



FACULTY OF FINANCE - ACCOUNTING

**THE JOURNAL
CONTEMPORARY ECONOMY**

Volume 3, Issue 3/2018

**REVISTA ECONOMIA
CONTEMPORANĂ**

Vol. 3, Nr. 3/2018

**”Independența Economică” Publishing
2018**

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Pitești, Calea Bascovului no. 2A, Argeș County, Romania
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The Journal is currently indexing in the following international databases:
EconPapers (RePEc), IDEAS, BASE, SCPIO, OAJI, ResearchBib,
CEEOL (Central and Eastern European Online Library).

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ISSN 2537 – 4222
ISSN–L 2537 – 4222

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ON THE LOGIC OF CORRUPTION GENERATING

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Abstract: *The paper aims to examine, from a logical point of view, the corruption phenomenon, under certain perspectives: its definition, the criteria to classify it, the main classes of corruption, the mechanism of its arising, and the basic impact of different classes of such a phenomenon. In this context, five classes of corruption are identified and characterized, putting into evidence the „emergence area” of corruption phenomenon. One of the significant issue of the paper addresses the costs involved by the corruption phenomenon – in this view, the paper approaches, however, the accountable costs only. Finally, some directions to block, on short term, such a phenomenon are indicated.*

Key words: *corruption, corruption typology, corruption costs, corruption generating.*

JEL Classification: *D73, D86, G28.*

1. Introduction

The term corruption is immanent to the market economy and democratic society. The explanation is very simple: the democratic society (and its economic expression, the functional market economy, respectively) is structured and operates on the basis of predefined and transparent rules. The majority behavior of the members of society is to adhere to those rules. Obtaining a legal advantage outside of the rules of the game is not possible, therefore there is always the temptation to violate these rules in order to benefit from an additional, undeserved advantage (according to the precepts of social justice) and unwarranted (according to the precepts of social justice). This temptation has its headquarters in human nature (it is based on free rider behavior, which seems to be constitutive of human nature, although, obviously, the role of the cultural matrix in this matter must not be underestimated). This is the fundamental reason for which the rule of conduct (of any kind, including economic behavior) has as its inalienable component the sanction for the possible violation of the rule. And this is the fundamental reason why the claims (and political declarations) on the eradication of corruption must be viewed with caution, and those actions (and political statements) that relate to the intention of intelligent management (keeping under control) and the maximum limitation of that phenomenon. The implications of corruption are extremely complex (and they are not, note bene, totally and permanently negative), but for the moment, we are interested in discussing its costs.

First of all, to say that, in our opinion, corruption is *the social phenomenon in which a civil servant¹ uses his/her social position to claim/gain an advantage of any kind, undeserved and unjust, in exchange for exercising/not exercising a role for which is paid.* Although, by extension, the concept of corruption can be (and is) also used in situations where public money is not involved, for now we prefer to restrict the discussion to this social section. However, some comments on the state of non-involvement of public money in the phenomenon of corruption deserve to be retained.

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¹ Since the name of a civil servant is a term of legal jargon, it would be more appropriate to talk about state employees, i.e. about those individuals working in the public sector (called civil servants) and about those individuals working in the private domain of the state (and representing contract staff).

(a) by public money we understand the monetary value of State-owned assets (that is, the public and the private sector of the state¹) as well as the monetary value of the legal obligations of citizens to public budgets (for example, the income tax which the private persons due to the public budgets, or the corporate tax on profit which the economic organizations due to the same public budgets, etc.);

(b) all that is not a public money is a private money (eg net salary, bank deposit of private persons, dividends received by private individuals after tax, etc.);

(c) the phenomenon of corruption implies the fulfillment of at least one of the following two conditions: 1) an employee within a state/government organization (either civil servant or contract staff); 2) public money should be involved in the phenomenon in question;

(d) situations that do not check lit. (c) does not generate corruption phenomena, but other phenomena of non-compliance with legal norm, which do not concern us in this paper (bribery, deception, commission, etc.).

Figure no. 1 shows a view of the abstract mechanism of generating the phenomenon of corruption.

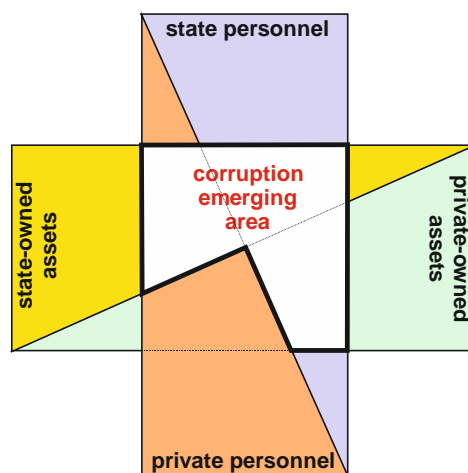


Figure no. 1. The abstract topology of the corruption emerging area

A simple logical formalization of corruption is as follows:

$C = (A_{pr} \wedge P_s) \vee (A_s \wedge P_{pr}) \vee (A_s \wedge P_s)$, where: C is the corruption phenomenon, A_{pr} is private assets, A_s is state assets, P_{pr} is staff of private persons, P_s is staff of state (or public) persons.

2. A typology of corruption

In order to obtain a typology of corruption, we will organize the analysis according to the phenomena likely to occur, within the corruption generation area identified in Figure 1, in relation to the attitude, respectively the actions (or inactions) of the staff employed in the state organization/institution. A schematic diagram for this is shown in Figure 2. The diagram operationalises three criteria simultaneously, each in two hypostases: positive and negative (the negative hypostasis is obtained by logical negation of the positive hypostasis):

¹ The state's private domain is represented by state-owned assets that are involved in the production of goods and services delivered to the consumer through the market (as opposed to public goods belonging to the public sector and delivered to the consumer out of the market, i.e. free of price).

- the nature of the norm in place: the obligation to do, or the interdiction to do;
- the attitude (behavior) of the staff committed to the state: execute (do), respectively not execute (abstain);
- the economic significance of the phenomenon produced: implicit tax or implicit fee.

The three criteria, each of which in the two hypostases, can be placed in a Karnaugh-type representation (Figure no. 2), so each cell in the chart checks the three criteria concomitantly, but only in one of their specific hypostases.

Such a chart functions like a Mendeleev-type table, in that it logically exhausts the possibilities of corruption, even if, in the economic reality, a certain possibility is not actual.

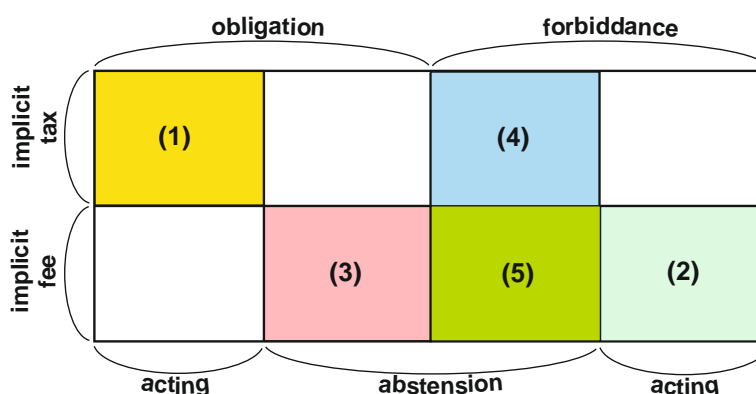


Figure no. 2. The logical scheme to infer the typology of corruption

We therefore have five classes of corruption, two of which are based on the obligation to do, and three are based on the prohibition to do, two of which have the economic significance of a tax (here called default or implicit tax) and three that have the meaning of a default or implicit charge (here named implicit fee¹).

- (1) *The case of the provision of a service that the state staff has the obligation to provide.* If the civil servant claims (and receives) an advantage of any kind in order to perform a service to which he is bound by his duties to perform, this advantage is a unilateral transfer (without equivalent in actual service provision), so it has the economic content of a default/**implicit tax**. Indeed, the state staff is obliged (and paid, even by the applicant in question, through the explicit, official tax he pays to the state budget) to provide a service. He will provide this service, but he will claim an additional advantage. Since, for that additional advantage, it does not provide a distinct service, it is apparent that the advantage in question gains the content of a sui-generis tax. For example, the issuance of any certificate, to which the applicant is legally entitled.
- (2) *The case of providing a service that the state staff is not obliged to provide.* If the state staff claims (and receives) an advantage of any kind in order to perform a service to which they are not bound by its duties, this situation is somewhat bizarre in the context of the discussion here since it means that state personnel uses its position (or infrastructure to which it has access through its position, etc.) in order to obtain benefits, in return for which it offers a counter-service. From

¹ The tax and fee concepts are the following: a) tax: ineligible binding legal levy which the state realizes against the citizen, without providing direct and immediate counter-benefit; b) fee: the statutory mandatory levy that the state makes to the citizen, with direct and immediate counter-benefit.)

the point of view of the applicant for that service, the advantage procured to state personnel equates, economically, with an *implicit fee*. From the perspective of the state personnel, this is at least a breach of service duties (or, perhaps, abuse of service or the use of state patrimony for personal purposes). It is, however, questionable whether the described situation can be categorized as corruption. Indeed, part of the definition of corruption is found: the exploitation of public position in personal interest, but another part - that is, the provision of a service to which it was bound - is no longer found. We consider, however, that the situation discussed here should also be described as a corruption situation on the following grounds: a) if the state staff in question did not have a public office, it would no longer be a target for the one who requires him to provide a service (to which public-sector staff are not obliged, but which he can perform only by virtue of the civil service occupied: for example, he makes a recommendation - which means, in legal terms, influence); b) even if he/she provides a service, in exchange for the remuneration received from the applicant, that service can be provided only by using the public patrimony (either as a corporeal asset or as an image), therefore it can be presumed that there is a loss of public asset, generated by the provision of a service for personal benefit.

- (3) *The case of non-execution of an action by state personnel bound to exercise it.* It is a species of the previous case (of point (2)), since the refusal to exercise an action to which it is bound, abstaining in favour of an applicant who, in exchange for that abstention, procures the public servant an advantage, is logically equivalent to the provision of a service which he was not obliged to (abstention to perform an obligation is not mandatory). Therefore, this time, too, we are faced with an *implicit fee* in terms of economic content. For example, a lawyer in a public institution does not exercise, in due time, an appeal to the court.
- (4) *The case of non-performing of a prohibited activity by state personnel.* We consider that the costs associated with this case fall within the *implicit tax* category, for the following reasons: a) by law, mandatory service provision by state personnel means here to refrain from doing, therefore it is a supply of a service to which state personnel is bound; (b) since state staff receives an advantage in order to refrain from pursuing an action for which it is paid (by the state) not to perform it, it results that the official receives an undue and unjustifiable advantage in order to do what is already bound and paid to do.
- (5) *The case of performing of a prohibited activity by the state personnel.* We consider that the costs associated with this case fall within the category of the *implicit fee*, for the following reason: the applicant for the service of a forbidden action is therefore entitled to a service he is not entitled to, in exchange for the undeserved and unjustified advantage of the state personnel; the civil servant secures a service in return for the benefit received (whether or not the amount of that service is equal to the amount of benefit received).

3. About the Costs of Corruption

Corruption involves a whole range of costs (both for its existence and its „eradication"). The least important (short-term and impact-related) are accounting costs. That is, those explicit costs that accompany the casual manifestation of the phenomenon of corruption. We will continue to say a few words about this type of cost of corruption. The accounting cost of corruption is, of course, the cost of corrupting state personnel, that is, the advantage that the applicant for a service (to whom he or she is entitled or not entitled) will procure to state personnel to provide him with a service to which he was,

however, entitled to perform or to provide him with a service which the official was forbidden to perform, or for the official to refrain from performing a function which he was required to exercise.

In all these categories of accounting costs (as we have seen, they are economically impact on the fiscality), the cost to the public budget is added to the fact that corrupt civil servants do not declare the extra income obtained undeservdly and unjustifiably as a result of corruption and, therefore, do not pay tax on the total income of these revenues (North, 1990). The question is whether this loss is absolute or relative. Clearly, the loss suffered by the budget is a relative one because the taxes on the amounts procured as an undeserved and unjustifiable advantage to corrupt civil servants were once paid by those who directly bear the accounting cost of corruption (in the idea that the respective earnings are earned in a way but even if these incomes are themselves the result of corruption, one can assume that somewhere at the end of the „chain” somebody paid taxes for them.) However, it is very interesting to discuss here a monetary multiplier of corruption, which is manifested by an implicit increase of taxation (through the additional taxes and fees paid by the applicants, as we have shown, for the corruption of the staff of the state). This conclusion is particularly true in the long run, as there will be a temptation of those who want to bear the cost of corruption (those who offer the advantage to the corrupt state personnel) to obtain the necessary monetary amounts by occult ways (either from the underground economy, or based on an internal chain of corruption - lower links of state staff, etc.), which will increase the number of links that obtain undeclared income, thus untaxed.

The implicit fiscal effect of corruption is of a seriousness that can not, in any case, be overestimated. Additional fiscal pressure changes consumer, savings, and investment behaviors, alters even tax compliance or social compliance behaviors, alters the playful spirit in the economy, with extremely damaging effects on the normative coherence of the behavior of members of society.

Limiting corruption (through the drastic limitation of corruptibility causes and, especially in the short term, by blocking mechanisms which objectifies the corruption) is, for all these reasons, a definite (unconditional) public requirement (Bryson, 2010).

4. Is there „added value” in the corruption phenomenon?

This issue goes beyond the objectives of the present intervention, but a short answer must undoubtedly be affirmative. As any behavioral deviation in the economic field (and perhaps not only in the economic field), in certain „doses”, in certain areas, and at certain times or periods, the phenomenon of corruption can unlock economic mechanisms or processes that would otherwise remain impediments (for example, inflation, and unemployment, and the underground economy, and the parallel exchange rate, have some beneficial short-term functions at local level and below a certain degree of intensity). This issue should be considered in good faith, without false taboos and, of course, from a scientific perspective. As I said, we reserve this examined for a future opportunity.

5. Can the phenomenon of corruption be blocked?

It has been rightly said that in corruption, as in love, two are needed. Therefore, a strategy of blocking the phenomenon of corruption should be done at both ends: the one who corrupts (or does a corruption attempt), respectively the one that is permeable to corruption (accepts the advantage of accepting corrupt behavior). Of course, in the long run, the solution lies in the educational process and in raising the standard of living on society as a whole, that is to say, in increasing the social responsibility of the individual through the integration of moral values in the current axiological and praxiological matrix.

The problem, however, is to solve the problem in the short term. We believe that here, the following lines of action could be used:

(a) effective separation of policy-making from their administration – more precisely, the institutional separation of the National Authority for Fiscal Administration (NAFA) from the Ministry of Public Finance (MPF);

(b) developing internal audit capability (both of compliance and of performance) in state organizations, institutions and authorities (both in the public and private sector of the state);

(c) the strict application of the prohibition to work in the system for persons proven to have been subjected to corruption (either as origin or as an agent of the corruption mechanism);

(d) limiting the politicization of the occupation of executive functions in state organizations, institutions and authorities (including the private domain of the state, where it seems the corruption is even stronger and more extensive than in the public sector);

(e) introducing and respecting the impartiality of the person in charge of the position of secretary general of public institutions and authorities, except in the cases provided for by the criminal law.

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1. Bryson, P.J., 2010. *The Economics of Centralism and Local Authority*. New York: Palgrave Macmillan.
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FALSIFIABILITY IN THE PHENOMENON OF SOCIAL JUSTICE

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Abstract: According to the almost general concept, a science has the sole purpose of constructing explanations (understood as objective causal descriptions). But this applies only to the natural sciences, because in the social field there are also subjective causes (called goals or final causes) that are generated by free will, so they are unpredictable. Consequently, the factual falsification required by Popper is not possible. The paper aims to examine this impossibility in a conceptual, methodological and instrumental way in order to identify an alternative that would save the testability in the social field. The „social object” used for this analysis is the phenomenon of social justice. In order to elucidate the proposed subject, social justice will be researched both from an institutional, formal and cultural perspective, which implies taking into account the axiological matrix of society.

Key words: social justice, procedural testing, factual testing.

JEL Clasification: A14, B40, O10.

1. Popperian theory of falsification

1.1. The verifiability

The empirical test of the propositions proposed by the Vienna Circle (logical positivism or logical empiricism), that is the verificationism compares, from a semantic point of view, a predictive statement based on a theory/hypothesis about a given fact, with a descriptive statement about that factual, confirming or invalidating the predictive statement. We can formulate the following logical structure:

- T_F^j : the theory j about the class of factials F
- $E_{f_i}^{TF}$: predictive verbal statement about the factual i , where $f_i \in F$, with $i = \overline{1, n_T^F}$, on T_F
- $\bar{E}_{f_i}^{TF}$: descriptive verbal statement about the factual i , where $f_i \in F$, with $i = \overline{1, n_T^F}$

The verifiability process involves verifying all descriptive statements $\bar{E}_{f_i}^{TF}$ (in number of n_T^F) by semantic comparison with the corresponding predictive sentence. If the denoted (referential) of all descriptive statements coincides with the denoted (referential) of the predictive statement, then the predictive statement is believed to be true, and as a consequence, the theory (or hypothesis) on which the predictive statement was issued is true. Figure no. 1 presents the verifiability test procedure for the truth of a statement.

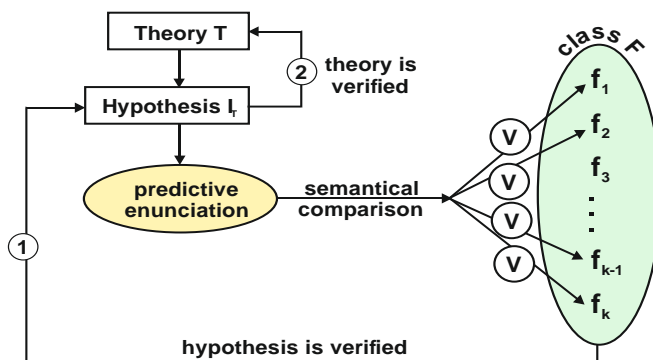


Figure no. 1. Functioning criteria for testing truth verifiability

Source: autor's work

Identified, from a logical-positivist perspective, as a strong empiricist principle (P. Goodfrei-Smith, 2003), the applicability of this verification test (criterion) can be examined from two points of view:

- a) from an ontological point of view verifiability refers to the completeness of the class of factual F . Indeed, verifiability presupposes, by definition, the exhaustion of the class of facts to which the predictive statement refers. However, there may be factuais from the reference class that happened millions of years ago or that will happen millions of years in the future. Both about the past factuais and especially the future factuais, there is no complete and certainly not accurate information. For this reason, there is no certainty on the completeness of the formation (constitution) of the F class. This makes the verifiability undermined in its ontological definition itself;
- b) from a pragmatic point of view the verifiability-refers to the pragmatic possibility of verifying class F of factuais even when the ontological problem has been overcome. If we admit that a theory only concerns future facts and that there is a criterion to ensure the completeness of the class of facts in question then the ontological question of verifiability does not exist. If a finite time horizon is not given (and being relatively short in relation to the life of the individual), then all possible facts cannot be verified, so the theory or hypothesis on which the predictive statement was issued cannot be verified from the perspective of the veracity attribute.

The social presence of cultural subjects capable of free will, the unpredictability of social phenomena are two of the specific elements that lead to the conclusion that verificationism as a method of scientific testing of the true is not acceptable at the level of testing the empirical facts but rather regarding the level of procedural tests.

1.2. The falsifiability

It is a type of empirical test of the statements introduced by Karl Popper (Popper, 1981). As in the case of verification, a predictive statement is compared with a descriptive statement on the same fact in order to get either the rejection of the predictive statement or the non-refutation (i.e. corroboration). The method does not require verification of all the facts in that class so that until a rejection occurs, the theory/hypothesis is considered true, but the truth is not definitive. There is no need for exhaustive testing of the theory/hypothesis (which is not even possible). Karl Popper proposed a test of truth to avoid the two vulnerabilities of verifiability (the ontological problem, respectively the pragmatic problem) (Popper, 2001).

The criterion proposed by K. Popper is called the falsificability criterion and assumes the following logical description:

- T_F^j : the theory j about the class of factuais F
- $E_{f_i}^{T_F}$: predictive verbal statement about the factual i , where $f_i \in F$, with $i = \overline{1, \infty}$, on T_F
- $\bar{E}_{f_i}^{T_F}$: descriptive verbal statement about the factual i , where $f_i \in F$, with $i = \overline{1, \infty}$

The falsification process no longer involves verifying all descriptive statements of the factuais from the factual class taken into account when the predictive statement was issued. This eliminates the need to build the class of fact F that was needed for the verifiability criterion. Also, this criterion no longer requires the exhaustion of the verification of all the facts to which the predictive statement refers (and, as a result, no longer requires the active, methodical search for these facts). Unlike the verifiability criterion, which was an active search criterion, the falsification criterion is a passive, waiting one. Specifically, the predictive statement is considered true since its issuance. Until this statement is invalidated by a factual (actually by a descriptive statement of that factual) of the factual class considered, it continues to be considered true. Any factual (in fact, any descriptive statement about a factual) that does not invalidate the predictive

statement is considered to corroborate it (do not verify it!) so this statement will continue to be considered true. With the first descriptive statement of a factual from the corresponding class of factuais to which the predictive statement refers, which invalidates the predictive class statement, the latter statement is considered false (or falsified in Karl Popper's terminology). In this case, the assumption on which the predictive statement was issued is considered to be false (falsified). Graphically, Figure no. 2 visualises how the falsifiability criterion works in testing the truth.

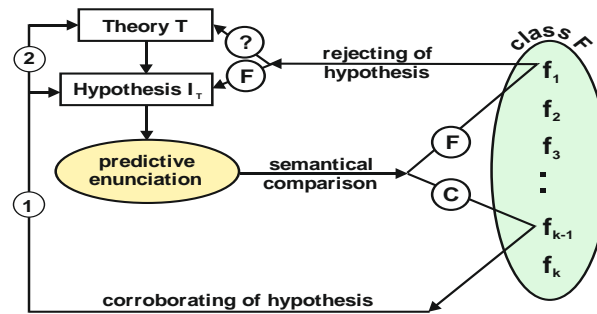


Figure no. 2. Functioning of the falsifiability criterion in testing the truth

Source: autor's work

In conclusion, the method proposed by Karl Popper is applicable in the field of natural sciences where predictions can exist, so we consider the falsificationism to be the only acceptable method of scientific testing of the truth.

1.3. Vulnerabilities of Popper theory in the natural sciences

The first identified vulnerability relates to the fact that in the field of natural sciences there is no certainty about ensuring the conditions of experimentation or observation of the fact in question as they were provided in the scientific theory/hypothesis. Even if the conditions of the scientific theory/hypothesis are complied with in the empirical experiment, we still need a hermeneutics (interpretative theory) to compare the predictive statement with the descriptive one. On this hermeneutics, the members of the scientific community will not easily agree.

The two identified vulnerabilities refer to the fact that there is no certainty about the invariance of the initial conditions, which makes the predictive statement no longer comparable to the descriptive one.

2. Impossibility of Popper falsification in the social field

2.1. Specific research objects of the social field

In the social field we consider that the social object is always an artifact (it does not exist, does not appear, does not disappear and does not change else than only through social action - individual or group), it is always the result of an intention, decision, action) in order to achieve a goal. The phenomenology of the social object is not a completely rational one (inferentially derivable from a rationality model) it is affected by free will (by the lack of calculation). Thus, the social object is an effect of the subject's action.

