is the income and expenditure budget. Through it, the organization provides annually the size and structure of earnings receivable and the expenses to be incurred, the financial flows that form the income and the financial flows that flow from the management of these resources.

The financial statement, which includes: the balance sheet, the balance sheet, the cash flow statement, the statement of changes in the assets / capital structure and the appendices to the financial statements. The financial statements give a clear picture of the assets, liabilities, financial position, and financial performance and profit or loss.

The economic operations performed by the organization to be recorded in the accounts must be recorded in supporting documents, prepared and approved under the law. These documents are important for the financial-accounting activity because:

- a) provide information on the activity (quantitative and qualitative);
- b) use management to substantiate current decisions;
- c) they are the basis of the records in the operative records of the organization and are drawn up by authorized, accountable persons;
- d) have legal value, justifies the right of ownership, the economic activity carried out, as well as the relations between the organization and other entities or third parties;
- e) constitute evidence in litigation cases;
- f) are recorded and processed both in the primary and accounting records and in the synthetic records;
- g) are used in the financial control and controlling activity to verify the legality of the economic activity performed and its efficiency;
- h) records the carrying out of the economic and financial operations, is the basis of the accounting records, undertakes the responsibility of the persons who have drawn up, endorsed and approved them, as well as those who have recorded them in the accounting.

Used individually are of a limited nature, but centralized and processed increase their informative value;

The financial and accounting activity provides information to the authorizing officers on the implementation of the revenue and expenditure budget, the patrimony under management and the annual general execution account. In this respect, the management of the organization must develop accounting policies for accounting recognition of transactions conducted in strict accordance with accounting regulations and accounting policies for the operations carried out, in accordance with the specifics of the organization.

Principles observed in financial-accounting

The financial and accounting activity is responsible for the presentation of the patrimony and patrimony operations, namely: bookkeeping, calculation, analysis and control of movable and immovable assets denominated in the monetary standard; ensuring the control of the patrimonial operations and the processing procedures used, as well as the accuracy of the accounting data provided.

The financial and accounting activity provides a true and fair view of the entity's statement of income and expense and of the information it provides, in compliance with the accounting principles, namely:

- *prudence*, which is reflected in the correct assessment and registration of rights and obligations, and does not allow for the understatement of revenue and the overstatement of expenditure, both in the budgeting process and in the execution process;

- *the permanence of methods* to ensure the continuity of rules and rules on the assessment of patrimonial items, ensuring the comparability over time of information on the structure of budgets;

- *the independence of the exercise*, which ensures that, during the year, all revenue and expenditure relating to the current financial year is taken into account for the purpose of determining the result and no revenue is recorded and expenditure incurred in other years;

- *non-payment*, which ensures that no direct payments can be made from the receipts, all revenues are recorded in the budget and there is an approval for any expenditure;

- *intangibility*, according to which the revenues for the current year, but received in the next year, shall be registered as income in the year in which they were collected;

- *the separate valuation of asset and liability items*, which requires a separate determination of the value of each individual asset or liability item, irrespective of its economic content, the foreseeable evolution of the market and the consequences of that assessment;

- *economic prevalence over the legal*, which states that the information presented must reflect the economic reality of the operations performed;

In view of the above, we believe that the role of financial and accounting activity is to correctly reflect the process of executing the revenue and expenditure budget, to provide operative and realistic information about the entity's economic condition, correct and complete budgeting and to prevent the phenomena of error and fraud. Financial-accounting activity has the role of knowing, measuring, evaluating, managing and controlling assets, rights, obligations, capital and results.

Organizational decision-makers are concerned about finding solutions to supplement the financial resources of the budget in order to guarantee the achievement of objectives and, implicitly, their associated activities. The management of the financial-accounting department monitors and evaluates the performance of operations and activities specific to financial and accounting activities.

The scope of financial-accounting activity includes the existence of material and monetary means, the movement and transformation of these means into economic operations and processes, and the establishment of the final result in value expression of movements and transformations.

From an economic point of view, the financial and accounting activity reflects the existence, condition and transformation of capital, following the use of specific processes and instruments. This is reflected in the acquisition, acquisition, allocation, use, consumption or replacement of goods.

Consequently, it is noted that financial-accounting activity is important because it reflects patrimonial operations and provides information on the entity's economic condition, information that is used by a number of users, depending on their interests.

Conclusions

Financial-accounting activity as part of accounting is mandatory to be organized by all organizations and must ensure that all operations relating to public funds, patrimonial entries and outflows, as well as other operations related to the activity carried out, are recorded.

The object of the financial and accounting activity is, on the one hand, the patrimony of the organization, with the rights and obligations arising from the activity carried out, and on the other hand, the revenue received and the expenses incurred, the results of the activity carried out and the final financial statements.

The particularities of the financial-accounting activity can be delimited as follows:

- a) accounting is organized and conducted in the double game;
- b) the recording of operations and transactions is done chronologically and systematically in accounting;
- c) the amounts resulting from the economic operations carried out are totalized and recorded in the debit and credit of certain accounts, according to certain pre-established rules and procedures;
- d) usually, on a monthly basis, drawing up the verification balance, which reflects the equality between the total debtor amounts and the creditor or the total debtor and creditor balances of the accounts;

e) presentation of the final monthly, quarterly, annual, as the case may be, of the receipts and payments made as well as of the surplus or deficit.

f) the use of models of accounting registers and common forms of financial and accounting activity.

In our opinion, the financial and accounting activity carried out in the economic organizations aims to ensure the integrity of the patrimony, as well as to prevent loss, degradation or fraud.

On the basis of the above it can be concluded that the financial-accounting activity of the economic organizations resembles in many respects the financial-accounting activity carried out within the public entities, resemblance determined mainly by the rules and principles of the general accounting, but there are also determined differences between them the specific nature of the organization and the function of the public entities in terms of establishing and highlighting revenue and expenditure, but especially how the financial year is closed.

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ISSN 2065 - 8168 (print)
ISSN 2068 - 2077 (online)