In the social field, the point of view of some economists (Dinga, 2016), expressed in the literature, about the inefficiency of causal relationship prediction is based on the following arguments:

- 1) the invariable initial conditions cannot be ensured, due to the presence of the subject in the economic process, the subject-object indiscernibility in the economic process appears;

2) the formulation (vagueness) of the concept of truth of economic propositions, the substitution of correspondence veracity with hermeneutical plausibility is not sufficient, we must continue with the notion of acceptability, with building a direct link between causal teleology and evaluation from the axiological point of view of the effect we want to achieve;

3) the existence of multiple causality, multiple effectiveness, which makes the analytical highlighting of causal relationships extremely difficult, lead to the conclusion that they can be recovered in the formulation of the individual prediction (simple cause - simple effect).

2.2. The necessary presence of the subject in the social object

A peculiarity of the social domain is that the social object is not a pure object (like it is the natural field), but it is generated by the subject and the generating subject is a structural component of the social object itself. It can be said that the subject is necessarily present in the social object. Thus, in this area, we should not talk about the social object but about the subject-object package (the SO package).

In the social field, the prediction can only be done in relation to the subject, we can talk about its behavior rather than about the object (the prediction can be about the subject object package. In the social field the subject cannot be separated from the object either from a cognitive perspective or from a praxiological one).

2.3. Confirmability as a principle of falsification in the social field

The criterion of confirmability (or confirmation) has also been proposed, in order to avoid the insurmountable problems raised by the verifiability criterion. Like the verifiability criterion and the falsifiability criterion, confirmability aspires to a factual test rather than to a logical (or grammatical) coherence of the statement in question. In contrast, however, to the two mentioned criteria, confirmability no longer refers to an effective test. In fact, confirmation could be considered as a potential test. The main coordinates of the proposed test of confirmation are as follows:

- testing target is still the *factual*, but *indirectly*, not directly. This refers to the fact that only one thing is "guaranteed" by means of confirmation, namely the ability of testing to produce a test result, whatever it may be;

- testing has a *potential* nature, not an effective one. Consistent with the fact that the test by confirmation does not test the factual but tests, to say so, the testability of the factual, it can be said that this type of testing is a potential one, which can be applied or can be not actually applied as well;

- testing is of a *second degree*. Indeed, by providing information on the possibility of a decisive test (in the sense that it is a test capable of producing a certain, non-ambiguous result), testing by confirmation is, as mentioned above, rather a test of testability.

Figure no. 3 shows the way in which the test of confirmability is applied in testing the truth of a statement.

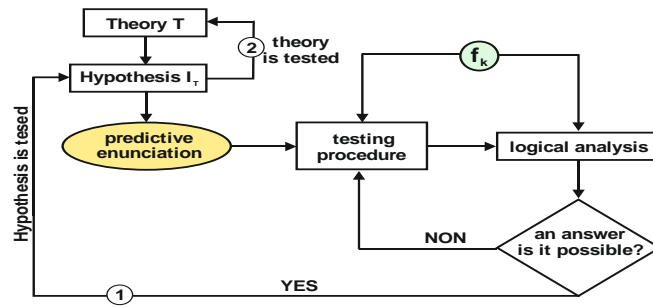


Figure no. 3. The functioning of the test of confirmability in testing the truth

Source: autor's work

The use of confirmation is advisable in cases where the realization of the experimental conditions for direct factual testing through the falsifiability criterion is impossible or liable to uncontrollable deviations from the conditions of the hypothesis (that is, from the conditions required by the predictive statement). The questionableness of direct factual test experiments by falsification makes it possible that in the natural field to disregard the result of an experiment. Even more, therefore, in the social field where the "procurement" of factials through observation, measurement and recording is more difficult and disturbed by many factors outside the control of the experimenter, it is necessary to use such a criterion to test factual truth by a secondary testing, i.e. by testing of testability. So, by applying the confirmability criterion, a non-ambiguous result is obtained with regard of testability itself. In other words, applying this criterion tells us that if we test directly the factual target in the predictive statement, it will certainly be a non-ambiguous result, either of corroboration (in Popper's language) or of invalidation of the prediction, but, of course, does not tell us what the result of direct testing will be. From a logical point of view, a procedural testing based on the confirmability criterion gives a direct response not to the hypothesis tested, but to the possibility of testing that hypothesis, ie. about the possibility of providing a non-ambiguous answer on the testability of the hypothesis.

3. A proposal to save testability in the social field

3.1. The social object in the field of social justice

The concept of social justice refers to a state of society in which two principles of social positioning of individuals are satisfied at the same time:

- a) the principle of *merit*: the adjudication of social values (economic, political, moral, etc.) in proportion to the merit (contribution to the generation and implementation of those values) - described by the positive law;
- b) the principle of *ought*: the adjudication of social values (economic, political, moral, etc.) on the basis of the justification conferred by the quality of human being (described by natural law)

The concept of the subject of social justice refers to the sustainable formation of the mix of the two fundamental principles, the principle of contribution, and the principle of solidarity. The two principles are not contradictory, they can coexist but are necessarily substitutable with respect to the whole, i.e. if the "participation" of a principle increases, the "participation" of the other decreases to the same extent as the "participation" of the first principle, and vice versa.

3.2. The specificity of testability in social justice

Considering the specificity of the social object and, moreover, the specificity of the object of social justice, factual testability is practically impossible (due to the presence of free will, therefore due to the possibility of modifying the "law of movement"). Testability should be of a procedural nature, a procedure having the following characteristics: 1) to ensure the ability to compare the descriptive statement with the normative or prescriptive statement (statement that will refer to what we can call the fairness of the distribution of the economic product); 2) to ensure the non-ambiguity of the comparison results (to be a certainty result). The predictive statement in social justice refers to the mix of the two principles (we propose an abbreviated name for this class of statements, namely MECSUSS statements), in addition, we specify that both prescriptive and descriptive statements are of the MECSUSS type. As a result, only a testability of the confirmability type is feasible.

3.3. A proposal for procedural testing in the social field

The paper proposes a model of procedural testing in the social field, graphically illustrated in Figure no. 4.

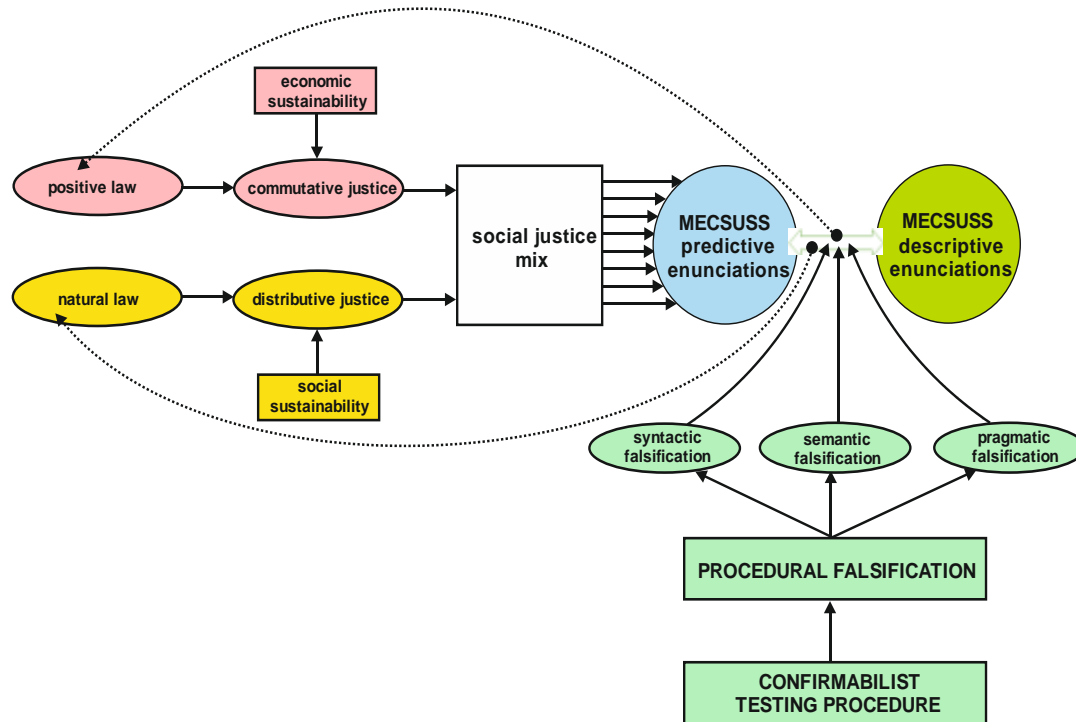


Figure no. 4. The functioning of the test of confirmability in testing the truth in the social field

Source: autor's work

From the analysis of the concepts presented in the paper, at this stage of the research, some conceptual and methodological aspects were developed in order to design a specific testing mechanism for the social domain. The following research of the author will include the presentation, argumentation and evaluation of particular elements of a procedural falsification procedure in the field of social justice.

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CHALLENGES FOR BUSINESS- E-RECRUITMENT AND MODELING

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Abstract. *The development of information and communication technologies had an important impact on internal processes from all the organizations, inclusive on recruitment process. Revolution of the Internet has modified the recruitment practices. Internet, because the workforce became very mobile, help the candidates and the organizations to perform. Now, recruitment is online, and the recruitment sites became a cost-efficient source, rapid, and 24/7. Recruitment using Internet will play an important role in the present world who became digital. In this article we want to present the evolution of this process, the benefits for organizations and for the candidates, but also the disadvantages, and the factors which influenced the use of e-recruitment. We also want to analyse e-recruitment at Romanian level, using simulation and modeling, determining if there is a relationship between e-recruitment as a dependent variable and some independent variables as Internet skills, computer skills, penetration rate of Internet and other factors which we consider that have an important influence on using e-recruitment.*

Key words: *business, information and communication technologies, e-recruitment.*

JEL Classification: *M12, M51.*

1. Introduction

“Internet will not try to replace the other media used for recruitment, but it is another simple tool who became necessary for HR departments from organizations” - Bruce Skillings, VP at Bernanrd Hodes Advertising, USA.

Besides other forms of external recruitment, the organizations can use their web sites (Frățilă and Duică, 2014, p.67). The Internet has brought a major change in recruitment field in the past decade acting as a link between organization and the candidates. Revoluția internetului a modificat profund practicile de recrutare. With no doubt this domain and its new technologies had a very important impact over the the human resources management (Bellier and Trapet, 2001). One of modern business condition is to adapt rapidly to the economic environment being under continuous changing. Taday, using Internet, Intranet and Extranet, the information is quickly transfered, and the workforce become more and more mobile (Stegăroiu and Florea, 2014). Many organizations present their vacancies on their official sites (Pell, 2008). Web-sites represent a quick and cheap source of recruitment (Price, 2000) and may be very efficient in retaining talented employees on long run (Bach, 2005). It was demonstrated that if the employees are applying their resumes, by htier own, they are tempted to stay longer with the organization, then using other recruitment sources.

Today’s globalized world faces an increasing shortage of talent. Many organizations invest in their talented potential developing their digital competencies which are now among the major skills for future talents (Van Der Sluis and Van De Bunt-Kokhuis, 2009, p.2).

Recruitment helped by the use of Internet, say Bondarouk (2009) will play a very important role, as the world is becoming more digital.

In this article we present the importance of e-recruitment, its evolution and its benefits, but also the dizadvantages of using such new method. We also analyse e-recruitment at Romanian level, using simulation and modelling (Eviews 7), determining if there is a relationship between e-recruitment and some factors with influence on this

process, and we demonstrate if the distribution of used data is normal, if there is a correlation and if there is a normal distribution of residuals.

2. The importance of e-recruitment worldwide

The use of world wide web has become a powerful alternative to recruitment for organizations. For the younger generation, this task is easy, as they were born digital (Folk and Apostel, 2016, p.46). We observe that the use of Internet as recruitment medium has increased substantially in recent years.

To show this importance we present the point of views of some specialits in the field.

Taylor (2005, p.176) say that the rise of web improved recruitment process making it a revolutionary development, destined to change the way this process operates. Harvey and Blakely (2002, p.93) say that e-recruiting has had a profound effect on business in general; the scope and definition of e-recruiting is changing from extra-organizational process to an inter-organizational one. Bondarouk et al. (2011, p.160) say that online recruitment can be defined as the use of the Internet to attract potential employees to an organization (using the company's own corporate website and also the commercial jobs boards). Also, Falcone (2002, p.67) add that the Internet first emerged as a recruitment method in he mid-1990s and, since then, its use has risen considerably. Companies are changing their recruiting paradigms to sell to an incrdibly tightened job market; one way to sell themselves to the market is through Internet ads.

Organizations are using e-recruitment as a way of attracting candidates, becoming a challenging task due to the growing competition for talented employees. To find these employees the organizations cross even the local borders (Kavanagh et al., 2013, p.371).

The Internet has become a mainstream recruitment medium in recent years (Price, 2007, p.342). The Internet and the web have revolutioned the way people communicate, bringing a radical change on doing business and also creating models that did not exist in the past (Kamel, 2006, p.143). Internet technologies have introduced profound changes in many aspects of our lives; big changes have also occured in the way that people look for new jobs and how organizations recruit and select them for work (Reynolds and Weiner, p.XIII). Websites has become a new method to recruit future employees using e-mails and social networking sites into the new digital media recruitment (Toepel, 2015, p.75). Online job boards and company websites were seen as credible sources of employment (Landers and Schmidt, 2016, p.192). Online recruitment can be done using email, websites and social network sites (Fieldrig et al., 2016).

3. E-recruitment: benefits and dizadvantages

"It seems that the Internet and the Intranet were specially created for human resources management"- Doran A., 2001.

E-recruitment offers many benefits for the organization who use a platform to attract the talented future employees and for the candidates who use this platform in order to submit their resumes.

Benefits for organization and for the candidates:

- reduce time, costs for organizaton and also for the candidates (Bournois et al., 2007). Cappelli (2001) estimated that, the costs for e-recruitment are just 20% from the costs destined for traditional recruitment;
- geographical spread (Cappelli, 2001; Pin et al., 2001; Freeman, 2002; Barber, 2006);
- larger audience (Bartram, 2006; Pin et al., 2001; Galanaki, 2002; Barber, 2006);

- greater chance to find right candidate; quicker/greater effectiveness (Galanaki, 2002; Barber, 2006);
- relatively cheap (Galanaki, 2002; Cappelli, 2001; Pin et al., 2001),
- higher quality of applicants (Bartram, 2000);
- better match workers/vacancies, reduction of unqualified candidates (Pin et al., 2001);
- improve corporate image and profile (IES Report, 402), reduce recruitment costs, reduce administrative burden, employ better tools for the recruitment team;
- the ability to target a wider and more diverse pool of candidates, more opportunities for smaller companies (Pin et al., 2001);
- quicker turn-around time/cost saving (Galanaki, 2002; Pin et al., 2001; Zusman and Landis, 2002; Cappelli, 2001; Florea, 2013, p.80);
- is the cheapest and the most effective way of recruitment (Falcone, p.67), reducing the costs with 85% (Bach, 2005);
- 24/7, time saving and relatively cheap (Cappelli, 2001; Pin et al., 2001; Freeman, 2002; Barber, 2006; Doran, 2001);
- easy access to information about employer (Barber, 2006);
- reduce the costs with paper and printing (Doran, 2001);
- offer the opportunity to choose a large number of candidates of quality, at a lower cost (Armstrong, 2006);
- allows organizations to escape from the hassle of going through an enormous number of CVs (Kamel, 2006, p.143);
- user-friendly, speed, effectiveness, price, improve branding (Van der Sluis and Van de Bunt-Kokhuis, 2009, p.205);
- speed of filling a job opening (Kavanagh et al., p.371), quality and diversity of applicants;
- rapidity of the process, eliminate the intermediaries (Hopkins, 2003);
- time-efficiency, relatively simple process, grow the productivity (Bournois et al., 2007);
- low costs, many qualified (Bondarouk, 2009), international accessibility (Galanaki, 2002);
- allows previewing the applications (Hopkins, 2003);
- a new vector in receiving the resumes (Guillot-Soulez, 2009);
- the ad get also to the passive candidates (Czerny, 2004);
- convert rapidly the text and extract the key-words (Armstrong, 2006);
- may have the ability to attract and retain the right candidates (Cohen, 2001);
- Provide inexpensive and efficient communication channels and identify passive job seekers (Harvey and Blakely, 2002, p.93);
- E-recruitment is a win-win situation both for organization and also for the candidate (Kavanagh et al., 2013, p.371);
- Low cost and broad reach (Posthumus, 2015, p.51);
- E-recruitment is knowing an extensive use (is efficient in finding the right candidate for large organizations and also for smaller ones) (Price, 2007, p.342);
- offer valuable and updated info for the candidates (Doran, 2001);
- modify the way of searching by using spontaneous resumes (Guillot-Soulez, 2009).

Dizadvantages

Besides the many advantages presented above, there are also some dizadvantages of e-recruitment, such as:

- the limited access of potential candidates due to some factors: age (this category being not prepared compared with the new „digital generation” (Bondarouk, 2009) , the level of knowing to use computer or use Internet, the low level of financial resources in order to buy a computer, these persons getting to the process named by the researchers „digital isolation” (Lancaster, 2003);
- the employers are receiving too much resumes for the vacancies implying higher costs (Torrington et al., 2005). Many ads may occur without being real;
- development fees for small companies (Barber, 2006);
- corporate name recognition required (Galanaki, 2002; Barber, 2006);
- outdated résumés (Hays, 1999);
- discrimination/privacy (Bartram, 2000; Feldman and Klaas, 2002); Pin et al., 2001);
- internet not the first option for applicants (Piotrowski and Armstrong, 2006; Brencic and Norris, 2008);
- overwhelming number of candidates (Cappelli, 2001; Barber, 2006);
- number of unqualified candidates (Galanaki, 2002);
- lack of personal touch (Feldman and Klaas, 2002; Brencic and Norris, 2008);
- privacy problems (Pin et al., 2001; Brencic and Norris, 2008);
- discrimination of those who do not have access (Pin et al., 2001; Barber, 2006).

4. Research - analyzing the influence of some factors on efficiency of e-recruitment on Romanian level

We made this research starting with the facts:

- The Internet has profoundly influenced many processes, including recruitment process;
- It has been an important rise in using e-recruitment in the recent years;
- Internet penetration rates is growing continuously;
- Internet offers many important benefits for organizations and also for the candidates;
- The online job market is growing faster than the conventional recruitment market.

Objective

The main objective of this article is to show the role of new technologies and of the Internet have in recruitment process and in implementing them in order to find talented future employees necessary to achieve competitive advantage. We want to show that there is a direct relationship between the Internet and recruitment process using simulation and modeling.

Research Hypotheses

For the purpose of this study, the following hypotheses were put to test and analyse them.

H1- There is a direct and positive relationship between e-recruitment and the analyzed variables.

H2- There is a normal distribution among the analysed variables.

H3- There is a correlation between the analyzed variables.

H4- There is a normal distribution for residuals.

Sample selection

Data were gathered from Romanian level on 11 years period, between 2006 and 2016.

Tools Used for Analysis

In this study we were using the following tools:

- Linear Regression Model (using OLS to test the impact of two dependent variables on the independent variables);
- Descriptive Statistics (to find out the normal distribution of returns of the analysed variables);
- Correlation Matrix (to find correlation between the analysed variables);
- Normal distribution of residuals (Skewness, Kurtosis, Jarque-Bera tests).

The computation of data for this study was made by using E-Views (Version 7.0).

Research Methodology

To remain competitive in today’s global and continuously dynamic environment, organizations are looking for more efficient and effective means of attracting, obtaining and retaining talented employees. A mean which can help organizations to achieve their goals is to use and implement new technologies and especially the Internet.

In this article we used samples of nine variables registered at Romanian level (Table no. 1).

Table no. 1. The variables influencing e-recruitment

year	individuals using internet for looking for a job or sending a job application (e-recruitment)	Internet penetration rate (%)	Internet use by individuals	individulas frequently using the Internet	individuals regularly using the Internet	individulas using the Internet for sending or receiving e-mails	individuals level of computer skills	individuals level of Internet skills (e-skills)	enterprises with broadband access
2006	3	24.7	21	9	18	16	13	14	31
2007	3	28.3	24	12	22	20	14	16	37
2008	3	32.4	29	15	26	24	16	19	44
2009	5	36.6	33	19	31	28	17	22	41
2010	7	39.9	36	21	34	31	16	25	52
2011	9	40	40	24	37	35	15	20	57
2012	9	45.9	46	29	43	38	14	24	62
2013	8	49.8	50	32	45	42	16	29	67
2014	8	54.1	54	32	48	43	18	30	82
2015	6	56.8	56	37	52	43	19	31	85
2016	7	58	60	42	56	42	20	32	80

Source: www.eurostat.com.

To understand better the difference/the gap between the analyzed variables we make a graphical representation of the trend of analyzed variables at European level (EU28) and Romania between 2006 and 2016 (Figure no. 1).

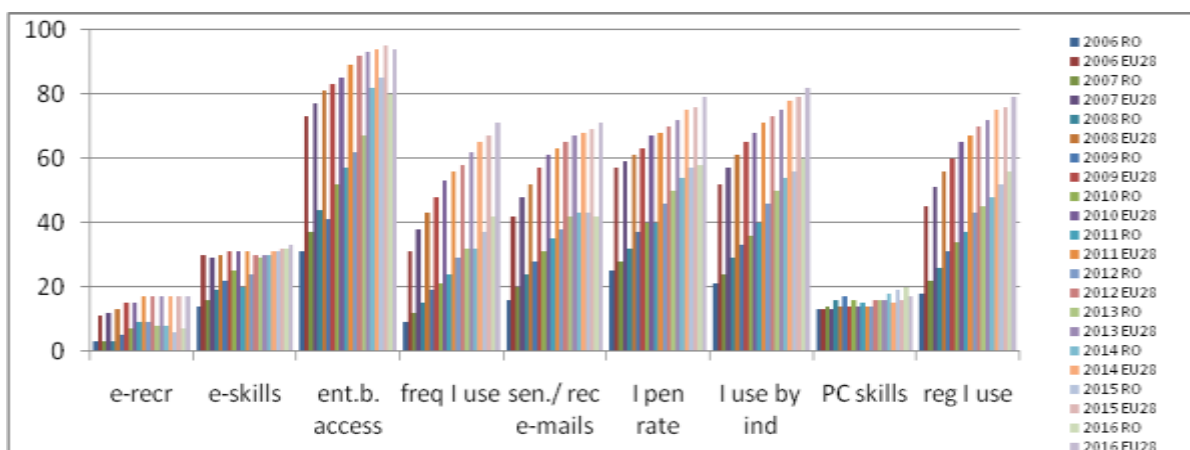


Figure no. 1. The representation of analyzed variables EU28 vs Romania between 2006 - 2016

We may see that, the e-recruitment is almost 100% in many developed countries, and in Romania is still low. According to the data registered at European level, Romania ranks the last in DESI 2017 (connectivity, human capital, use of internet, integration of digital technology, digital public services) (<https://ec.europa.eu/digital-single-market/en/scoreboard/romania>). Romania is classified the second to broadband access and the speed of Internet but, the rate of digitisation of economy and the level o digital skills is very low (Figure no. 2).

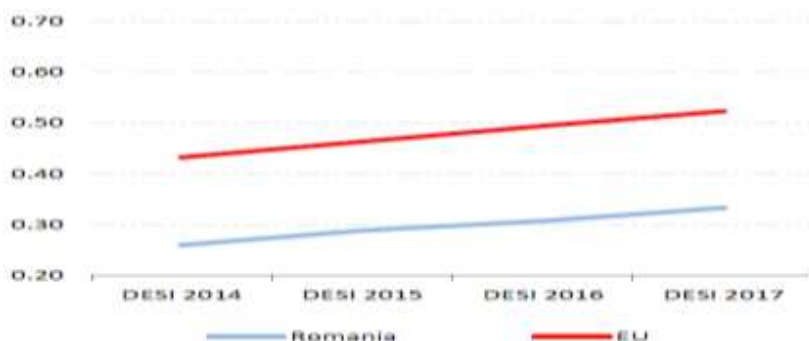


Figure no. 2 DESI evolution over time (EU and RO)

	Romania		Cluster	EU
	rank	score	score	score
DESI 2017	28	0.33	0.41	0.52
DESI 2016 ¹	28	0.31	0.38	0.49

Figure no. 3. DESI 2017- relative performance

As we may observe, DESI is the lowest value for Romania registered for the last two years at European level (Figure no. 3). Even if the individuals use the internet from 21 to 60 from 2006 to 2016 (Table no. 1), according to eurostat.com, and digital skills are improving, Romania is remaining the second lowest from EU. Internet users engage in online activities much less than the EU average, in particular when it comes to e-commerce and e-banking.

5. Using OLS method

The coefficients of the analysed variables can be estimated by using the OLS method. Using Eviews 7 we may observe the relationship between e-recruitment and the analyzed variables (Figure no. 4).

Dependent Variable: E_RECR				
Method: Least Squares				
Date: 02/25/17 Time: 21:15				
Sample: 1 11				
Included observations: 10				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
E_SKILLS	0.624047	0.023323	26.75705	0.0238
ENTERPR_INT	-0.165202	0.005985	-27.60185	0.0231
FREQ_INT_INDIV	-1.125645	0.028819	-39.05895	0.0163
INDIV_SEND_RECEIV_EMAILS	-0.225187	0.016489	-13.65715	0.0465
INT_PEN_RATE	-0.255746	0.037449	-6.855882	0.0922
INT_USE_INDIV	0.452537	0.025700	17.60841	0.0361
PC_SKILLS_INDIV	-1.001891	0.021864	-45.82468	0.0139
REG_INT_INDIV	1.096921	0.033882	32.37518	0.0197
C	3.326496	0.249281	13.34438	0.0476
R-squared	0.999952	Mean dependent var	5.900000	
Adjusted R-squared	0.999571	S.D. dependent var	2.282785	
S.E. of regression	0.047287	Akaike info criterion	-3.757732	
Sum squared resid	0.002235	Schwarz criterion	-3.495405	
Log likelihood	27.83866	Hannan-Quinn criter.	-4.066474	
F-statistic	2621.632	Durbin-Watson stat	3.561896	
Prob(F-statistic)	0.015104			

Figure no. 4. OLS using e-recruitment as a dependent variable

Finishing the calculation using OLS method, we obtain the estimation equation, which has the following values (Figure no. 5):

Estimation Equation:	
E_RECR = C(1)*E_SKILLS + C(2)*ENTERPR_INT + C(3)*FREQ_INT_INDIV + C(4)*INDIV_SEND_RECEIV_EMAILS + C(5)*INT_PEN_RATE + C(6)*INT_USE_INDIV + C(7)*PC_SKILLS_INDIV + C(8)*REG_INT_INDIV + C(9)	
Substituted Coefficients:	
E_RECR = 0.624046592601*E_SKILLS - 0.165201817893*ENTERPR_INT - 1.12564498407*FREQ_INT_INDIV - 0.225187415117*INDIV_SEND_RECEIV_EMAILS - 0.256746102846*INT_PEN_RATE + 0.452537401949*INT_USE_INDIV - 1.00189146512*PC_SKILLS_INDIV + 1.09692096939*REG_INT_INDIV + 3.32649653915	

Figure no. 5. The values for calculated variables

The regression model shows that the free term is positive (3.32) and an increase of 1 point in the e-recruitment will trigger an increase by 0.62 points of the e-skills, a decrease by – 0.16 points of enterpr_int, a decrease by – 1.12 of the frequency, a decrease by – 0.22 of the sending/receiving e-mails, a decrease by – 0.25 of internet penetration rate, an increase by 0.45 of internet use, a decrease by – 1.00 of computer skills, and an increase of regularity by 1.09.

R-squared is 0.999, resulting that R is 0,99949, concluding that between e-recruitment and the analyzed variables there is a strong, direct and positive relationships (being almost equal to 1). Thus, the hypothesis **H1- There is a relationship between e-recruitment and the other analyzed variables** is accepted.

Descriptive statistics

Table no. 2 presents a summary of the descriptive statistics using data between 2005-2016 at Romanian level.

Table no. 2 The results of descriptive statistics for analysed variables during 2006 and 2016

	E_RECR	E_SKILLS	ENTERPR_I...	FREQ_INT_I...	INDIV_SEN...	INT_PEN_R...	INT_USE_IN...	PC_SKILLS...	REG_INT_I...
Mean	6.181818	23.81818	58.00000	24.72727	32.90909	42.70000	40.81818	16.18182	37.45455
Median	7.000000	24.00000	57.00000	24.00000	35.00000	43.00000	40.00000	16.00000	37.00000
Maximum	9.000000	32.00000	85.00000	42.00000	43.00000	58.00000	60.00000	20.00000	56.00000
Minimum	3.000000	14.00000	31.00000	9.000000	16.00000	25.00000	21.00000	13.00000	18.00000
Std. Dev.	2.358736	6.193839	18.91560	10.60274	9.792390	12.08351	13.35528	2.182576	12.47689
Skewness	-0.322985	-0.133597	0.125987	0.064851	-0.460121	-0.118032	-0.044955	0.302128	-0.088494
Kurtosis	1.628797	1.727673	1.678469	1.873689	1.812402	1.592137	1.675489	2.117170	1.811058
Jarque-Bera	1.053009	0.774680	0.829553	0.589141	1.034565	0.849085	0.807773	0.524569	0.662250
Probability	0.590666	0.678860	0.660488	0.744851	0.596138	0.654069	0.667720	0.769292	0.718115
Sum	68.00000	262.0000	638.0000	272.0000	362.0000	427.0000	449.0000	178.0000	412.0000
Sum Sq. Dev.	55.63636	383.6364	3578.000	1124.182	958.9091	1314.100	1783.636	47.63636	1556.727
Observations	11	11	11	11	11	10	11	11	11

We may observe that in the summary statistics were used mean, minimum, maximum, median, standard deviation (SD), skewness, kurtosis and the Jarque- Bera in order to analyse the sample during the period noted above. All the analyzed variables present a positive mean value. The mean for enterprises with broadband acces has the largest value (58.0) but not so much comparing with the other analyzed variable (6.18 - the minimum, and 42.7 - the maximum). The range of variation between maximum and minimum is quite logical. We observe in the table above that for all data series, the mean and median have very similar values, the ratio between mean and the median of each variable being approximately 1.

The standard deviation compared to the mean is not low which indicates coefficient of variation. Also, the sum squared deviation row represents the net change over the sample period. It shows that internet use by enterprise and for individuals increased very much, while e-recruitment and computer skills increased insignificantly. Also, the standard deviation (Std. Dev.) of data series has small values for all the variables and therefore it can be considered that the series are relatively homogeneous.

In terms of skewness, the results for variable 1, 2, 5, 6, 7 and 9 are negatively skewed while for variable 3, 4 and 8 indicate a positive skewness.

The value for kurtosis in each variable is between 1.59 and 2.11 being below the benchmark for a normal distribution of 3, which is positioned near normality. It is important to show that all the values of kurtosis are smaller than three, but bigger than 0, making the distribution Leptokurtic and the values concentrated around the central tendency. Thus, the analyzed variables are characterized by a normal distribution.

The values obtained for Jarque Bera test are between 0.52 and 1.05 (indicating that all the variables are approximately normally distributed), having associated probabilities between 0.59 and 0.76 indicating that the variables are not volatile. The Jarque-Bera (JB) values show that all the sample indices were normally distributed. In other words, all the sample indices were less volatile during the analysed period. Thus, the distribution of all the sample indices was normal.

So, the hypothesis H2- **There is a normal distribution among the analysed variables**, was accepted.

6. The correlations among the analysed variables

In Table no. 2 we can observe if there is any relationship between two analyzed variables. According to the results, the values of correlation are all strong and positive and ranged from 0.35 to 0.99. Between frequency of using internet and: regularly using the internet there is the strongest relationship (0.99) and internet use by individuals (0.99), and

than between the internet penetration rate and: e-skills (0.98) and frequency of using internet (0.98), sending e-mails and e-skills (0.97), internet use by individuals and e-skills (0.97) and so on.

The following calculations shows the correlations among the analyzed variables.

Table no. 2. The correlation matrix

Correlation									
	E_RECR	E_SKILLS	ENTERPR_I...	FREQ_INT_I...	INDIV_SEN...	INT_PEN_R...	INT_USE_IN...	PC_SKILLS...	REG_INT_I...
E_RECR	1.000000	0.778353	0.725375	0.765820	0.858957	0.784269	0.788124	0.350551	0.790200
E_SKILLS	0.778353	1.000000	0.950398	0.963779	0.970244	0.983558	0.972375	0.832705	0.973006
ENTERPR_I...	0.725375	0.950398	1.000000	0.955832	0.955041	0.978902	0.976944	0.774984	0.968196
FREQ_INT_I...	0.765820	0.963779	0.955832	1.000000	0.960414	0.988707	0.993240	0.784739	0.996632
INDIV_SEN...	0.858957	0.970244	0.955041	0.960414	1.000000	0.980688	0.978111	0.709982	0.974456
INT_PEN_R...	0.784269	0.983558	0.978902	0.988707	0.980688	1.000000	0.996762	0.799984	0.996033
INT_USE_IN...	0.788124	0.972375	0.976944	0.993240	0.978111	0.996762	1.000000	0.778888	0.997384
PC_SKILLS...	0.350551	0.832705	0.774984	0.784739	0.709982	0.799984	0.778888	1.000000	0.785827
REG_INT_I...	0.790200	0.973006	0.968196	0.996632	0.974456	0.996033	0.997384	0.785827	1.000000

From these calculations results that the hypothesis **H3 - There is a corelation between the analyzed variables**, was accepted, thus between the analyzed variables do exist only direct, strong and positive correlations.

7. The normality for residuals

To test the residuals of the model, we have to analyze if they follow a normal distribution or not.

To verify the hypothesis of normality for residuals, we calculate the Jarque-Bera test, the skewness, which measure the symetry of the residulas distribution around the mean of these (and is zero), and the kurtosis. The Jarque-Berra test (JB) is based on the hypothesis that the normal distribution has the skewness, $S = 0$, and the kurtosis, $K = 3$.

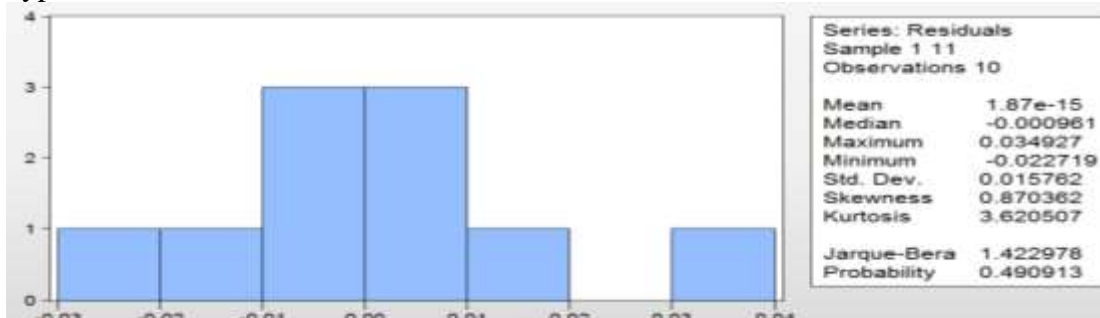


Figure no. 7. The distribution of residuals

If the probability p of JB is enough low, then the normality hypothesis of residuals is rejected, and if the probability is high, the normality of residuals distribution is accepted. In our case (Figure no. 7) the value of JB test is 1.42. It is observed that skewness = 0.87, and kurtosis = 3.62, the probability of the test is = 0.49. From these reasons we accept the hypothesis that the distribution of residuals follows a normal distribution. Thus, the hypothesis **H4 - There is a normal distribution for residuals** is accepted. This is observed also from the representation made by Eviews, which shows that the distribution of residuals is almost normal.

8. Conclusions

It was found that companies can increase the efficiency of the recruitment process if they integrate an e-recruitment system in their human resources management infrastructure that automates the candidate pre-screening process.

We may see that there are many important advantages of using e-recruitment such as efficiency at low costs and with big rapidity, and it can offer the opportunity of equal

chances for all the employees based on non-discrimination, equity, social responsibility and sustainable development, opportunity to find quickly talented employees, to screen out the employee marketplace, access many programs Internet-based for recruitment, to develop a data base using information about interested candidates and their skills, abilities, behavior, training programs, experience, to attract the talented employees, to lower costs of recruitment process, to attract the best employees by their brand, culture and internal values, to improve the relationships with future employees, having strategic impact on the direction of the organization and creating challenges for the business.

The results of using simulation and modeling techniques identify few important factors which may influence the technology adoption.

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WEEE MANAGEMENT IN ROMANIA IN THE CONTEXT OF THE EUROPEAN WASTE MANAGEMENT POLICY

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***Abstract:** Our paper aim to present waste management situation regarding electrical and electronic equipment (WEEE) in Romania in relation to the situation in European Union and with the legislation. First we will review the Romanian law in the light of European legislation that sets European goals and measures to achieve them. Then Romania's situation is presented in comparison with other European countries regarding the quantity of WEEE collected, the mains categories of DEEE collected, the DEEE treatment as well as the evolution of collection rate. We highlight causes of delay that characterize Romania's situation in terms of WEEE management and difficulties currently facing Romania in this field.*

***Keywords:** collection, WEEE, legislation, Romania, statistics.*

***JEL Classification:** M2, Q53, Q58.*

1. The European and national legislation on WEEE

WEEE is the name that bring together waste electrical and electronic equipment, as they were defined by European legislation transposed into national law. According to Romanian GD 1037/2010, the WEEE category includes ten groups of electrical and electronic equipment, such as: household appliances large and small; consumer equipments, lighting and IT and telecommunications equipments; electrical and electronic tools (except large stationary industrial tools); toys, leisure and sport equipments; Medical devices (except implanted and infected products); monitoring and control instruments and vending machines. Provided that such equipment can be waste is, besides belonging to the class, to not be a part of another type of equipment that does not fall within the scope of this law. Military equipment is not covered by WEEE legislation for reasons of national interests protection, this exception being extended to all equipment that helps to protect national interests.

These products have an important influence on the environment, on the one hand by the amount of resources (especially metals, including rare earth metals) and energy used to produce, transport and use them. On the other hand, EEE can have harmful effects on people and environment if their waste is not properly managed. Thus, many of these products have become waste can produce toxins if incinerated or deposited in dumps waste. Also, recycling of WEEE is an opportunity to create jobs, if protecting rules for workers are created, because they are exposed to contact with a number of metals that can become toxic or hazardous. This situation has forced formulation of common rules at European level and its integration into acts applicable in all Member States.

At European level, the legal framework in this area include reference documents such as Directive 2002/96/EC on WEEE, and Directive 2002/95/EC on the hazardous substances contained in EEE (also called RoHS Directive). The purpose of these rules is to specify the conditions for placement of EEE products on the market, as well as the management framework of DEEE. Thus, Directive 2002/96/EC sets out the categories of products covered by EEE group and criteria underlying the classification of products in these categories, outlines the responsibilities of MS on selective collection and treatment of WEEE, the rules on recovery of WEEE (reuse, recycling), the ways of financing WEEE management, information to be transmitted to users and also information that MS centralize from EEE producers. Directive 2002/95/EC lays down the rules to be followed to limit the use of hazardous substances in carrying EEE (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls-PBB, polybrominated diphenyl ethers-

PBDE). The two acts were completely revised by Directive 2011/65/EU of 8 June 2011 (known as RoHS II Directive) and Directive 2012/19/EU of July 4, 2012 (called WEEE II Directive).

In Romania, Directive 2012/19/EU was transposed into national legislation by Government Decision no. 1037/2010 on waste electrical and electronic equipment and Directive 2012/19/ EU is transposed by Government Emergency Ordinance no. 5/2015 on waste electrical and electronic equipment. The general national legislation on waste is provided by Law no. 211/2011 on waste regime, as amended.

GD 1037/2010 established obligations of local authorities and producers in selective collection. The national average of WEEE collection established by law is at least 4 kg/ inhabitant/year, similar to the objective set out in the European Directive. The executive authorities of administrative and territorial units are required to organize, manage and coordinate the separate collection of WEEE or WEEE collection entrust to an economic operator collector, authorized by the Environmental Protection Agency, if WEEE collection is not covered by sparse sanitation services. Also, local authorities have the obligation of returning WEEE collected to producers or their collective organizations, in order to achieve treatment/recycling of WEEE collected, and the obligation to provide evidence of WEEE entering and leaving the collection points and annually report data to the county agencies for environmental protection. Another requirement stipulated by law is to ensure the existence and operation of at least one point of collection of WEEE from private households to 50,000 people, but not less than a collection point in each locality; This point must take WEEE both from holders and distributors.

Regarding distributors, they are obliged, when deliver a new product, to take a WEEE in one to one system, without requiring payment. Producers (defined by law as people who manufacture/sell/resell EEE with their own branded, imports or exports EEE) can organize and operate individual or collective take-back of WEEE from private households and they are required to transport them to authorized treatment facilities. To perform operations of WEEE collection, collective organizations should be authorized by the Ministry of Environment and Forests.

Funding management of WEEE from private households (collection, treatment, recovery, environmentally sound disposal) is supported by individual producers or through collective organizations. For WEEE from users other than private households, the financing of waste management is supported by producers.

Also, for each category of WEEE are established minimum rates of recovery (Rv) and reuse / recycling (Rr) as a percentage of the weight of the device: Rv = 80% and Rr = 75% for large household appliances and vending machines, Rv = 75% and Rr = 65% for computer equipment, electronic communications equipment, consumer electrical appliances, Rv = 70% and Rr = 50% for the other categories of products (excluding medical devices).

All manufacturers are responsible for informing EEE users of private households on compulsory WEEE sorting, WEEE effects on the environment and human health, as well as the European symbols on sorting WEEE.

Five years later, GEO no. 5/2015 clarify the entities that are involved in sorting and treatment of WEEE and their obligations. Manufacturers remain the only responsible for collecting WEEE from other sources than private households. Instead, they are set out three categories of entities that can provide separate collection of WEEE from private households:

- public service of WEEE collection;
- suppliers;

- collection centers organized by authorized economic operators to collect WEEE. These centers sign a contract with EEE producers, with their collective organizations or with operators carrying out treatment operations of WEEE on behalf of producers/collective organizations.

Producers can set up and operate individual or collective take-back of WEEE. At the same time, administrative units are specified to have an obligation to ensure the collection of WEEE from private households, based on at least one of the three ways proposed by law:

- fixed centers for collecting, at least one in 50,000 people, but not less than one center in each administrative unit;
- mobile collection points;
- regular collection with designated operators at least once a quarter.

Regarding distributors, the law maintain the obligation when selling a new product to take back an old equipment of equivalent type, without requiring payment. But, in addition, distributors with retail space of at least 400m² are required to ensure the free collection of very small WEEE from end users, in the stores or in the vicinity thereof without obligation to buy EEE of an equivalent type (except for contaminated WEEE that presents a risk to health and safety of staff).

The average rate of WEEE collection from private households required to producers through GEO 5/2015 is kept at 4 kg /inhabitant/year. Instead, according to GD 1037/2010, EEE producers and collective organizations had an obligation to collect an amount of WEEE established based on annual percentage rates calculated by the Ministry of Environment and Forests; this rate was calculated as the ratio between the amount of WEEE (from private households) collected annually per inhabitant and the amount of EEE placed on the national market in the last two years. According to GEO no. 5/2015, from January 1, 2016 the calculation of the annual collection rate is set for the producers as a ratio between the total weight of WEEE collected in that year and the average weight of the total amount of EEE placed on the market in the last three years. This percentage is at least 40% for 2016, 45% for the period 2017 to 2020 and 65% since 2021.

For measures of WEEE treatment, operators concerned are still obliged to hold an environmental permit. Regarding recovery of WEEE, targets set by GEO no. 5/2015 is characterized by a gradual increase to the previous law. So:

- a) for large household appliances and vending machines, R_v=80% and R_r=75% up to August 14, 2015, the percentage increase to R_v=85% and R_r=80% up to August 14, 2018;
- b) for computer equipment, electronic communications equipment, electrical consumption and photovoltaic panels, R_v=75% and R_r=65% up to August 14, 2015, the percentage increase to R_v=80% and R_r=70% up to August 14, 2018;
- c) for other products categories R_v=70% and R_r=50 up to August 14, 2015, the percentage increase to R_v=75% and R_r=55% up to August 14, 2018;
- d) for gas discharge lamps, R_r = 80%, the rate held constant until 14 August 2018.

For the period after August 15, 2018, the minimum rates required for recovery and reuse/recycling targets are specified by regrouping types of products in 6 categories (compared to 10 categories mentioned in the previous periods), as follows:

- a) heat exchange equipment (1st category) and large-scale equipment (category 4): R_v=85% and R_r=80%;
- b) Screens, monitors, and equipment containing screens with a larger area of 100 cm² (2nd category): R_v=80% and R_r=70%;
- c) Small equipment, including IT and telecommunication equipment (no external dimension more than 50 cm) (categories 5 and 6): R_v=75% and R_r=55%;

d) For lamps (category 3), the rate remains similar to previous periods: Rr = 80%.

2. Developments on WEEE management in the EU and Romania

The amount of WEEE is growing worldwide, from 39.8 million tons of WEEE in 2013 at 41.8 million tonnes in 2014, ie 44.7 million tonnes in 2016. This trend is encouraged by the growth rate of the population equipping with various types of EEE. For example, statistics show that in 2016, 53.6% of the world population use the Internet. At the same time, the average amount of WEEE per inhabitant increases also, from 5.8 kg /inhabitant in 2014 to 6.1 kg /inhabitant in 2016. Countries which have generated the highest amount of WEEE in 2016 are China (7, 2 million tons), USA (6.3 million tons), Japan (2.1 million tonnes), while in Europe, the amount of WEEE is estimated at 12.3 million tons in 2016, of which only 37% are collected (planetoscope.com).

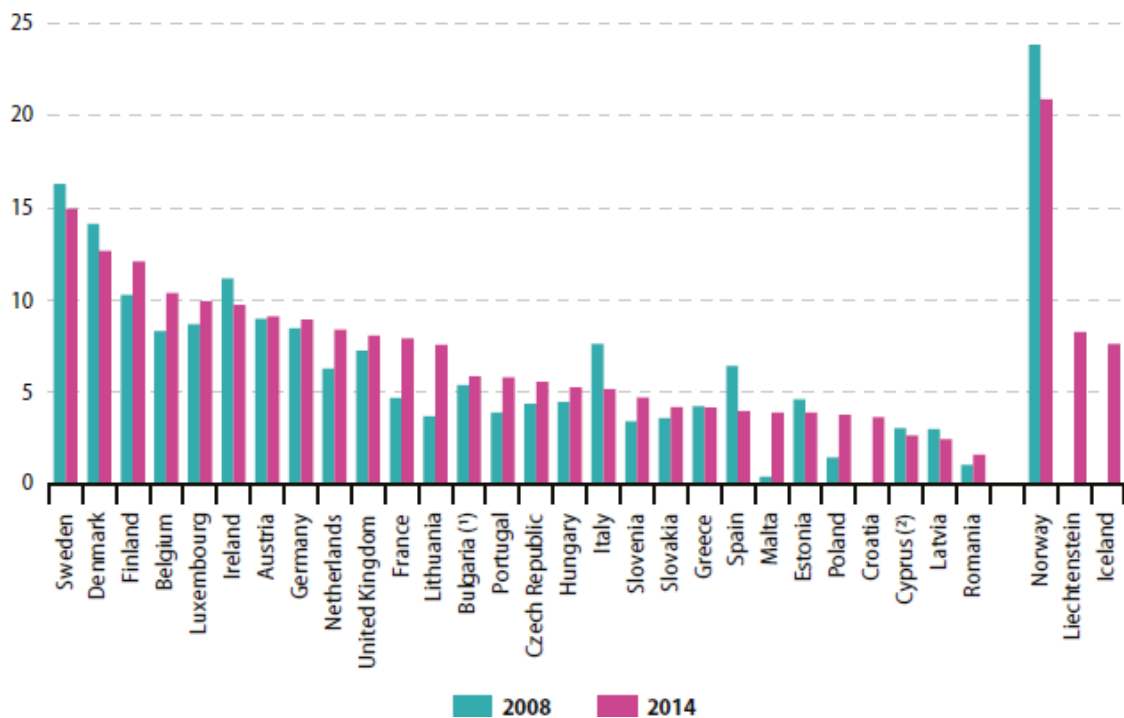


Figure no. 1. DEEE collected in European countries (kg/inhabitant), in 2008 and 2014
 Source: Eurostat, 2017, Energy, transport and environment indicators, p. 179.

In order to present the evolution of the waste collection in Romania, compared to other EU countries, we used statistical data provided by Eurostat and Eurostat reports on environmental indicators.

In the latest report of Eurostat on indicators of energy, transport and environment, published in 2017, it presented the amount of WEEE collected per inhabitant, in 2008 and 2014, allowing us to see that Romania ranks last among all European countries analyzed (Figure no. 1). The amount of WEEE collected in Romania is 1.6 kg/inhabitant. The countries with the largest quantities of WEEE collected are, in descending order, Norway (where the amount reached 20.9 kg/inhabitant), Sweden, Denmark, Finland, Belgium, Luxembourg, Ireland, Austria, Germany, Netherlands, UK, France, Lithuania (Eurostat, 2017, p.179). It should be noted, however, that Romania could not meet annual collection target of 4 kg of WEEE/ inhabitant due to lower quantities of EEE sold; for this reason, Romania requested and obtained a special exemption from the WEEE collection rates (Orban, 2015).

A closer analysis of the data allows us to observe that, in Romania, the amount of WEEE collected per inhabitant grew noticeable in the first year after EU accession (1.06 kg/ inhabitant in 2008 to 0.18 kg/inhabitant in 2007, an increase of 489% ... even though in absolute terms the figure is small). Subsequently the amount collected has evolved variable. Note, however, that the EU average amount of WEEE collected stagnate around 7 kg / inhabitant.

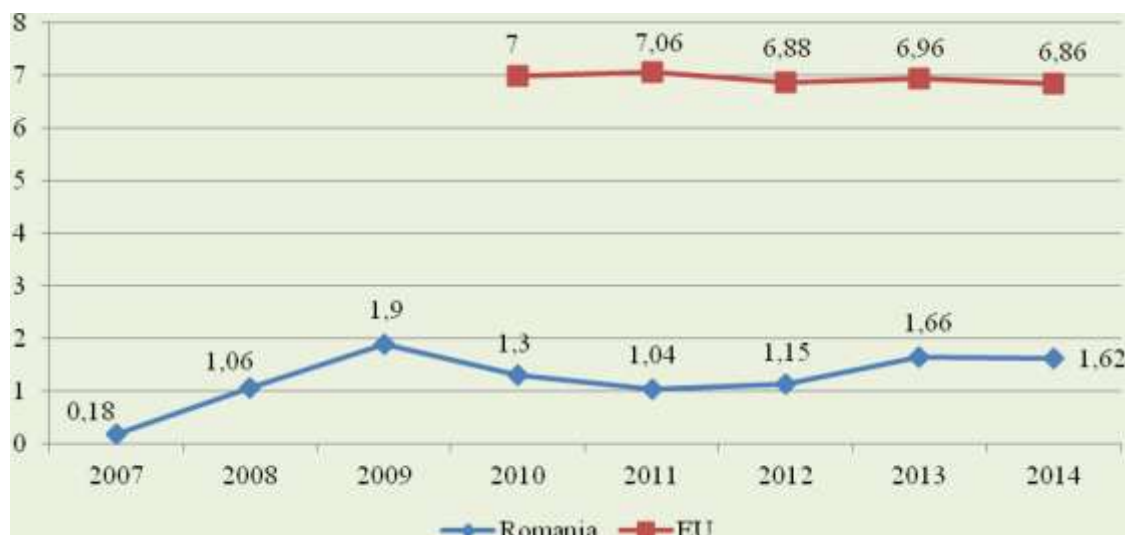


Figure no. 2. Evolution of the quantity of WEEE collected (kg/inhabitant) in Romania and UE

Source: author, according to data published by Eurostat.

Nationally, the total quantity of WEEE collected in Romania increased from 3685 tons in 2007 to 32,159 tons in 2014, while the quantity of WEEE collected in the EU reached 3,483,352 tons in 2014.

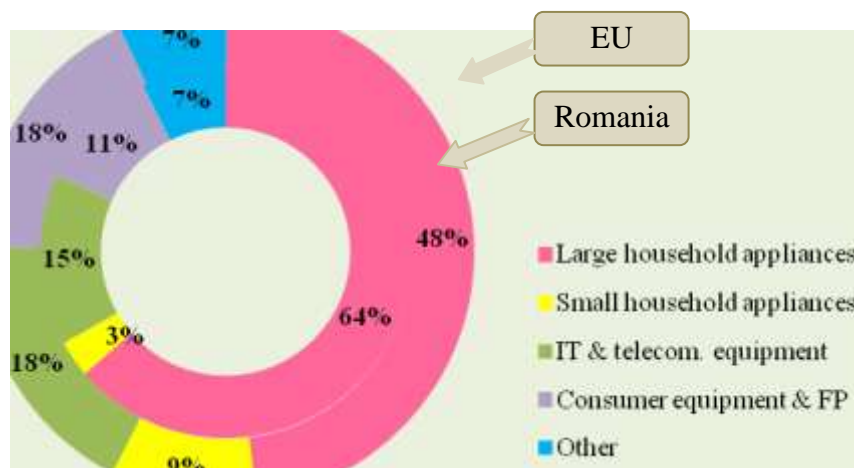


Figure no. 3. WEEE collected in Romania and EU, by equipment categories (2014)

Source: author, according to data published by Eurostat.

The main equipment categories collected in 2014, in Romania, were large household appliances (64% of collected WEEE), IT and telecommunications equipment

(15%), consumer equipment and photovoltaic panels (11%), small household appliances (3%). In EU, we observe that higher percentages are obtained by consumer equipment and photovoltaic panels (18%) and small household appliances (9%) (Figure no. 3).

Regarding sources of WEEE collection in 2014, the situation is quite similar in Romania and EU: private households is 90% in the EU and 93% in Romania and other sources accounted for 10% in EU and 7% in Romania (Figure no. 4).

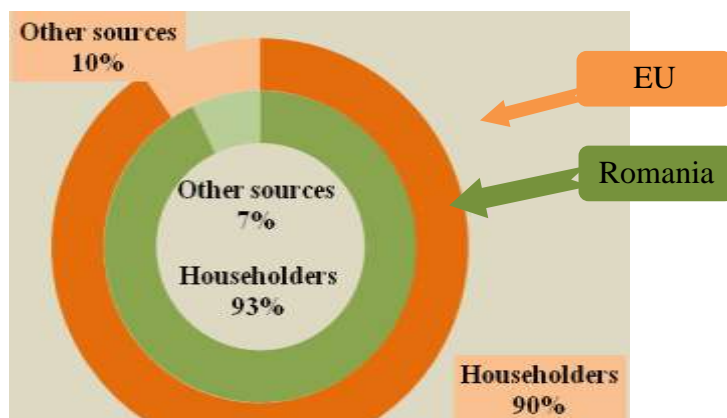


Figure no. 4. DEEE collected in Romania and UE, by source (2014)

Source: author, according to data published by Eurostat.

Of the treated waste, Romania treated 96.3% nationally and 3.7% in another EU Member State. Instead, in the EU, only 93.7% of the treated waste was treated in the state in which it was collected, 5.3% were treated in another MS, and 1% out of the EU (Figure no. 5).

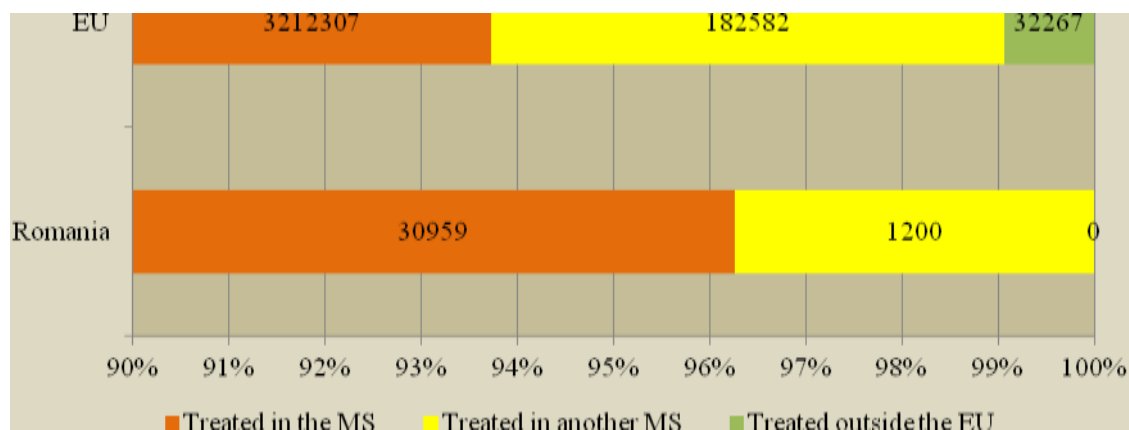


Figure no. 5. Treatment of WEEE in 2014: Romania-EU comparison (tons)

Source: author, according to data published by Eurostat.

The rate of waste collection, which we calculated it as the ratio of annual quantity of waste and quantity of products from EEE group placed on the market in the same year, indicates a linear and positive evolution in Romania: from the very low level of 2% in

2007 to 23% in 2014 (Figure no. 6). Instead, in the EU, the regression line drawn on the collection rates calculated indicate an increase in very low quantity (Figure no. 7).

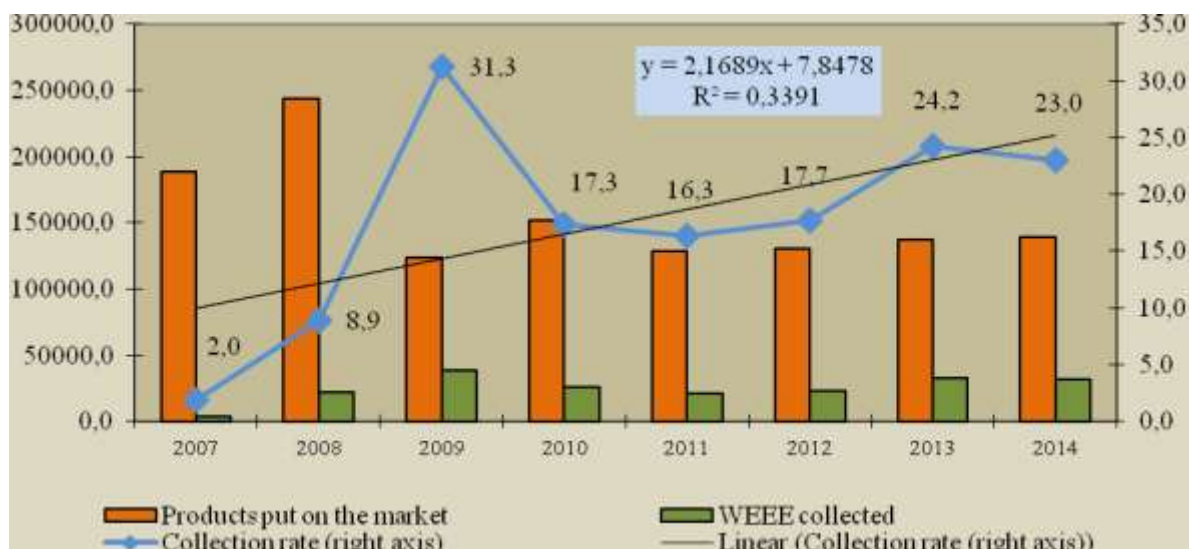


Figure no. 6. WEEE collection rate developments in Romania (%)

Source: author calculation based on data published by Eurostat.

If in Romania, when the quantity of EEE placed on the market increase by one unit (tonne), the amount of WEEE collected increase by 2.168 units (tonnes), for the EU growth is only 0.195 units. Also, graphs 6 and 7 indicate there is a direct link, with low intensity, between the quantity of EEE placed on the Romanian market and the amount of WEEE collected in Romania, while this association can not be established between the two EU phenomena.

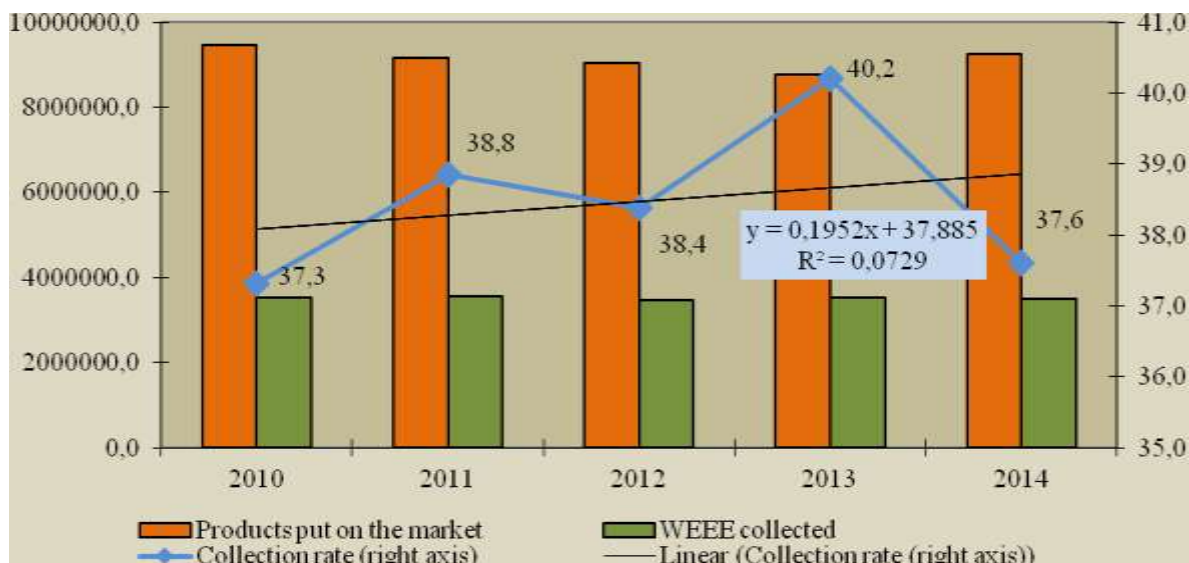


Figure no. 7. WEEE collection rate developments in EU (%)

Source: author calculation based on data published by Eurostat.

It must be said that the collection rate, as ratio of new product entrants on the market and collected waste is very different between Member States as shown in chart no. 8. Among the countries with the highest rates obtained by data reported in 2014 are Lithuania (70.4%), Bulgaria (64.5%), Sweden (60.9%), Norway (58.8%), Hungary (55.6%) and Finland (52.3%).

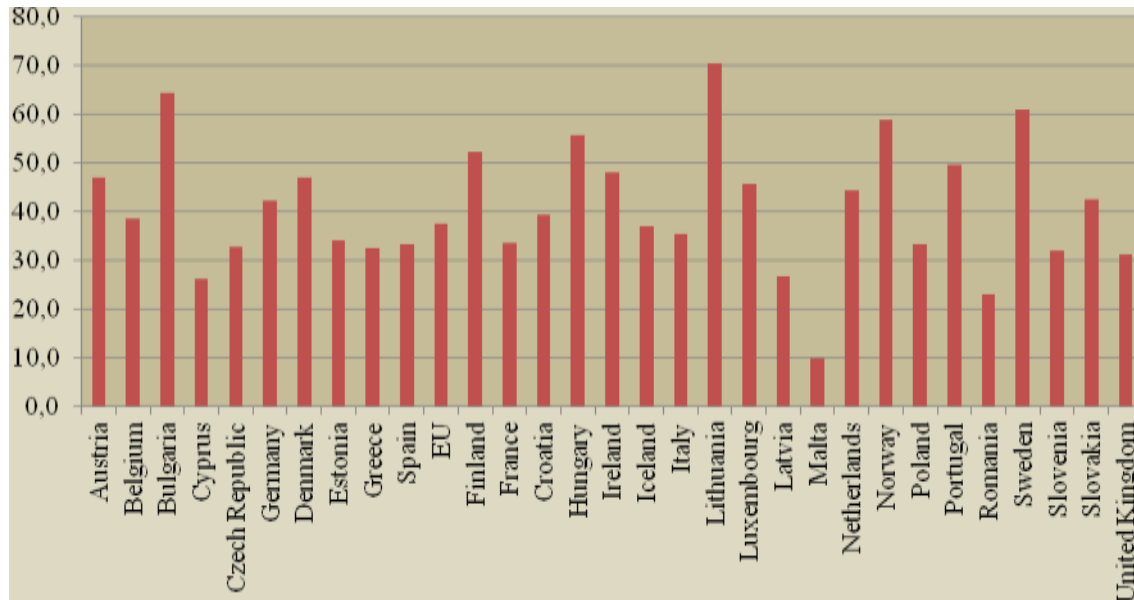


Figure no. 8. Collection rate of WEEE in 2014 in EU and member States (%)

Source: author, according to data published by Eurostat.

3. Problems and opportunities for improvement of WEEE management

Romania registered a significant increase in waste collection rate, more pronounced than in the EU; however, this rate not allowed Romania to be placed on a higher position in the hierarchy of European countries, so it remains the second lowest in 2014. The reasons for this are related of the delays in the implementation of European legislative changes, the management of waste collection, the population behavior regarding the collection of WEEE. Thus, Directive 2012/19/EU on WEEE was implemented only in 2015, through an emergency ordinance of the Government in the context that European Commission launched, in March 2014, the procedure prior to the action for infringement, under art. 258 of the Treaty on European Union. Emergency Ordinance was adopted when European Commission accomplished all stages of this procedure and would ask the Court of Justice of the EU. Even so, the legislative framework remains incomplete, so the degree of implementation and control.

Practically, the low rate of recycling waste in Romania is explained by specialists by poor waste management, lack of payment system which encourages waste collection (as happens in other countries) (Tatu, 2017), reduced access to the public collection system (in 2014, for example, about 35% of the country's rural population still do not have access to sanitation) (Orban, 2015). Lack of fixed and mobile centers of the WEEE collection, provided by law, lack of recyclable waste traceability and of WEEE collection campaigns organized at least once every three months are other factors that explain the low rate of collection (Orban, 2017). We should add a poor information and low awareness of population about the beneficial effects of selective collection.

Policies created by EU to reduce the impact of waste on the environment and health cover, on the one hand, the reducing of waste amount generated and, on the other hand, when waste production is unavoidable, the use of waste as a resource, the recycling or safe disposal. Prevention is therefore an option on waste, being mentioned since the Framework Directive 2008/98/EC revised. Prevention is declared as a priority, followed by reuse, recycling, and other forms of recovery, while the removal is regarded as a last resort. Concrete preventive measures are, however, less manifest, while the rate of production of new electrical and electronic equipment is constantly increasing. According to the study of United Nation University, WEEE is expected to grow in 2018 with 21% worldwide, which is explained by increasing the amount of products sold and reducing the lifecycle of EEE (Date, 2015).

The best solution of the problem of the WEEE management is still far to be found both in Romania and in Europe. The increasing of recycling costs, while decreasing prices of material obtained mitigate legislative and administrative efforts in the collection.

However, educating consumers about the impact of increased consumption and the effects that lack of separate WEEE collection has on the environment can bear fruit in Romania so that people begin to sort waste and support actions for the collection and reuse of WEEE.

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INNOVATION – A EUROPEAN PRIORITY. ROMANIA’S CONDITION

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Abstract: *Each country’s development is ensured by the presence of some more or less significant entrepreneurs who can successfully cope with the competitive environment they operate in. In today’s highly dynamic and increasingly global economy, it is important for an entrepreneur to create competitive advantages not only by working on prices, but also by creating particular elements such as quality or innovation. Innovation is an often debated upon topic at micro- or macroeconomic, national, European or global levels, as supporting the process is a solution for increasing the profitability level of companies and ensuring the sustainable development of economies. Phenomena such as the globalization of markets, increasing competition, increasing the migration phenomenon, increasing unemployment, companies’ and also countries’ orientation to research and development are elements that have created new conditions for the manifestation of innovation, and also new arguments that generate the increase of amounts allocated to the innovation process. This paper is an exploratory research based on the qualitative method, by consulting various sources of information: specialized literature, case studies, media articles, reports of some related organizations, etc., aiming to highlight the stage of the innovation process in the EU member countries and Romania’s role in the innovation process.*

Key words: *innovation, economic development, competitive advantage, research-development.*

JEL Classification: *O30, O38.*

1. Approaches to Innovation

The current society characterized by the most diverse changes that affect different economic and social fields must find the most suitable solutions that will allow it to stay connected to the global economy. The emergence of new products on the market, the improvement of existing ones via the use of new technologies generate an increase of the interest in innovation. Innovation is manifested in all public or private, economic or social structures. At organizational level, the focus of management is on introducing new management methods, reorganizing or reconfiguring the business so that it can gain competitive advantages, especially when prices cannot act as a comparative advantage. At society level, innovation envisages strategies, policies, concepts that seek to solve social issues.

Innovation, a phenomenon with an important role for current economies through the generality and broad fields where it can operate (Tărășescu, 2008) targets the ability to assimilate and convert new knowledge in order to improve productivity and to create new products and services (Drăgănescu, 2002). In 1942, economist Joseph Schumpeter approached innovation highlighting its main components: “creating a product, introducing a new manufacturing method, entering a new market” (AGEPI, 2014).

Innovation generates the restructuring of economic sectors or even the emergence of new sectors of activity. Innovation has a variety of roles in a company which can mean (European Commission, 1995):

- renewing and expanding the range of products and services and of those associated with the market;
- setting new production, supply and distribution methods;
- introducing changes in management, work organization and working conditions, and workforce skills.

In 1992, the Organization for Economic Cooperation and Development created the Oslo Manual in a partnership with the European Union and Eurostat, aiming at collecting

data on innovation in a system that offers their comparability. The 2005 edition identified the elements defining innovation in a company, namely:

- product innovation: envisages creating new products or improving existing ones;
- process innovation: refers to introducing new technologies or improving the working methods and equipment;
- marketing innovation: aims at introducing new marketing methods or generating change in the packaging, distribution or promotion of a product;
- organizational innovation: involves introducing new methods of organizing a company's business.

According to Kotsemir and others, the typology of innovation varies from classical forms: product innovation, process innovation, service innovation to new types of innovation where one can find “frugal innovation, red ocean innovation, organic innovation and other numerous – and in many case “very exotic” from the point of view of a strict terminology –types of innovation” (Kotsemir et al., 2013, p.26). The authors also identified other forms of innovation: strong or weak innovation, open or closed innovation, incremental or radical innovation, etc. Popescu M. (2016, p.16) defines incremental innovation as an improvement of existing products and processes in response to the market whereas radical innovation aims at introducing truly new solutions based on inventions.

Irrespective of its ways of manifestation, innovation is a tool that uses different resources to render value by changing their use (Drucker, 2000).

2. European Concerns with Innovation

Edler J. (2013) shows that defining coherent policies regarding innovation requires ensuring an appropriate framework for future generations. This opinion can be used as an argument to support the European Union's attempts to provide a framework to deal with non-Community goods, services and technologies.

Thus, three strategic priorities in the field of innovation have been defined at Union level (European Commission, 2016):

- *Open innovation* - is an initiative meant to involve a large number of players by defining an innovation-friendly regulatory system and supporting innovative enterprises to access the funds needed for their investment. The initiative aims to create products and services that embody the results of the innovation process and also the trading of technologies created by European researchers, as the most important source of innovation is technical and technological development (Bodog et al., 2006).
- *Open science* – aimed at creating computer systems designed to enable the interconnection of scientists. More precisely, the European Commission aims at creating a cloud to connect 1.7 million researchers and 70 million professionals.
- *Openness to the world* - an initiative aimed at developing international cooperation of researchers and innovators in the most diverse fields: from economics to environmental, water, food, diplomacy issues.

Innovation regarded as a process that allows transforming ideas into reality (Antonescu, 2015) is the focus of the Europe 2020 Strategy (Enache and Morozan, 2013).

Europe 2020, a strategy adopted in 2010 for a 10-year horizon (Șerbănică and Puiu, 2016), continues the flagship initiatives of the Lisbon Agenda and defines as priorities: smart, sustainable growth favourable to inclusion. The pilot programmes aimed at achieving the strategic priorities envisage innovation; education; digital society; climate changes, energy and mobility; competitiveness; employment and reduction of poverty. In terms of initiative, **innovation**, the set target is to allocate 3% of the GDP to R&D

activities. Achieving that target has generated the creation of the “Innovation Union” initiative. Specifically, the initiative aims at performing investment in education, research, development, innovation and ICT; creating strategies to ensure return on investment; adapting the educational system especially higher education to the requirements of modern society by increasing the level of skills and attracting talents; ensuring cooperation among people that work in the fields of research and innovation, better exploiting the EU funds allocated to this segment, reducing barriers for innovative enterprises (European Commission, 2010).

Achieving the priorities defined by the “Innovation Union” initiative has generated the definition at EU level of the Horizon 2020 funding instrument for research and innovation programmes that can provide funding of 80 billion Euros for the period 2014-2020.

The main programmes that provide funding under HORIZON 2020 are:

- Scientific Excellence (24.4 billion Euros) – to fund actions such as border research; actions to strengthen the careers of young researchers or of those with expertise; future and emerging technologies or world-class infrastructure;
- Industry leadership (17 billion Euros) - promoting investment in technologies;
- Societal challenges (29.7 billion Euros) - promoting investment in research and innovation in fields that have a major impact on citizens’ lives (e.g. health, food security, energy, etc.);
- Spreading excellence and expanding participation (24.4 billion Euros) – aiming to reduce existing disparities at EU level in the field of innovation by building and properly exploiting the potential of talent reserves;
- Science with and for society;
- Euratom, etc.

All the programmes defined by the “Innovation Union” initiative aim to fund:

- Research and innovation actions;
- Actions aimed at ensuring cooperation and networking within the programmes and projects on research and innovation.

The need to monitor progress in terms of innovation has generated the creation of two instruments: the European Innovation Scoreboard (EIS) and the Regional Innovation Scoreboard (RIS). The EIS seeks to provide a detailed picture of innovation performance reported by member states while the RIS addresses only regional elements focusing on the performance reported by small and medium enterprises.

In the year 2017, the Regional Innovation Scoreboard (RIS) provided a general ranking of innovation leaders: Sweden, Denmark, Finland, the Netherlands, the United Kingdom (European Commission, 2017). The RIS also encompasses innovative regions by fields, namely:

- Denmark - human resources and innovation-friendly environment;
- Luxembourg - attractive and active research systems of an intellectual nature;
- Finland - funding and support;
- Germany – investment of companies;
- Ireland - innovation in SME’s and impact on employment;
- Belgium - innovation networks and collaboration;
- United Kingdom - effects on sales.

In order to capture the phenomenon of innovation, EUROSTAT has released information on the share of development related expenditure in the GDP. The data indicate

an average of 2.03% of the GDP allocated for research and development in 2016 in the EU-28, 2.19% for Euro zone countries. The countries with the largest amounts are: Sweden 3.25%, Austria 3.09%; Germany 2.94%; Denmark 2.87%; Belgium 2.49%. (Figure 1)

One can notice the increasing interest shown in the European Union in ensuring the framework, mechanisms and instruments that will generate innovative actions and activities which can ensure a competitive growth of the European economy.

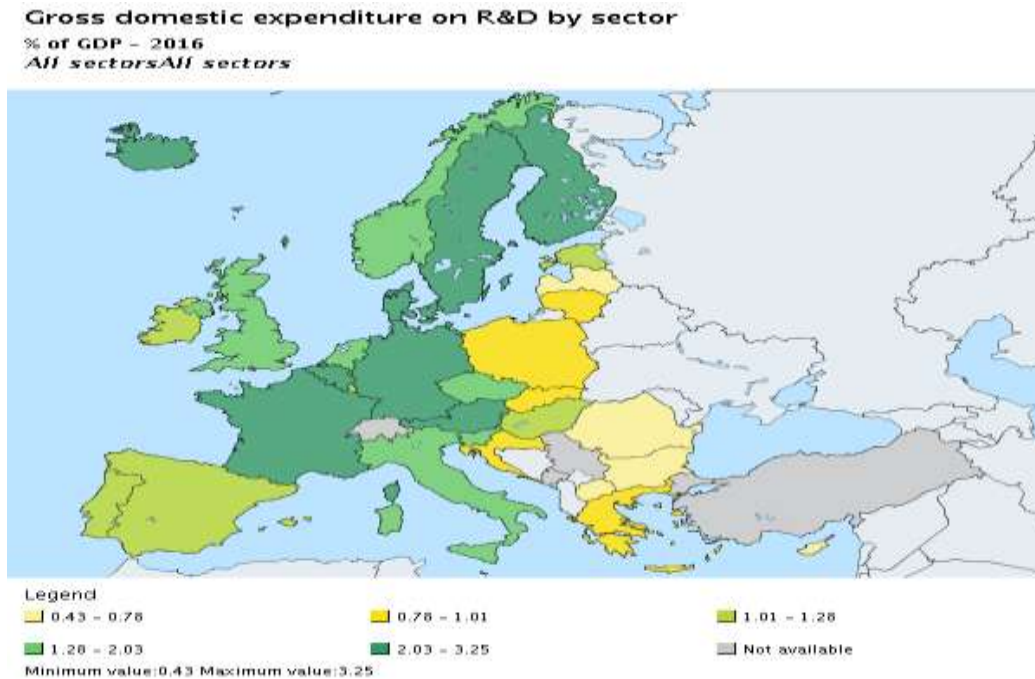


Figure no. 1. Share of Research and Development Expenditure in GDP

Source: <http://ec.europa.eu/eurostat/data/database>

3. Issues Regarding Innovation in Romania

Innovation in Romania is defined as the creation of a new product, service or process, or one that is significantly improved, including production or construction processes, new marketing methods or new organizational methods in the trading activity, workplace organization or external relations of an organization among others, in order to help address societal challenges or to support the Europe 2020 Strategy for smart, green and inclusive growth.

Also, the National R&D and Innovation Plan for the period 2015-2020 defines innovation as “the implementation of a new or substantially improved product, service or process, or of a new marketing or business method in practical work, in workplace organization or external relations” (Government Decision 583/2015). At the strategic level for the 2014-2020 horizon, the National Strategy for Research, Development and Innovation 2014-2020 has been created aiming to make Romania a competitive economy, its basis being defined by the existence of an innovation system that creates added value.

The strategy has identified three main pillars that aim to achieve the strategic vision: the development of innovative companies, the internationalization of the RDI sector, regional leadership. Strategic targets have also been set to ensure convergence with the EU average (Table no. 1).

Table no. 1. Strategic Targets of Innovation in Romania

Number	Indicator	Target
<i>Public sector</i>		
1.	Public Expenditure on Research and Development (% of GDP)	1%
2.	Number of Ph.D. graduates per 1000 inhabitants aged 25-34	1.5
3.	Number of researchers in the public sector	17,000
4.	Scientific publications in top 10 most cited publications in the world (% of total scientific publications in the country)	7
5.	International scientific co-publications per 1 million inhabitants	300
6.	Risk capital (% of the GDP)	0.09
<i>Encouraging the private sector</i>		
7.	R & D expenditure of the business sector (% of GDP)	1
8.	Number of researchers in the private sector (full-time equivalent)	14,500
9.	Public-private co-publications (number/1 million inhabitants)	16
10.	Innovative SME's collaborating with others (%)	6
11.	EPO patent applications (number/year)	120
12.	USTPO patent applications (number/year)	60
13.	Community trademark applications (number/1 billion GDP adjusted to purchasing power parity)	4
<i>Economic impact economic</i>		
14.	Fast growing innovative companies (number)	150
15.	SME's introducing innovative products or services (%)	20
16.	Revenues from foreign licenses and patents (% of GDP)	0.17

Source: Government Decision no. 929/2014 of 21 October 2014 on the approval of the 2014-2020 National Strategy for Research, Development and Innovation.

The strategy also lays down the authorities responsible for coordinating and linking research/development/innovation policies:

- The Ministry of Research and Innovation defined as the state authority for research and development whose responsibility is to draw up strategic objectives and specific policies;
- The National Council for Science, Technology and Innovation Policy (CNPSTI), a government advisory body that ensures the coordination and correlation of specific policies;
- Advisory bodies;
- Operational bodies.

The strategy and policies defined at national level must be fulfilled and achieved in order to allow Romania to overcome the condition of a low innovation level country as shown in the Community Innovation Scoreboard (Figure no. 2). The score reported by Romania is below the European average in all categories, so that in the year 2016 there is a 14% decrease compared to 2010. The categories that have negative changes are: Innovators, Firm investments, and Finance and support, whereas Innovation-friendly environment, Sales impacts, and Human resources have reported positive but not so high changes to cover declines.

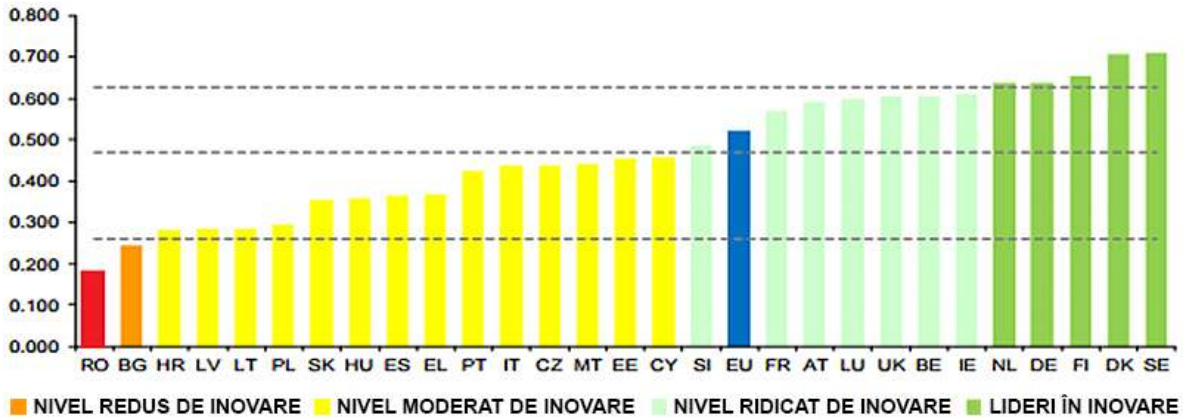


Figure no. 2. Level of Innovation in EU Countries, 2016

Romania should regard innovation as a way to increase the value of indigenous companies and products. Ensuring the funds needed to finance the innovation activity is the main factor in increasing the level of innovation and removing Romania from the category of countries with a low level of innovation.

4. Conclusions

Today, innovation is an element that can give companies the opportunity to increase their performance by creating a competitive advantage, therefore it is necessary to build systems that will generate the proper functioning of the Romanian economy and society.

Ensuring a climate that can enable enterprises to become innovative depends on the implementation of all the strategies and policies defined by Romania in this field. There is also a need for greater visibility of objectives and of funding opportunities for innovation actions.

The paper has aimed to highlight the main European and national objectives regarding innovation, and future research will capture the influence of all factors and elements that define innovation on Romania's economic development.

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WASTE MANAGEMENT IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract: *This paper presents the results of research concerning waste management system as one of the strategic goals of sustainable development. Waste can be both a resource and an environmental problem. Our strategic goal is to make waste a resource. Nowadays we have global trend to reduce, re-use, rework, recycle, recover, so-called 'waste' products. One company's waste or even one person's waste can now become another company's (person's) valuable raw material. And it has an economic impact. Also, with changing technologies, availability and cost of origin input materials, the demand for, or need to use recovered wastes is changing too. In order to promote sustainability with regard to waste management, appropriate waste solutions must be put in place. However, perspective on the area of waste is required to attain sustainable waste management. Various measures that reduce the volumes of waste streams according to the hierarchy for different methods of treatment are required. Recycled raw materials saves energy compared with the use of new raw material. Each opportunity we have to reduce our impacts on the planet is a step forward towards the implementation of sustainable development. And we can defy improving waste management as one of the main goals for sustainable development.*

Keywords: *Waste, sustainability, recycling, strategy, sustainable development.*

JEL Classification: *Q2, Q5, F6.*

1. Introduction

This paper presents the results concerning personal research of the situation of municipal solid waste management, relative to EU requirements. The aim of this research is to understand the environmental effectiveness of the solid waste management. Data were collected personally from different organizations.

This paper is the continuation of a series of publications presents waste management and its vitality for global sustainable development. Among these publications is the paper “The improvement of waste management system in the Republic of Belarus”.

In the context of sustainable development, waste management is an activity that shapes the environmental protection. Sustainability has become the model of development adopted at international level, whereby both organizations and people act in accordance with the principles and its amendments. Since past centuries that is seeking reconciliation between economy and ecology and until present, the concept of sustainable development was shaped by the various interpretations. Currently most organizations associate sustainable development with environmental protection and with actions related to society. Environmental concerns are still intense. Organizations and municipalities develop intensive activities in this direction. Together with measures to reduce waste, waste management contributes significantly to the achievement of sustainable development. This activity of waste management is complex and differently solved in European Union (EU). This paper analyzes the situation of waste management solutions in correlation with international provisions. Research are structured in various directions: the waste management definition, importance of waste management for sustainable development, international and EU experience. The paper ends with conclusions and future research directions.

2. Waste: past and present

Waste has always been a natural part of past ecosystems. Waste has always existed, and it has been generated by all living beings on the Earth. However, nothing was wasted in the natural system that is characterized by ecological harmony and circulation. Waste

was naturally transformed into a useful organic resource for other organisms in the circular process of the nature. Humans generated waste daily in the past, as we do today. Before the Industrial Revolution, people produced organic waste, as explained above. People created, and consumed items from nature, which would degrade naturally when the items became waste. Organic waste was used in various ways, such as a fertilizer. Also, people sold or exchanged an unwanted item in the market, when they no longer wanted it. Solid waste disposal and management is both an urban and rural problem. Every person is a potential generator of waste and thus a contributor to this problem (Adams, 2001).

Waste has become a serious social and environmental issue, qualifying now as a waste crisis.

For the understanding of the topic, author gives the description of waste, it depends on many factors.

Table no. 1. Classify different types of waste. Waste description.

Waste description	
the waste classification code, also referred to as LoW (List of Waste) or EWC (European Waste Catalogue)	
whether it's hazardous	
the type of premises or business where the waste was produced	
the name of the substance or substances	
the process that produced the waste	
a chemical and physical analysis	
any special problems, requirements or knowledge related to the waste	

Source: Gov.UK

3. Waste management policy and measures

According to explanations waste management or waste disposal are all the activities and actions required to manage waste from its inception to its final disposal. This includes amongst other things collection, transport, treatment and disposal of waste together with monitoring and regulation. It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance on recycling.

Waste management is a complicated issue that involves a variety of political, social, economic, technical, and environmental factors. Framework are generated to demonstrate their economic, environmental and social impact. Management of municipal solid waste (MSW) is a constant challenge around the world.

Nowadays EU waste management policy includes a range of measures across all 5 tiers namely, prevention and minimization, reuse, recycling, recovery and disposal. In Europe, waste is increasingly being used to produce both materials and energy, and recycling now saves more greenhouses gases than it generates. However, many developing and emerging countries are faced with the major challenge of improving their inadequate and unsustainable waste management systems. Waste must no longer be deposited in residential areas and uncontrolled landfills or end up on illegal rubbish tips and in waterways. Around 476 kilogrammes per person of municipal waste were generated in the European Union (EU) in 2015, with a significant portion – around one-third of all municipal waste in 2012 – still being disposed of in landfills. To manage waste as a resource, instead of as a problem, the waste industry will have to become a key partner of businesses operating in the circular economy. This means a transition from the "collect and dispose" method of waste management to prevention and maximising both the value and volume of resources within the economy. A new study published by the Scientific Foresight Unit of the European Parliament's Science and Technology Options Assessment (STOA) assesses the role of five waste streams – municipal waste, packaging waste, food

waste, bio-waste and critical raw materials – in the transition towards a circular economy in the municipalities and Member States of the EU. It examines the current policy landscape, trends, technologies, employment opportunities and future policy options for the EU. The analysis shows, amongst others, that half of the 28 Member States currently landfill more than 50 per cent of their municipal waste, while six Member States have met the 2030 target of no more than 10 per cent of municipal waste landfilled.

According to the World Bank's estimations, in 2012 world cities annually produce approximately 1.3 billion tons of solid waste (World Bank, 2018). With rapid population growth and urbanization, municipal waste generation is expected to rise to 2.2 billion tonnes by 2025.

Managing waste properly is essential for building sustainable and livable cities, but it remains a challenge for many developing countries and cities. Effective waste management is expensive, often comprising 20-50% of municipal budgets. Operating this essential municipal service requires integrated systems that are efficient, sustainable, and socially supported (Chambers, 1994).

In my opinion, for local and national administrations, the costs associated with waste management are considerable. In order to reduce these costs or meet them in a way that is effective and socially responsible, they must first be made transparent. In addition to the traditional approaches to financing, such as fee systems, the advisory project is increasingly developing economic incentive systems to avoid or recycle waste. The focus here is on concepts such as product taxation, deposit systems or user charges (Bekin and Carrigan, 2007; Russell, 1988; Chambers, 1994).

Author has made the analysis of international companies' experience and concludes that: in recent years, waste disposal companies have increasingly been offering partners in developing and emerging countries technologies for recovering energy from waste, based in part on their potential for climate change mitigation. The project supports decision-makers in selecting adapted waste-to-energy technology and evaluating product offers.

In my opinion, this waste crisis has resulted from these three following factors: technological advances, mass consumption, and changes of people's practices in consumption and waste disposal behavior.

4. Sustainable development goals correlating with waste

Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs (Sachs, 2015).

At the environmental level, sustainability prevents nature from being used as an inexhaustible source of resources and ensures its protection and rational use. Aspects such as environmental conservation, investment in renewable energies, saving water, supporting sustainable mobility, and innovation in sustainable construction and architecture, contribute to achieving this environmental sustainability on several fronts. Successful waste management plays an important role at the environmental level.

On 25th September 2015 the United Nations will announce the sustainable development goals (SDGs), a set of goals that aim to make our planet fair, healthy and sustainable by 2030 (United Nations, 2018).

The main goals are:

- Eradicate poverty and hunger, guaranteeing a healthy life;
- Universalize access to basic services such as water, sanitation and sustainable energy;
- Support the generation of development opportunities through inclusive education and decent work;

- Foster innovation and resilient infrastructure, creating communities and cities able to produce and consume sustainably;
- Reduce inequality in the world, especially that concerning gender;
- Care for the environment combating climate change and protecting the oceans and land ecosystems;
- Promote collaboration between different social agents to create an environment of peace and sustainable development.

So sustainable development is one of the main goals of the United Nations. Waste management is one of the main aspects of sustainable development. In that case, waste management is one of the main goal of the United Nations. And sustainability is the foundation for today's leading global framework for international cooperation.

In my opinion, for the goals to be reached, everyone needs to do their part: governments, the private sector, civil society and people.

Despite the superiority of waste prevention, the amount of research on the subject is relatively limited in comparison to other topics in waste management. When it comes to waste management at a global scale, attention is mostly focused on establishing improved waste management system in developing countries, such as collecting and delivering waste to designated locations under a municipality's authority and international cooperation. With regard to the strengths of governance networks, they appear to be a promising way to govern in politics or public administration (Sachs, 2015; Adams, 2001; Bekin and Carrigan, 2007; Russell, 1988).

5. Zero waste cities. Challenges and opportunities

Zero waste and sustainable materials management (SMM) are two ways of reframing the process of waste management, by envisioning waste as potentially useful material. At this point, zero waste is an aspirational goal, and while many cities are working towards it, they must dispose of their waste somehow before they get there

The European Union imposes strict operating conditions and technical requirements on waste incineration plants and waste co-incineration plants to prevent or reduce air, water and soil pollution caused by the incineration or co-incineration of waste. The directive requires a permit for incineration and co-incineration plants, and emission limits are introduced for certain pollutants released to air or to water (Municipal Waste Europe, 2016).

In 2015, the European Commission released *Closing the loop – An EU action plan for the circular economy* (EU, 2015). This action plan focuses on “the circular economy,” the life cycle of materials, and the transition to a more sustainable business model. From this perspective, the plan formulates a long-term strategy of increasing source reduction and recycling, changing mindsets around how waste is discarded, and increasing efficiency in the overall waste management system.

Zero Waste Europe, an organization aimed at redesigning how European nations manage and think about waste, praised the European Commission for releasing these reports that focus on reframing waste in Europe and view the larger picture when it comes to materials management (Zero Waste Europe, 2017).

In this topic we can define certain terms related to WTEFs (Russell, 1988):

- Energy recovery from waste is the conversion of non-recyclable waste materials into useable heat, electricity, or fuel through a variety of processes, including combustion, gasification, pyrolyzation, anaerobic digestion, and landfill gas (LFG) recovery. This process is often called waste-to-energy (WTE). Converting non-recyclable waste materials into electricity and heat generates a renewable energy source and reduces carbon emissions by offsetting the need for

energy from fossil sources and reduces methane generation from landfills. After energy is recovered, approximately ten percent of the volume remains as ash, which is generally sent to a landfill.

- Incineration means the controlled process which combustible solid, liquid, or gaseous wastes are burned and changed into noncombustible gases.

- Incinerator means a facility consisting of one or more furnaces in which wastes are burned.

Table no. 2. Classify WTEFs terms

WTEFs terms:
Energy recovery from waste
Incineration
Incinerator

Source: The World Bank

But, despite the promises of reducing emissions and increasing jobs, zero waste policy goals can be difficult to achieve. Some of the challenges for zero waste include short term thinking of producers and consumers.

Therefore, it is imperative that municipalities consider both the barriers and opportunities within zero waste policies to ensure that economic, social, and equity concerns are met.

6. Conclusions

The authors conclude that reliable, consistent and harmonised data is needed to better monitor and compare the state of waste management and progress towards a circular economy across and within EU Member States. Policy makers may provide stronger clarity on definitions as well as support further research toward development of a monitoring system including future modelling assessments taking wider social, environmental and economic indicators into account.

Waste management is connected with many other areas, affecting sustainable development, including urban development, water, energy and food security. It takes into consideration the environmental, social and economic aspects of waste management.

I would say, that without good solid waste management is hardly to built a sustainable and livable area.

Becoming part of the solution or problem, dilemma for people and duties of municipalities. To maintain a control over any type of waste, municipalities are playing a key for waste management. Waste is created by human and when people are aware of the affects if the waste, they will have to make a choice whether they will be part of the solution or keep on making things worse. So municipalities are becoming to manage a valuable resource if they manage to collect them properly.

Even if a city can reach a "zero waste-to-landfill" goal, there will always be some waste left.

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THE EXPLOITATION AND MAINTENANCE OF COMPUTER SYSTEM IN SCHOOLS AT PRIMARY AND SECONDARY LEVEL

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Abstract: This paper presents the concept of computer system and the need for its maintenance by a specialist in the field. The theoretical part describes the concept of computer system, outlines the role of the responsible person in this activity, and within the second part (the case study) it is realized a direct, quantitative research, an inquiry applied to human resources from two of our school units in Dambovita county. It has been assumed that the inappropriate use of computers can lead to a physical wear and tear, and this will overcome the school results obtained by students and teachers.

Key-words: computer, system, school, maintenance.

JEL Classification: L86, C88.

1. Information system

An information system is a software component that captures, sends, stores, retrieves or displays information, thus supporting people, organizations or other components.

If the information systems are not properly maintained, the quality of the services provided to customers or service users, may be considered poor. Their maintenance can be achieved by system control, reliability and participation of specialists in the field (Butler and Gray, 2006). The role of the computer system maintenance staff is to support information systems, desktops and peripheral elements. This includes installing, diagnosing, repairing, maintaining and upgrading all the equipment, while ensuring performance optimization (Ray, 2008).

There are several types of ways to maintain the information systems (Bokhari, 2010):

1. Corrective maintenance: the set of tasks is intended to correct the defects that occur in different equipment and which are communicated to the maintenance department by the users of the same equipment.
2. Preventive maintenance: Its mission is to maintain a certain level of quality, to program the interventions.
3. Predictive maintenance: continuously seeks to know and to report the state and the operational capacity of installations, knowing the values of certain variables.
4. Periodical maintenance, is the basic stage of the equipment maintenance.

2. Case study- the perception of human resources in primary and secondary school units over the information system

The main aim of the research is to provide information on how respondents perceive the information system.

Objectives:

- O1: Knowing how is carried out the maintenance activity of a computer system.
- O2: Identifying the number of computers in school units.
- O3: Observing the period of computer systems maintenance.

Hypotheses:

H1: Many of the respondents specified the fact that there is a specialist in computer system maintenance at the level of the school unit.

H2: Most of the respondents said that keeping the information system in operation aims putting the computer in an operational state.

H3: In the opinion of a small percentage of the respondents, the development of information systems is an expensive process.

From the sample surveyed are 30 respondents, teachers in two primary and secondary school units in Dâmbovița County. The questionnaire consists of questions with one answer.

The interpretation of results

The interpretation of results takes place on the two sections of the questionnaire.

Section 1. Information system

Question 1. Please express your opinion related to the following statements:

1.1. The activity of exploiting the information system is carried out according to a manual.

Table 1. Performing the exploitation activity

Answer	Number
Totally agree	10
Agree	5
Neutral	15
Disagree	0
Totally disagree	0

The criterion score = $(10*5+5*4+15*3) / 30$, a score of 1.15 showing an attitude of agreement to the statement.

1.2. The maintenance of the information system begins with the installation of the program.

Table 2. Maintenance of the information system

Answer	Number
Totally agree	5
Agree	5
Neutral	20
Disagree	0
Totally disagree	0

The score of the criterion = $(5*5+5*4+20*3) / 30$, a score of 1.05 showing an attitude of agreement to the statement.

1.3. Maintaining in function the information system aims putting the computer into an operational state.

Table 3. Maintaining the information system in function

Answer	Number
Totally agree	20
Agree	5
Neutral	5
Disagree	0
Totally disagree	0

The criterion score = $(20*5+5*4+5*3) / 30$, a score of 1.35 showing an attitude of agreement to the statement.

1.4. The maintenance period of an information system is of over 5 years.

Table 4. Maintenance period

Answer	Number
Totally agree	-
Agree	5
Neutral	25
Disagree	0
Totally disagree	0

The criterion score = $(0*5+5*4+25*3) / 30$, a result of 0.95 showing an attitude of agreement to the statement.

1.5. Corrective maintenance consists in making the necessary repairs.

Table 5. Corrective maintenance

Answer	Number
Totally agree	10
Agree	10
Neutral	10
Disagree	0
Totally disagree	0

The criterion score = $(10*5+10*4+10*3) / 30$, a result of 1.20 showing an attitude of agreement to the statement.

1.6. Preventive maintenance has the role of prevention.

Table 6. Maintenance of prevention

Answer	Number
Totally agree	10
Agree	10
Neutral	10
Disagree	0
Totally disagree	0

The criterion score = $(10*5+10*4+10*3) / 30$, a result of 1.20 showing an attitude of agreement to the statement.

1.7. Developing an information system is an expensive process

Table 7. Developing an information system

Answer	Number
Totally agree	20
Agree	10
Neutral	0
Disagree	0
Totally disagree	0

The score of the criterion = $(20 \cdot 5 + 10 \cdot 4) / 30$, a score of 1.40 showing an attitude of agreement to the statement.

Table 8. The score obtained by each statement

Statements	Score
1. The activity of exploiting the information system is carried out according to a manual.	1.15
2. The maintenance of the information system begins with the installation of the program.	1.05
3. Maintaining in function the information system aims putting the computer into an operational state.	1.35
4. The maintenance period of an information system is of over 5 years.	0.95
5. Corrective maintenance consists in making the necessary repairs.	1.2
6. Preventive maintenance has the role of prevention	1.2
7. Developing an information system is an expensive process.	1.4

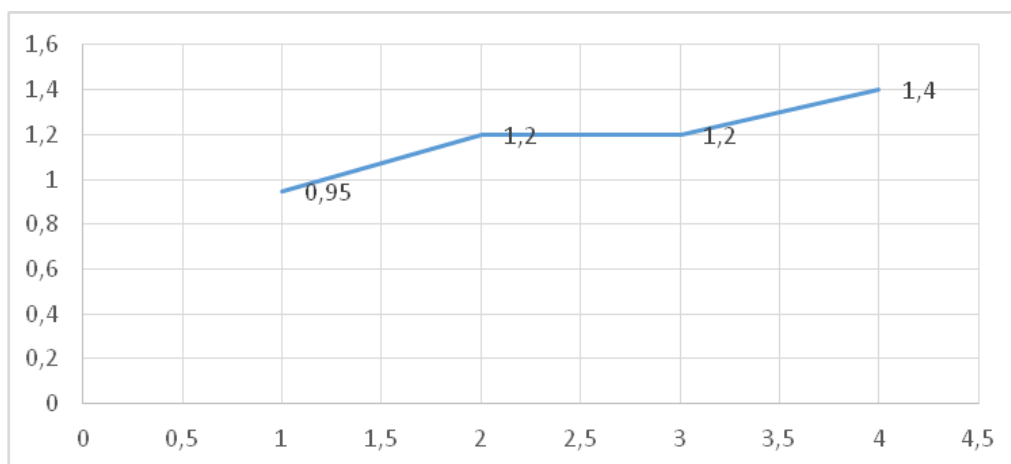


Figure 1. Graphical representation of the score

The highest score was obtained by the last statement. The overall score of the criterion is $= (1.4 + 1.2 + 1.2 + 0.95 + 1.25 + 1.05 + 1.15) / 7$, a score of 0.99 showing an attitude of agreement.

Question 2. The school unit where you work has a specialist in information system maintenance:

Table 9. The existence of the specialist

Answer	Percentage
<i>Yes</i>	80
<i>No</i>	20

2. Data of identification

Question 3. How many computers are there in your school unit?

Table 10. The number of computers

Answer	Percentage
<i>Up to 50</i>	50
<i>Between 50-100</i>	50
<i>Over 100</i>	
<i>I don't know</i>	0

Half of the respondents mentioned the fact that they have up to 50 computers, and the others said that they have between 50 and 100 computers.

Question 4. How many information labs are there in your school unit?

Table 11. The number of labs

Answer	Percentage
2	50
3	50
4	0
<i>More than 4</i>	0

A percentage of 50% of respondents said that there are 2 laboratories at the level of the school, and the rest stated that there are 3 laboratories.

3. Conclusions

The three objectives formulated in the methodology part of research have been achieved. The information system plays an important role in the activity of the school units, which is why the respondents appreciate the investments in its development. The first two hypotheses have been verified, and the latter one was not, because the development of information systems is perceived as a costly process.

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IDENTIFYING THE LEVEL OF CAPITALIZATION OF TOURIST POTENTIAL OF RURAL AREAS. CASE STUDY: VÂLCEA-ROMÂNIA

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Abstract: *The development of the tourism in Romania depends mainly on the proper use of the potential of the rural areas, on the development and on rural economy revitalisation and on the adoption of a coherent regional policy. The exploitation of natural resources to maintain the employments are extremely important, in order to meet the economic, environmental and social aspects of rural areas. This paper aims to emphasize some theoretical aspects of rural tourism, the methodology of estimating the rural tourism recovery degree, a presentation of the potential elements of the rural tourism recovery degree, causing them based on the estimated degree of the recovery of the rural tourism from Vâlcea-Romania. The degree of recovery of the touristic potential must stay at the concept of a sustainable development of economy which needs a multidisciplinary approach.*

Keywords: *rural tourism, touristic potential, exploitation.*

Jel Classification: *L83, Z32.*

1. Introduction

In tourism, a good starting point is the ambient environment. The landscapes, the forests, the lakes, the monuments of art, the architecture, historic sites, the ethnography and the folklore are environmental components. The more diverse are these resources, the greater their attraction will be, responding to various tourist motivations.

The structure of the tourism potential of any country is composed of touristic natural potential and the anthropic tourism potential (Iordache, 2013). The complexity of natural tourism potential and attractiveness are closely correlated with the particular topography and climate (Holden, 2008). Anthropic tourism potential of a touristic destination makes the human creations embodied in elements of culture, history, art and civilization, technical, economic and socio-demographic characteristics which attract flows of tourists.

As a consequence, the tourism potential can be defined like the total of elements which constitute the attractions and the facilities suitable for a visit and receiving guests (Smith, 1995). The tourism potential of a country, region or regions is essential to tourism development. Essential requirement that emerges is that this potential is better exploited through tour operators offer, supported by general infrastructure and tourism as developed (Getz and Sailor, 1993). Any successful tourism development, whether rural or not depends on economic, trade and logistics, such as product quality, accessibility and destination infrastructure and the investor's interest.

2. The research methodology

The research methodology is based on three main stages: identifying and selecting its literature, analysis of the evaluation of the factors that determine the tourist potential and determining the actual recovery of rural tourism (stage which involved the collection of data on the ground).

We selected literature on the content, focusing on elements like: the meaning of the term rural tourism, the manifestations and the development elements. After identifying and analyzing the conceptual framework, we phased methodology for estimating the degree of exploitation of rural tourism. In the third phase we have outlined the status of elements of

degree of recovery potential of rural tourism (tourism potential analysis, demand and tourism, infrastructure and general interest), causing them based on the estimated degree of recovery of rural tourism in the county Valcea.

We decided to use this methodology research in order to provide a qualitative picture of rural tourist destinations ,but also to generate a conceptual and practical framework that might be useful in this sector decision makers. It is very important to understand the effects of potential recovery both the development of rural destinations and the increasing competitive advantages of rural entrepreneurs and the implications on the growth of tourist flows.

3. The analisys of special literature

Rural tourism is an economic activity seen in the light that is part of the largest economic sector (tourism) and part of the economic base of rural settlements (Trevor, 2005; Kruger, 2005). At the same time it is a way to conserve natural and human qualities of a geographic area, an education and it increases the quality of life for those who practice this activity.

Defining rural tourism by introducing the notion of rural space is apparently very clear, but the variety of natural and socio-economic conditions, on mondial plan, leads to diverse application of the concept of rural area - linked to population density and buildings, the use of lands,the operating structures and the ownership structure and type of household or traditional structures of population (Glade et al., 1998; Daniel et al., 2005).

For the purpose of psychologists, the rural tourism is a special form of tourism in which the focus is on the human side. The tourist is considered as a true guest, friend and human contact (dialogue and exchange of impressions) is paramount. Tourists must respond to this ospitality with respect and consideration for the rural community (Garrod, Wornell and Youell, 2006).

Rural tourism is a form of tourism that provides a direct contact with the physical environment and human tourists in rural areas and provide them the opportunity to know and participate in the daily life of local people. Rural tourism has a strong cultural and educational vocation, and of particular importance for the preservation of values and cultural identity of rural communities (Williams and Ferguson, 2005; Daugstad, 2008).

All these essential elements become essential parts of rural tourism, provide him with specific dimensions: psychological -The rural tourism satisfies mainly the human's needs for rest and psychological and physical recovery potential, maintain health; Social - Rural tourism ensure the access of people from the urban enviornment to a word closer of the nature.; Geographical - Rural tourism allows access to beautiful landscapes and a rich biodiversity of flora and fauna; Urban - Rural tourism is based on specific spatial organization of rural areas (low density of population, households with specific architecture and important farmland and forestry).

Table no. 1. Definitions regarding rural tourism

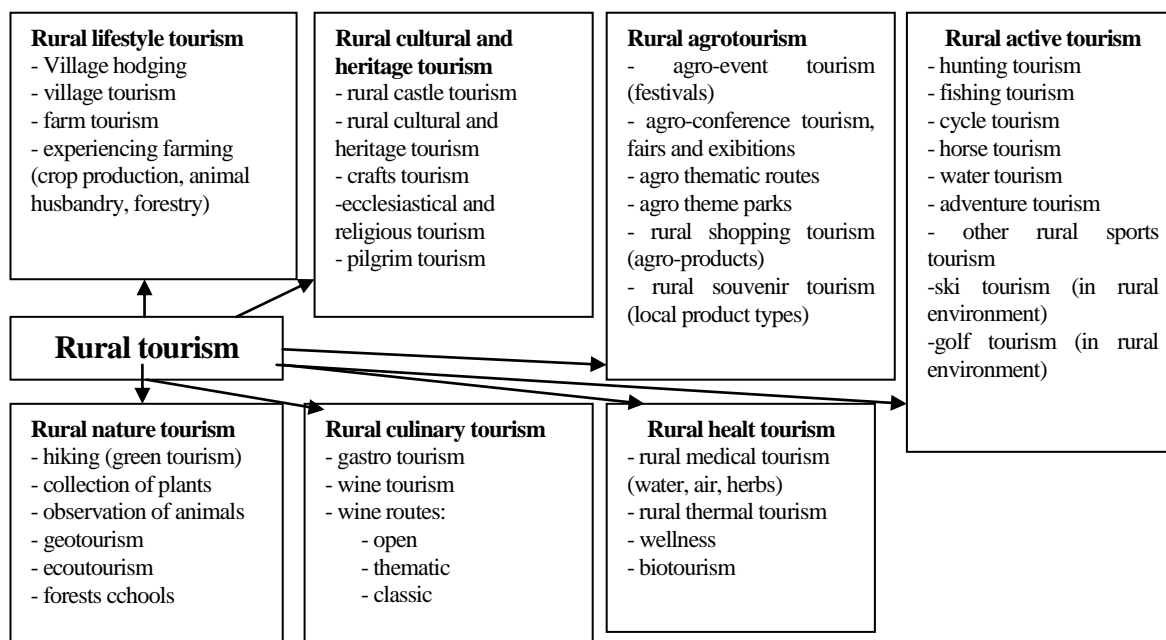
Urry, 1988	Creates individual carachteristic for the tourists product, assuring a diversification and high volatility of customers preferences
Fiquet et al., 1992	Tourist activities in the rural environment, to discover the nature, the local cultural environment or the gastronomy
Gannon, 1994	A series of activities, services and facilities furnished by the people from rural environment to attract tourists, in order to generate supplementary incomes
Oppermann, 1996	Tourism developed in rural space, excepting the national parks, the silvan zones or the savage areas
Barkin, 1996	Key of durable development of rural zones
Sharpley and Sharpley, 1997	Diversification form of the activity from rural space and of socio-economic regeneration

Tacu, Glăvan and Burciu, 2001	The art to receive the tourist in the rural environment
Ashley and Maxwell, 2001	Tourists movements in spaces where human settlements and infrastructure occupy just small spots of the landscape and where most of people spend the majority of their work time at farms
EuroGites, 2011	Accommodation in the traditional rural environment, offering experiences from gastronomy and life-style, and also activities developed in nature

Source: realized by authors

Rural tourism has many different forms and is wanted for various reasons. There are reasons to promote tourism development as a growth pole, such as regeneration following the collapse of agro-industrial, or business diversification in rural areas through the development of adventure tourism or cultural tourism. Furthermore, rural tourism keeps cultural depth in a world of increasingly permeated by the forces of globalization (Tanahashi, 2010).

Figure no. 2. Manifestation of rural tourism



Source: David et al., 2007.

This classification emphasizes that, irrespective of rural tourism practiced in principle two subjects are in focus (KNOWD, 1998):

- is practical in nature, through a variety of activities (sledding, horseback riding, hiking etc.), sports programs (cycling, climbing, rafting, horseback riding etc.) and relaxation or action learning (restoring health, walking in nature, observing animals, collecting herbs or mushroom picking etc.);
- is consumed in rural areas, tourist knows the rural culture, traditions and lifestyle, rural activities, farm around the house, the role of domestic animals, gastronomic specialties and, not least, the relationship between guest and host, which is unique.

4. The methodology for estimating the degree of exploitation of rural tourism potential

4.1. The inventory of natural and anthropic tourist resources

Setting the tourism potential of a territory or a particular administrative-territorial units is based on the following analysis: natural tourism resources, cultural heritage, technical and utility infrastructure, tourism specific infrastructure and environmental quality. In Romania, the tourism potential evaluation was conducted by the Ministry of Regional Development and Tourism in the National Spatial Plan (NSP) - Section VIII tourist areas.

A detailed analysis of the process of rural tourist potential of Romania exceed the scale in this paper. Methodologically, it is considered that the restriction of the analysis in the area of one of the 41 counties of Romania may allow basic knowledge of aspects that are characteristic of the complex process of recovery of the tourism potential of rural areas. The results of this analysis in the Valcea county may have a certain level of representativeness to the extent that this overall tourism development as expressed by the size of the tourism phenomenon (tourist traffic, basic accommodation), are ranked as three four orders size in the hierarchy of the 41 counties. It also highlights issues of representativeness of rural famous tourist destinations in Valcea county (Costești, Horezu, Malaia, Voineasa etc.). Leverage of existing tourism potential in the region Valcea may be restored as development time, using the levels and dynamics of main indicators characterizing achieved tourist services.

4.2. Analysis and classification of tourism potential of the area studied localities according to their potential for tourism development - involved identifying rural communities located in the area of Valcea county - from the database created in the NSP MDRT - Section VIII tourist areas and their classification according to the following criteria: landform preponderant awarded to natural tourism resources, tourism resources awarded to anthropogenic infrastructure scoring and scoring potential tourism development.

4.3. Analysis of tourism demand and supply in the studied area - comprised several stages: structural and dynamic analysis of county-level indicators of the main tourist infrastructure - tourist accommodation with functions of tourist accommodation; analysis of the main tourist traffic - arrivals, overnight stays, capacity utilization index of tourist accommodation service; qualitative analysis in the studied area of tourism products and agrotourism supply, consumption and quality of tourism and agrotourism and forms and institutional structures that deal with the promotion and enhancement of rural tourism.

4.4. Evaluation of rural tourism recovery

The methodology for estimating the degree of exploitation of rural tourism has several steps:

► *regrouping potential settlements on the following steps*: very high - scoring tourism development: ≥ 32 pts; high - scoring tourism development [22.32) section; medium - tourism development score: [12.22) section; Low - scoring tourism development: < 12 pct.

► *the establish equivalence coefficients tourism potential tourist* - score - the second step in calculating the degree of exploitation of rural tourism is the calculation of the coefficients of equivalence tourist - score of tourism potential that allows us to establish the number of tourists that point potential tourism development has the ability to attract at a joint. Calculation of coefficients representative of a county level is performed according to formula (1):

$$C_i = \frac{\sum(T_{j_i})}{\sum(P_{aj_i} + P_{bj_i})} = \frac{\sum(T_{j_i})}{\sum(P_{j_i})} \quad (1)$$

where T_{j_i} = number of tourists arriving in 2012 in rural county j_i

P_{aj_i} = score obtained for tourism resources (natural and anthropogenic) of j_i localities receiving tourists from the i county

P_{bj_i} = score obtained for infrastructure (tourist and technical) for j_i localities receiving tourists from the i county

P_{j_i} = the total development score obtained from the j_i localities which received tourists from the i county

C_i = coefficient of equivalence for the i county

i = county

j = village that received tourists in 2012

► *the use of equivalence factors tourist - score of tourism potential in estimating potential tourists in county.* Thus for each category of potential (low , medium , high , very high) , we used the formula:

$$Tek_i = \sum(Pk_i + C_i) \quad (2)$$

where Te_{k_i} = estimated number of tourists in county and in the k_i towns

PK_i = total score obtained for tourism development in the k_i counties

C_i = coefficient of equivalence for the county

k = village framed in a certain type of potential (low, medium, high, very high)

► *estimation of potential tourists each village in the county* was adjusted with average number of nights per county in the year 2012 obtaining the estimated number of nights :

$$Iek_i = Tek_i \times \frac{\sum I_{j_i}}{\sum T_{j_i}} \quad (3)$$

Where: Iek_i = estimated number of overnight stays in the county and municipalities k

Te_{k_i} = estimated number of tourists in the county and in the k_i towns

T_{j_i} = number of tourists arriving in 2012 in rural county j_i

I_{j_i} = number of overnight stays in 2012 in rural county j_i

► *establishment of the following premises:* occupancy and average number of days of operation remain unchanged from 2012; the accommodation rate is the average of existing tariffs in 2012 at the level of guest houses from the county;

► *the number of seats needed to cover the estimated number of nights:*

$$Lk_i = \frac{Iek_i}{Go_i \times Z_i} \quad (4)$$

where Lk_i = number of places required for the county and in the k_i towns

Iek_i = estimated number of overnight stays in the county and municipalities k

Go_i = average occupancy per county and in 2012

Z_i = average number of days of operation per county and in 2012

► *number of pensions needed to cover the estimated number of nights:*

$$Pensk_i = \frac{Lk_i}{D_i} \quad (5)$$

where $Pensk_i$ = number of hostels needed for the county and in the towns k

Lk_i = number of places required for the county in the k_i towns

D_i = the average size of pensions in the county in 2012

► *the recovery degree of rural tourism:*

$$G_i = \frac{CA_{j_i}}{CA_{k_i}} \times 100 = \frac{\sum I_{j_i} \times T_{m_i}}{\sum I_{ek_i} \times T_{m_i}} \times 100 \quad (6)$$

where G_i = leverage of rural tourism

CA_{j_i} = estimated turnover for 2012 for the county and in the j towns

CA_{k_i} = turnover estimated for the county and in the k towns

I_{j_i} = number of overnight stays for the i county and in the j towns

I_{ek_i} = estimated number of overnight stays in the county and municipalities k

T_{m_i} = County i average price

5. Results and discussions

5.1. The natural tourism potential in the county of Valcea

To capture the potential of tourism in this area, we started from NSP - Section VIII tourist areas, supported by MDRT, strategic document guiding character, which determines the size, purpose and priorities of developing settlements in the territory of Romania, in agreement with all European requirements. MDRT proposed methodology, in terms of natural tourism potential takes into account the natural (relief, geomorphology, vegetation, fauna, hydrography, landscape), natural therapeutic agents (mineral waters, therapeutic lakes, bioclimate etc.) and natural areas (biosphere reserves, national parks, nature parks, reserves and other natural monuments). Based on various criteria, for the natural environment were given scores from 1 to 10 pts., for more than 10 therapeutic factors section and for protected areas up to 5 points.

After applying the methodology for classification of tourism potential of MDRT, we further classified rural settlements based on natural tourism resources in each area, the type of relief in falling (16.67 % of localities are in the plain area, 66.66% in the hill and 16.67 % in the mountains) and the scoring of MDRT (Table no. 2).

Table no. 2. Distribution of municipalities according to landform and natural tourism potential in Valcea

	Plain	Hill	Mountain	TOTAL	%
<= 5.0 points	0	2	0	2	3,34
(5,7] points	9	33	0	42	70,00
(7,8] points	0	3	2	5	8,33
(8,10] points	1	2	2	5	8,33
>10 points	0	0	6	6	10,00
TOTAL	10	40	10	60	100,00
%	16,67	66,66	16,67	100,00	

Source: Methodology for classification of tourism potential of MDRT

As we can see, in the lowlands are the most common places with tourism potential natural environment (9 villages) and only 1 with high potential the rest being localities with low potential. A naturally high tourism potential has the Lungesti common from the county, Valcea. In addition to plain relief of a unique beauty, its territory has two protected areas or forest Tisa Mare (mixed natural reserve of 50 hectares that preserve the natural habitat of the Pannonian forest *Quercus petraea* and *Carpinus betulus* (oak and hornbeam), secular oak specimens and rare species of shrub and fauna elements that require strict protection as a Long-eared owl, owl little owl, buzzard etc.) and Forest Silea (natural reserve 25 ha which preserves mixed oak and hornbeam natural habitat secular oak specimens and rare species of thorn and fauna elements that require strict protection as the

black stork etc.). In the hilly area, applying the same methodology, we identified two localities with high natural potential and the mountains are found in 8 locations with high natural tourism potential and very high. Localities Vaideeni and Titești from Valcea county were obtained for the natural local maximum clocking, other cities benefiting from some additional advantages, such as municipalities and Slătioara Stroești have direct access to the reserve of 10.5 ha called Pyramids of Slătioara (Stroești); Barbatesti comun and Costesti municipalities are part of the National Park Costești Vânturarița- Buila (smallest national park in Romania - 4000 ha) and in the second place the Bat Cave (the cave houses two churches, one in 1633 and one in 1637); Mălaia village has its territory and Forest Iezearul Latorița Latorița; Voineasa village has potential of 15 pts. With many tourist attractions (Căldarea Galcescu, reserves Miru-Bora, Sterpu-Black Hill, Cristești and juniper trees Stricatul).

5.2. The anthropogenic touristic potential of Valcea county

The MDRT proposed by the methodology, in terms of tourism potential anthropogenic consider historical monuments (monuments, archaeological sites and architectural monuments, public monuments and memorials, funeral), museums and public collections (museums and public collections monument) manifestations of art and folk tradition (celebrations, festivals, fairs, social evenings, holidays, traditional folk crafts - fabrics, carpets, costumes, wood and glass paintings, engravings, wood, metal, stone, leather), performances and institutes concerts, cultural events etc. Based on various criteria, for the anthropic were given scores from 1 to 25 pt. After applying the methodology for classification of tourism potential of MDRT, we further classified rural settlements, depending on anthropogenic tourism resources in each area, the type of relief in falling (21.05% of localities are in area plain 42.11% in the hill and 36.84% in the mountains) and the scoring of MDRT (Table no. 3).

Table no. 3. Distribution of municipalities according to landform and anthropic tourism potetial in Valcea

	Plain	Hill	Mountain	TOTAL	%
<= 5.0 points	2	3	2	7	36.8
(5,8] points	1	4	2	7	36.8
(8,16] points	1	1	3	5	26.4
>16 points	0	0	0	0	0.0
TOTAL	4	8	7	19	100
%	21.05	42.11	36.84	100	

Source: Methodology for classification of tourism potential of MDRT

The development and the promotion of tourism is not only depending on natural resources of each area, but also of the degree of development of tourism infrastructure and technology. To do this, we need to analyze the current state and the potential infrastructure, taking into account: accommodation, treatment facilities, conference rooms, exhibition centers, ski slopes and lift facilities and other leisure facilities (golf , water sports , horses); accessibility to transport infrastructure, telecommunications and utilities.

5.3. Tourist specific infrastructure in rural areas of Valcea county

Analysis of tourism infrastructure in Valcea county was based on available data from the National Statistics Institute on municipalities and counties. Statistical database has been processed to meet the need for analysis of tourism in rural areas, by grouping statistical information available for Valcea County, according to the classification by residential localities (Table no. 4). INS processing data on tourist activity in the following localities in Valcea County - 10 communes: Bărbătești, Bujoreni, Costești, Măciuca, Mihăești, Slătioara, Tomșani, Vlădești, Voineasa.

Table no. 4. Analysis of tourist accommodation structures in Valcea County

	2010	2011	2012	2013	2014	2015
No. of touristic and agrotouristic pensions	2	9	1	6	8	2
Average no. of accommodations/pension	4.7	4.4	4.4	5.1	5.2	5.2
No. of accommodations offered per county	70	63	79	45	82	91
Equivalent no. of accommodations in function 365 days/year per county	0101	7072	69042	56036	92653	79982
No. of function days average/accommodation	27.9	72.4	92.3	303	31.8	53.4

Source: INS and processing author

I want to emphasize at first that the data collected by INS don't cover all and they provide a clear picture of rural tourism. Thus, in 2015, the county, although recorded 78 common, 60 have tourism potential, INS collect only 10 rural settlements. On the other hand, the data do not take into account agro tourist pensions and more than 5 seats and on the other hand are not taken into consideration only those allowances or pensions respond to requests INS data collection .

5.4. The analysis of tourist traffic indicators

Tourist traffic analysis is crucial to understand the degree of opening to the the needs of tourists from Valcea county then. Tourist traffic indicators (Table no. 5) were collected by INS at boarding houses and agrotourism in the 10 municipalities in Valcea (Bărbătești, Bujoreni, Costesti, Mălaia, Maciuca, Mihăești, Slătioara, Vlădești, Voineasa, Tomșani).

Table no. 5. Evolution of tourist traffic in Valcea County

	2010	2011	2012	2013	2014	2015
Number accommodations-days	2376073	2664215	2859053	3377184	3299794	3375784
Number accommodations-days – touristic and agrotouristic pensions – rural environment	60101	97072	169042	256036	292653	279982
No. of tourists - Vâlcea County	184264	225997	206963	211053	229237	286892
Number of tourists - pensiuni touristic and agrotouristic pensions – rural environment	2582	4385	8351	10904	10894	13495
Number of nights - Vâlcea County	960520	1046532	1052577	1049399	1025927	1154057
Number of nights - touristic and agrotouristic pensions – rural environment	5741	11216	16973	21381	20571	25547
Occupancy rate (%) – Vâlcea County	40.42	39.28	36.82	31.07	31.09	34.19

Occupancy rate (%) - touristic and agrotouristic pensions – rural environment – Vâlcea County	9.55	11.55	10.04	8.35	7.03	9.12
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Source: INS and processing author

The decrease in occupancy shows that rural tourism sector has not a tourist offer adapted to the customer's needs and that agro tourist pensions are not widely promoted so as to ensure an occupancy rate at least equal to that of Bucharest.

5.5. Analysis of technical infrastructure influencing tourism activity and potential

► Transport infrastructure in rural areas.

From the administratively point of view, Valcea County has 78 communes and 525 villages. But their access to public infrastructure is quite low, as is the pace of its development (Table no. 6).

Table no. 6. The transport infrastructure in 2015

		Railroad	Public roads-total	National roads	County and communal roads
TOTAL - ROMANIA	m	10770	86080	17606	68474
OLTENIA Region	m	990	11254	2179	9075
% Oltenia Region /Total country	%	9.2	13,1	12.4	13.3
Vâlcea	m	163	2325	529	1796
% Vâlcea/ Oltenia Region		16.5	20.7	24.3	19.8

Source: INS and processing author

But we must emphasize that the pace of modernization of county and municipal roads providing access to tourism infrastructure is quite low. Analysis of its evolution in the period 2010-2015, reveals the following (Table no. 7): in 2015 only 19.4 % of county and municipal roads were upgraded and 40.2 % were unpaved (gravel or earth).

Table no. 7. Evolution of transport infrastructure in Valcea County in 2015 compared to 2010

	2010	2015	% 2015/2010	%
Total – km				
Oltenia Region	10838	11254	103,8	100.0
Vâlcea	2167	2325	107,3	20.7
Modernized - km				
Oltenia Region	4241	4278	100,8	100.0
Vâlcea	717	831	115,9	19.4
Paved - km				
Oltenia Region	3243	2762	85,2	100.0
Vâlcea	517	494	95,6	17.9
Earthen - km				
Oltenia Region	861	929	107,9	100.0
Vâlcea	177	207	116,9	22.3

Source: INS and processing author

5.6. The evaluation rural tourism development

At the Valcea county level, the mountain presents a real potential for tourism and here there are used for tourism and sport resorts (such as Vidra).

► *developed tourist activities types in rural Valcea*

Mass tourism remains the predominant form of tourism in the area but there are other types of activities related to culture, environment, business, education, religion, etc. reflecting a more vigorous form of recreation and participatory. Skiing, hiking, cycling, etc. are activities practiced increasingly often in the area but their practitioners are often dispersed in areas without adequate infrastructure or no capacity to manage tourism activities. Be remembered that in the region of caving areas, ski areas, and areas for hunting and fishing. To this, add different sights that allow the practice of historical tourism, cultural and ecumenical, such as wood or masonry church inherited from medieval times; "Vestiges" - fortified houses that are found only in Valcea (originating from Afghanistan and Iran, manors were built in the eighteenth century by landowners to protect the Turkish invasions); museum of folk architecture; popular festivals and fairs, etc. On the other hand, rural areas in the region, complete tourist opportunities of the region, which offer genuine hospitality based on unpolluted environment, wine, gastronomy and folk traditions. There are even locally known gourmet brands such as: Drăgășani wine, brandy Pietrari etc.

Below we present an example selectively localized to different forms of tourism in Vâlcea: Travel ecumenical: monasteries tails, Horezu etc., spa tourism: Olănești, Călimănești, Govora; transit tourism and travelling, mountaineering in several forms: hiking, speleology tourism or scientific value; rest and recreation tourism in localities near valleys, gorges, reserves; hunting and fishing tourism in localities near the hunting areas and along the Danube tributarie; Scientific tourism is practiced by specialist especially in the reserves (Cozia Park, Buila - Vânturariț etc.). However, the county tourism is practiced disorganized or uncontrolled tourism, Camping in unauthorized places and a total lack of control over vehicle access.

► *Potential of rural tourism in Vâlcea*

Depending on tourism development potential of rural settlements, villages from Vâlcea County can be divided as follows: high tourist potential joint (3) - they hold on their territory biosphere the heritage which values national and world national parks, natural monuments; common potential (9) - they present great tourism potential and specific infrastructure, but partially realized priority favorable for the development of tourism; common environmental potential (34) - they show high tourism potential and favorable development of tourism function; common low potential (14) - these are common sights with natural and/or anthropic but are capitalized only locally (Table no. 8).

Table no. 8. The distribution of rural localities levels of tourism potential

	Plain	Hill	Mountain	Total
Low	3	1	-	14
Medium	5	25	4	34
High	2	3	4	9
Very high	-	1	2	3
Total	10	40	10	60

Source: Copyright by MDRT, NSP - Section VIII - tourist areas

Grouping municipalities according to tourism development potential of each rural and landform, allows us firstly to note that of the 60 common presenting tourist attractions, 23.33 % had low potential, 56.67% have potential average and only 20% have high potential and high (Figure no. 2).

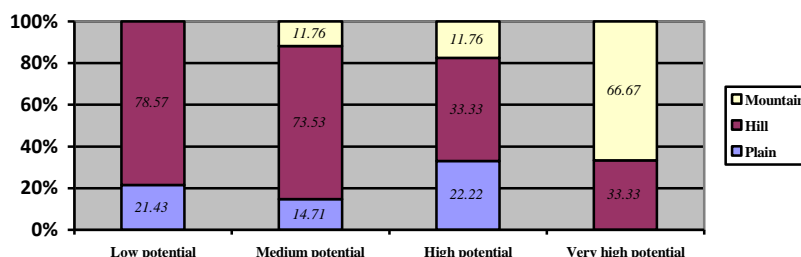


Figure no. 2. Structure of settlements on landforms based on tourism potential

Finally, at the level of the county, there are potential tourist areas, but we should mention that tourist activities requires modernization of transport infrastructure, training human resources in tourism, efficient management of local governments, but also by promoting higher advertisers and travel agencies.

► *The evaluation degree of development of rural tourism*

In Valcea, within the 78 municipalities that are part of its administrative, only 60 municipalities have potential tourism development, of which 12 were high and very high potential. Programs and strategies for tourism development must, however, take account of the 34 common environmental potential, which through investments and intensive promotion of rural tourism can increase the weight of the rural economy of the area.

a) The tourism evaluation (data collected from pensions)

To understand the unvaluably consequences of rural tourism at its real potential, we will start in the evaluation of the data collected in the territory of seven municipalities in the area analyzed, namely 34 hostels analyzed. This analysis was the first step in determining the degree of exploitation of rural tourism, giving us information on capacity supply and prices in the year 2012. Although not exhaustive selection made, make this assessment based on this information because, as I mentioned previously, we believe that the database is incomplete offered by INS our approach (Table no. 9). Data collected in the territory allowed us to find that specific tourist accommodation had developed in plains with average potential, in hilly areas with high potential and very high and mountainous areas with potential environmental, high and very high. Also, it can be seen that there is a concentration of tourism in areas with natural resources and anthropic, but which presents tourist infrastructure problems or technical infrastructure.

Table no. 9. The situation in Valcea rural tourism

Comuna	Forma de relief	Potențial	Pensuni	Margarete	Ofertaturistică rurală -locuri-	Tarif
Bărbătești	Mountain	High	Mircea Valeriu	2	4	60
			Calu Bălan	2	9	80
Bujoreni	Mountain	Very high	Intim	3	16	80
Costești	Mountain	Very high	Arnota	2	14	100
			Evrica	3	40	100
			Nicoleta	3	24	120
			Ferigile	2	8	100
			Ralu și Ello	3	12	100
Mălaia	Mountain	High	3 carafe	2	5	120

			Bujorul	2	5	100
			Ciobanelul	2	14	100
			Luminița	2	10	100
			Poiana soarelui	3	4	120
			Ursul	4	8	150
			Casa alba	2	8	80
			Casa altfel	4	7	150
			Casa lacului	3	12	120
			Ciobanelu	3	9	120
			Gavris	3	12	100
			Piatra verde	2	9	100
			Socolescu	2	5	100
			Unchiul Nae	2	2	100
			Andrei	2	9	100
			Domnitei sophie	2	9	100
			Lovsa	2	10	90
Slătioara	Mountain	Very high	Lume Nouă	2	14	80
Vaideeni	Mountain	High	Moara Viselor	3	14	90
			Baciul	1	5	
Voineasa	Mountain	High	2 brazi	3	9	120
			Constantinesco niculina	2	4	90
			Denisa	4	10	160
			Lazăr	3	10	100
			Valea haiducilor	2	4	100
			2 brazi	3	14	100
			Bradul	3	5	90
			Bujor de munte	3	6	120
			Montana	4	6	160
			Natalia	2	3	120
			Obârșia lotrului	2	6	90
			Passiflora	3	5	100
			Popasul haiducului	3	10	100
			Royal	4	7	160
			Vânătorul	3	15	120
			Muntinu	2	5	110
			Voineșița	3	7	100
			Bradul b.p.	3	6	120
			Dalia	2	6	80
			Iuliana	2	3	80
			La sandel	2	5	90
			Stefanescu	2	2	80
			Teodora	2	5	100
			Transalpina lac	3	10	110
Total				52		

Source: Data collected by author

b) equivalence coefficients

The establish tourist - score of tourism potential. The second step in calculating the degree of exploitation of rural tourism represents calculation of the coefficients of equivalence tourist - score of tourism potential. This factor allows us to establish the number of tourists on a point of potential tourism development has the ability to attract at a joint. Calculation of coefficients representative at a county level according to the formulas given in chapter methodology are (Table no. 10):

Table no. 10. Representative coefficients

Number of villages computation basis	32
Number of tourists (ΣT_{ji})	3865
Total score – potential of tourist development (ΣP_{j1}), wherefrom:	43,5
Coefficient of equivalence (C_i)	3,0

Source: author's own

c) Assessment of recovery of rural tourism in Vâlcea

Valcea County, although it has 78 commons, it has only 60 presents tourist interest, 10 are located in the plains, 40 in the hilly areas and 10 in the mountain areas, representing 17.59% of the municipalities in geographic regions of Oltenia. The NSP, all municipalities have obtained scores for potential natural resources, 19 potential anthropogenic joint 2 joint tourism infrastructure (Mălaia and Voineasa) and 1 common potential of technical infrastructure. All these scores awarded determined that the county Valcea tourism development potential have the following characteristics: 14 communes have low potential, 34 commons environmental potential (25 relief hill), 9 common potential (3 and 4 deal with the relief of the mountain relief) and 3 common potentially very high (one joint relief hill and mountain relief 2).

In 2015, in rural areas of Valcea county, statistical records were taken in 52 tourist's accommodation (hostels in localities Barbatesti, Bujoreni, Costesti, Malaia, Slătioara, Tomșani, Maciuca and Voineasa), which had a capacity of 7911 seats and Tourist capacity of 279892 seats in use-days and average 353,4 days of operation. In these structures tourists had arrived 13485 who stayed 25547 nights which resulted in an average of 1,9 nights per person nights and occupancy of only 9,12%. By mixing all this information we can estimate the degree of recovery of touristic potential based on the following assumptions (Table no. 11): coefficient of equivalence-point tourist potential is 18; 9,12% occupancy (at county level) and mean duration of operation 353,4 days (average district); pensions 15.5 average size places / pension (county average); average price is 103,08 lei or 23 Euro/place (average price calculated on the basis of information gathered).

Table no. 11. Assessment of recovery of rural tourism in Vâlcea

	Comparasion basis 2015	Low potential	Medium potential	High potential	Very high potential	Total – Vâlcea
		Estimative Values				
No. villages	8	14	34	9	3	60
Potential score of tourist development (ΣP_{ki})	214,5	139,0	538,6	240,9	110,5	1029,0
► tourist resources (ΣP_{aki})	131	84,0	281,5	152,0	70,5	588,0
► tourist infrastructure (ΣP_{bki})	83,5	55,0	257,1	88,9	40,0	441,0
Number of tourists (ΣT_{eki})	13495	2502,0	9694,6	4336,6	1989,0	18522,2
Number of nights (ΣI_{eki})	25547	6787,4	26299,6	11764,3	5395,8	50247,1
Capacity-accommodations (ΣL_{ki})	791	324,4	1256,8	562,2	257,9	2401,3
Number of pensions (ΣP_{enski})	52	25	80	35	16	156
Price average/accommodation (T_m)	103,08	103,08	103,08	103,08	103,08	103,08
Turn-over (ΣCA_{ki})	464904,9	300955,3	1166125,8	521626,9	239248,6	2227956,6
Valorizing level of rural tourism (G_i)		20.87%				

Source: Based on data Tempo online, INS and the data collected by the author

Rural tourism is currently valued at 20.87 % of its real potential. The county has as its potential ability to attract tourism to the area, approx. 18,000 tourists, half of the municipalities with medium potential. This implies that if the county would had a surplus of 124 hostels, the current size of occupancy and average size of pensions, might have

been created a viable economic sector of tourism in rural areas to bring revenue of approx. 2.2 mil Lei, this means four times more than today. At present, the county tourism infrastructure (52 hotels), the estimated number of tourists through the proposed methodology can only be achieved by ensuring, through sustainable tourism marketing programs, an occupancy rate of approx. 57.8 %.

7. Conclusions

Rural tourism is a complex phenomenon, with various psychological implications, geographical and urbanistic. Main role of tourism in the local economies is given by the influence of these activities to increase the income rural population, in the creation of new jobs, in the developing of related services, etc. This form of tourism has been growing in our country, especially after the creation of the necessary legal framework.

Specific rural tourism structures have come to represent in 2015 over 50% of the total hotels in Romania, and the increase of quality conditions have determined the number of tourists to reach a maximum of 1572 thousand people around. 7% BEING foreign tourists. No tourist services, products and integrated tourist infrastructure problems have determined that tourists arrivals to ensure a degree of occupancy of only 13.8 %. In order to solve these problems, which provide a low development of Romanian rural tourism below potential, have been documented, in addition to legislative rules governing specific functionality tourist activities, a series of strategies and programs as well as master plan for the development of Romania's national tourism or annual program of tourism marketing and promotion. To these are added strategies, programs and projects for the development of rural tourism at the regional level as well as: strategies for socio-economic development 2014-2020; regional development strategies cultural; plans of the fitting out of county territory; European programs (Regional operational program, the national program for rural development 2014-2020); projects of local authorities.

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AUDIT AUTHORITY – PUBLIC EXTERNAL AUDITOR OF EUROPEAN FUNDS

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***Abstract:** European funds provided to Romania as a Member State are managed and implemented by Management Authorities established for each category of funds and programs, and the audit of these funds is made by Audit Authority in its quality of public external auditor, being in accordance to the national and European legislation in effect. The Audit Authority was constituted based on the Law no.200/2005 concerning the approval OUG nr22/2005 for completing the Law no.94/1992, concerning the organizing and functioning of Court of Auditors, and it develops audit activities in accordance, system audit, audit of operations, certification audit of accounts, audit at the end of the financing programs for providing an opinion concerning the way of managing the European funds which it is annually reported to the European Commission. The main steps that the Audit Authority traverses within the audit process consist in elaborating the audit strategy, planning the audit activity, implementing the audit, reporting, monitoring and verifying the actions taken as a result of recommendations.*

***Keywords:** audit, European funds, audit authority, system audit, operation audit.*

***JEL Classification:** M42.*

1. Introduction

Romania's integration in the European Union had a positive impact on the development of our country, through the investments realised from the European funds made available by the Union. Nationally, the European funds are managed and implemented by Management Authorities, with the possibility of also delegating a part of the activities to Intermediate Bodies. The management of non – reimbursable European funds made available to Member States by the European Union is based on the principle of shared management, principle according to which the Member States and the European Commission assume together the responsibility for the efficient management of these funds. Therefore, in 2005 it was constituted based on Law no. 200/2005 concerning OUG approval no. 22/2005 for completion of Law no. 94/1992 concerning the management and functioning of the Court of Auditors art. 14¹-14⁷, Audit Authority as the only national competent authority in making an external public audit of European funds., being a part of Court of Auditors as an organisation without Juridical personality, but operationally independent from the Court. (Law no.200/2005). Audit Authority's objectives consists in obtaining a reasonable insurance that the European funds are managed and that they function accordingly, protecting Romania and European Union's Financial interests, and consolidating the institutional capacity of Audit Authority as an independent, professional and credible institution of external public audit of non-reimbursable European funds. (Court of Auditors, 2017, p.632). Audit Authority has a well determined mission, which consists in accomplishing the external public audit upon the way of management of European funds, in accordance with the national and European regulations in effect. The audit actions are annually programmed in accordance with the established activity program, or multiannual – in appointment periods – in accordance with the established audit strategies on fund or operational programs and they are made at the entities which manage the European non – reimbursable funds, at authorities for certification and payment and at the projects' beneficiaries financed from European funds.

2. Methodology

Our research has the purpose to present the theoretical aspects concerning the achievement of audit missions by the Audit Authority, in its quality of external public

auditor of European non-reimbursable funds, in accordance with the national and European regulations in effect.

As methods and research techniques in our study, we have appealed to the theoretical research, to studying the normative acts, synthesis and graphic representation. The theoretical research was consisted in studying the specialty literature. The study of legislation or normative acts consisted in studying the Law no. 200/2005 on which the establishment of Audit Authority was based on. Synthesis was used for presenting the theoretical aspects, the domain of European funds audit being a vast study field. Graphic representation was consisted in presenting the number of verified entities and the number of audit missions accomplished by Audit Authority.

3. The Deeds of Audit Authority

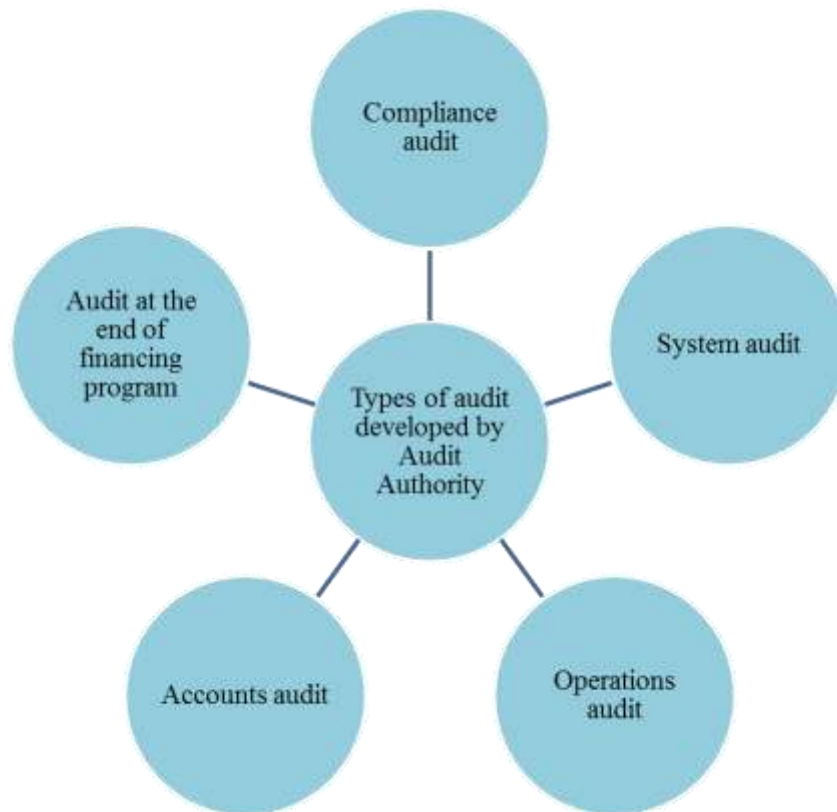
Audit authority has clearly established deeds which include (Court of Counts, 2017):

- Verifying the conformity of management and control systems for operational programs co-financed by the structural instruments and by European Fisheries Fund, with the community legal stipulations;
- Verifying based on a representative sample, the expenses reported by the authorities responsible with the management and implementation of the mentioned funds;
- Annual reporting concerning the compatibility of management and control systems of the authorities responsible with managing and implementing the above-mentioned funds, referring to their capacity to ensure the conformity of operations to the community stipulations;
- Verifying the existence and correctness of the national element of co-financing;
- Delivering the audit documents concerning the annual accounts of payment agencies, as well as SAPARD Euro account, concerning the thoroughness, accuracy and reliability of these accounts;
- Emitting the opinion on the insurance declaration, delivered by payment agencies for agriculture and rural development;
- Issuing the closure statements, accompanied by audit reports, for each program or measure, financed by the mentioned funds, as the case.
- Following the respecting of accreditation criteria, by the audited entities, the stated recommendations as a result of the audit actions effected by the Audit Authority.

4. Types of Audit Made by the Audit Authority

The audit activity developed by the Audit Authority is a very complex one, comprising a variety of audit types specific to each programming period, according to Figure no.1.

Figure no. 1. Types of audit developed by Audit Authority



Source: Own processing based on Court of Auditors, *The White Book of Romania's Court of Auditors 2008-2017*, Bucharest, 2017, pp.629-630.

- Compliance audit – this type of audit consists in obtaining a reasonable insurance that the management system and the control system, used for implementing the European programs are in accordance to the European principles and regulations;
- System audit - this type of audit consists in obtaining a reasonable insurance that the management and control systems effectively work for preventing possible errors or irregularities, and if these took place the possibility of detecting them correctly to exist;
- Operations audit - this type of audit consists in obtaining a reasonable insurance that the expenses reports transmitted to the European Commission are exact and real, and the afferent transactions respect the legislation in effect and the applicable European regulations;
- Accounts audit - this type of audit consists in obtaining a reasonable insurance that the accounts represent a trustworthy image of the economical operations incurred in implementing the European programs;
- Audit at the end of the financing program - this type of audit consists in obtaining a reasonable that the program was implemented in accordance with the European regulations, and the Partial / Final Closure Statement is emitted.

5. The Stages of the Audit Process

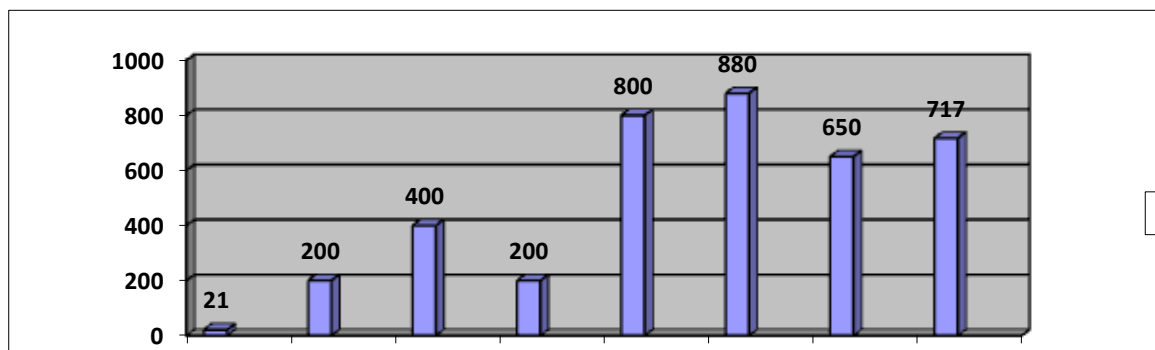
The audit process developed by the Audit Authority presumes the browsing of five stages (Court of Auditors, 2017, p.631):

- a) Elaborating the audit strategy – annual and multiannual programming – this first stage consists in determining the audit priorities based on the risk analysis and on European regulations articles;
- b) Planning the audit activity, this stage consists in establishing the audit mission's objectives, the strain of applicability and the audit methodology;
- c) The audit execution consists in activities developed at the scene, having the purpose of obtaining the audit samples based on which the audit conclusion to be substantiated;
- d) The reporting is the fourth stage of the audit process and it consists in releasing the audit report which comprises the findings, conclusions and the audit's recommendations;
- e) Monitoring and verifying the actions undertaken as a result of recommendations, this stage consists in verifying the extent to which the recommendations were implemented by the audited entities.

6. Authority Audit's Activity in Numbers

The audit activity developed by the Audit Authority targets the entities implied in managing and implementing the European funds and they comprise the Certification and Payment Authority, Management Authorities, Intermediate Bodies and the beneficiaries of the European funds. Between 2008 and 2015, the Audit Authority had verified over 3800 entities, according to Figure no. 2.

Figure no. 2. Entities verified by the Audit Authority

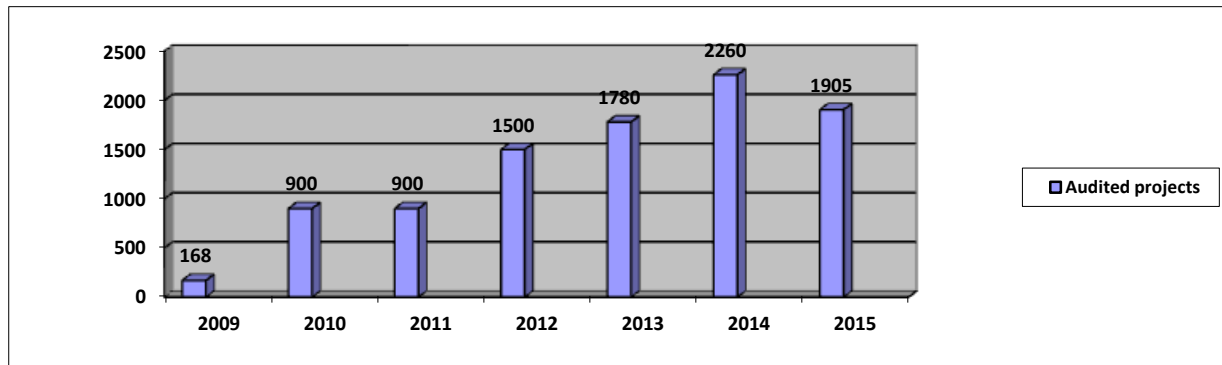


Source: Court of Auditors, *The White Book of Romania's Court of Auditors 2008-2017*, Bucharest, 2017, p.660.

From the displayed data, we can infer that in the period between 2008 and 2015 the number of verified entities had presented continuous fluctuations, the greatest number of verified entities being registered in 2013 (880 entities), and the smallest number of only 21 verified entities was reached in 2008 due to the fact that Romania was in the first period of programming after its integration in the European Union and the number of accessed projects was at a reduced level.

The number of verified projects by the Audit Authority between 2009-2015 is a considerable one, being over 9400 according to Figure no. 3.

Figure no. 3. Projects audited by the Audit Authority



Source: Court of Auditors, *The White Book of Romania's Court of Auditors 2008-2017*, Bucharest, 2017, p.660.

We can observe that the number of audited projects follow a ascendant trend between 2009 and 2014, from 168 audited projects in 2009 reaching a maximum of reference period of 2260 in 2014.

7. Findings of Audit Authority as a Result of the Developed Audit Activity

As a result of the developed audit missions, there have been observed a series of deficiencies concerning the management and implementation of European funds/programs made available for Romania as a Member State, which regarded (Public Reports of the Court of Auditors 2008-2015):

- Expenses settlement in the absence of supporting documents;
- Works/services settlement which either weren't executed/accomplished, or they weren't a part of the financed activity;
- Failure to comply to the provisions within the financing contract;
- Failure to achieve the objectives which were provided by the financing contract;
- Failure to comply to the provisions concerning public acquisitions;
- Authorization for payments of ineligible expenses, requested by the beneficiaries;
- Non registering all the identified debits in the Debtors' register;
- Non compliance by the beneficiaries of the eligibility requests from the financing contracts;
- Works which were done outside the eligibility period;
- Surpassing the estimated value provided in the concluded contracts;
- Making works which qualitatively did not correspond;
- Delays in contracting and executing certain works;
- Non compliance by the beneficiaries with the date concerning making payments;
- Delays in making controls at the scene;
- Effecting double payments to some beneficiaries which activate in the agricultural sector;
- Miscalculation of penalties as a result of late submission of payment applications for surface support;
- Documents wrongly compiled concerning the agricultural surface;
- Errors in the accounting records, concerning the financed operations;
- Beneficiaries' failure to comply with information and advertisement provisions;
- The beneficiaries' lack of information concerning the result of the payment requests verification.

8. Conclusions

Non reimbursable European funds made available to the Member States by the European Union are managed based on the shared management principle, principle which implies that the responsibility concerning the funds' management recurs both to the Member States but also to the European Commission. Audit authority is the only competent national authority in making external public audit of the non reimbursable European funds and emitting an opinion concerning the way of managing and practising these funds. The activity of audit for the European funds entails realizing a variety of audit types, emphasizing the system audit through which the entities which manage and implement the European funds and the authorities of certification and payments, are verified, as well as on the operations audit which is taking in account the operations occasioned by implementing the financed projects from European funds. The audit process infers going through five stages, from elaborating the audit strategy and till monitoring and verifying the actions effected as a result of recommendations. The audit activity developed by the Audit Authority from after Romania's integration in the European Union till in 2015 has implied the verification of over 3800 entities and auditing over 9400 projects, as well as identifying the main deficiencies and presenting the recommendations destined to improving the activity of management and implementation of the European funds.

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APPROVAL OF FINANCIAL ACCOUNTANCY IN CORRELATION WITH FINANCIAL AUDIT

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Abstract: Accounting has arisen as man began to engage in economic activities both individually and economically to measure and record the activity performed as a social requirement. At the beginning of the 20th century, accounting began to be considered science by some specialists and management techniques by others. At the same time, the generally accepted accounting principles were developed and the auditors used the wording that the accounting statements represent the true image of the company's financial position and the results of its operations in accordance with the accounting statement represented by the generally accepted accounting principles. Accounting is considered both a social and an applied science, determined by the economic, financial, political, legal, social and cultural environment. Accounting is currently recognized as a field of scientific knowledge, which is based on methodologies, principles, and rules, which should lead to the development of a theoretical support for economic decision making in the economic environment. By admitting accounting as a science we must also accept that this science is based on three types of research: fundamental accounting research, applied accounting research, fundamental normative research. Accounting standardization is a social necessity required to present as accurately and as close to the truth as possible the information resulting from accounting and which are mainly represented by the financial statements. Normalization should meet the information needs of the following groups of users: internal users and external users. In accepting Romanian specialists in the field of accounting, normalization is a process through which the synthesis documents, the conceptual framework, the accounting methods and the terms ensure maximum generalization and harmonization. Normalization provides for the definition of postulates, principles and accounting rules. Based on the analysis, we tried to redefine accounting, approached the financial audit in correlation with accounting and historical milestones. I presented the justification of the need for audit based on three theories accepted by specialists: insurance theory, agency theory and motivational theory, theories interfering with accounting. We have determined that the financial audit is a tool that complements accounting.

Keywords: accounting, science, financial audit, research, paradigms, methodology, postulates, principles, knowledge, audit, theories, users, norms.

1. The emergence and historical evolution of accounting

Accounting has emerged at a certain point in human development as man became "homo oeconomicus," and began to engage in economic activities, both individually and economically, and thus the economic activity led to a measurement, but also a record of the activities carried out.

The need for measuring and recording economic activities was determined by those who held power, on the one hand, and those who exchanged economic goods on the other hand, in order to have a measure of the reality of these economic activities.

These first attempts to record economic exchanges are set by historians in the Middle East (Mesopotamia) in the period from 10,000 to 3,000 BC. Specialists in writing history and accounting historians have accepted the theory that "accounting was the one that determined abstract writing and computing" (Ionescu, 2003, p.14).

The representative civilizations of antiquity, such as the Greek, Roman and Egyptian civilizations, had specific forms of accounting that made it possible to record commodity exchanges, to show social relations, and to identify a relationship between two parties (debtor and creditor) and establish ownership (who owns the good and what can he do with it).

The medieval period then followed, which had as its specificity at the starting point an economic structure of the fields around the castles and cathedrals, which were mainly based on self-consumption.

After the crusades, there is an increase in trade (due to these crusades), which will lead to a considerable development of Western European accounting.

This development of West European accounting was the result of practical needs for shopkeepers and bankers who needed to know and record credit operations by practicing account-based book keeping that contained information about liabilities or debts to those with whom they had business relationships.

The emergence and development of capitalism in Western Europe generated an increase in the complexity of businesses that have led to several processes as follows:

1. Separating the person managing the business from the owner of the capital;
2. The emergence of the economy based on monetary exchange relations and profit-making
3. The creation of an instrument to meet the new economic requirements and this was "double-entry accounting", which was, is, and will still be, for a significant period, an adequate tool for modern capitalism accounting.

In the early part of the 20th century, accounting began to be considered a science, by a part of the specialists, and by others, it was considered as a management technique.

In the beginning of the 20th century, the first incipient forms of the theories approaching accounting as a science appeared, through the emergence of a process of defining and detailing accounting principles accepted by all the involved social entities that constituted what was synthesized through, "generally accepted accounting principles".

From this point on, the auditors used in their report the statement that the financial statements "present the true image of the company and the results of its operations in accordance with the accounting statement represented by the generally accepted accounting principles."

The industrial revolution led to the separation of the administrators from business owners and as a result the process of financing the factories by investors emerged, and thus the necessity of auditing and auditors appeared.

2. Accounting approach

2.1 Approach to accounting as an applied science

Accounting is a science that has evolved from simple to complex. It has emerged as a necessity at a time of development of exchange relations within society. Accounting is in our view, both a social science and an applied science.

In the approach of a part of the specialists it appeared that in the history and evolution of accounting there were several paradigms. The existence of several paradigms, sometimes competing, leads to the conclusion that the fully mature status of accounting as a subject can now be confirmed.

The system of scientific knowledge can be detailed according to a part of the specialists in the following categories:

- Natural sciences, which in turn is subdivided into the following sciences: Physics; Chemistry; Biology;
- Social sciences, which are subdivided into the following sciences: Legal sciences; Economic sciences; Management sciences; Political sciences; History; Sociology.

In their turn, management sciences include: Marketing; Finance; Management; Accounting. Accounting as an applied social science is determined by the economic, financial, political, legal, social and cultural environment.

We are witnessing a phenomenon of globalization of activities, capital markets and economic entities, which, for analysis, need an essential information communication tool that is offered by accounting.

Accounting, in our present, is recognized as a field of scientific knowledge, which is based on concepts, methodologies, principles, rules that must lead to the elaboration of the theoretical support necessary for the economic decision making for the economic environment.

Lately, the importance of accounting research has increased, so the impact of theoretical research has been significant on accounting practices.

Currently, the methodology, which is significant in accounting research, is mainly based on the mathematical-statistical tool, methods used by other social sciences (for example, history). Depending on the paradigms accepted by the accounting research, two main and representative trends emerged: the American school on positive accounting theory and the French school.

According to researcher Bernard Colasse, a promoter of the French school, three basic functions are distinguished in accounting research (Feleagă and Ionașcu, 1998, p.20):

- 1) Accounting practices are based on theoretical approach and classification;
- 2) Accounting adapts to new information needs and extends the scope of accounting;
- 3) Evolution of knowledge in accounting.

Taking into account that we have approached and accepted accounting as a science, we will also accept that this science is based on three types of research:

- Fundamental accounting research,
- Applied accounting research,
- Normative accounting research;

Fundamental research (basic research) in accounting consists of experimental and theoretical works of broad generality, concerning the definition of accounting concepts, methods and functions and contributing to the increase of the degree of knowledge in this field. This type of research is reflected in the analysis of accounting as a social, organizational, historical phenomenon.

Applied accounting research is geared to a virtually established goal or purpose and pursues new knowledge that leads to a limited number of systems or methods and operations. This applied research aims to modernize the tools that accounting is based on, based on the accounting practices required by the existing economic environment at a time of reference.

Normative accounting research contributes to the development and improvement of accounting principles, methods, rules and practices in relation to the requirements of accounting information users and in the existing socio-economic context. The existence of this type of research that completes accounting as a science is based on normalization bodies that issue norms and rules that are based on studies and preparatory papers.

The three forms of research that underpin the science of accounting are recognized by both Bernard Colasse, a representative of the French school of thought and a large number of Romanian specialists (Jianu, 2012, p.18).

In support of normative research, specialists in the field of accounting have developed, and others have accepted, the normative accounting theory which is made up of three elements:

- Generally Accepted Accounting Principles;
- National accounting plan;
- Conceptual accounting framework;

These theoretical approaches explain how accounting, which transforms into accounting norms or standards and which determines the accounting practice (Ionescu, 2003, p.67).

2.2 Approach to Normalization in Accounting

Normalization in accounting is a process that manifests itself in most countries of the world and contributes to the foundation of accounting theory.

Normalization is a social necessity required to present as accurately and as close to the truth as possible the information resulting from accounting and which are mainly represented by the financial statements of an economic entity.

Normalization should meet the information needs of the following groups of users:

a. Internal users who are mainly represented by managers, to monitor the achievement of production, investment, and profit objectives, who are then aware that they need to be analysed by the owners, according to some general rules on how to manage resources and results of companies.

b. External users who are represented by investors, creditors, customers, suppliers, state bodies and other interested users, each of whom has their own interests in the economic entity.

The generalization of the global market economy has generated accounting normalization which must ensure the organization of operating rules for the accounting information market in the first phase and then in the second phase optimize the communication of accounting and financial information.

Globalization of the economy and the diversity of economic agents contributed to the creation of a market of accounting information and thus created another need for harmonization of accounting standardization in order to compare the information for different economic agents in the territory and under the jurisdiction of different states.

In the opinion of an important part of the Romanian specialists in accounting, normalization is a process through which the synthesis documents, the conceptual framework, the accounting methods and the terms, ensure maximum generalization and harmonization.

Normalization provides for the definition of postulates, principles and accounting rules. The highest degree of generality is in accounting postulates. The accounting postulate represents an assertion (sentence) whose acceptance is required to make a demonstration. Accounting postulates are based on rational observations made on:

- Economic, legal, social and political environment;
- Identification of users interested in financial information and their information requirements;
- Objectives of financial information.

All rational observations considered to have utility, which have been attributed the postulate quality, will be stored, processed and used for the elaboration of accounting principles and norms (Feleagă, 1998, p.259).

The accounting principles have a lower degree of generality than postulates and are defined as conceptual elements that coordinate normalization and normalizing bodies in conceptualizing accounting rules based on accounting postulates.

Figure no. 1 shows the degree of generality between postulates, principles and accounting rules in accordance with the effect of determining each component of the accounting normalization system.

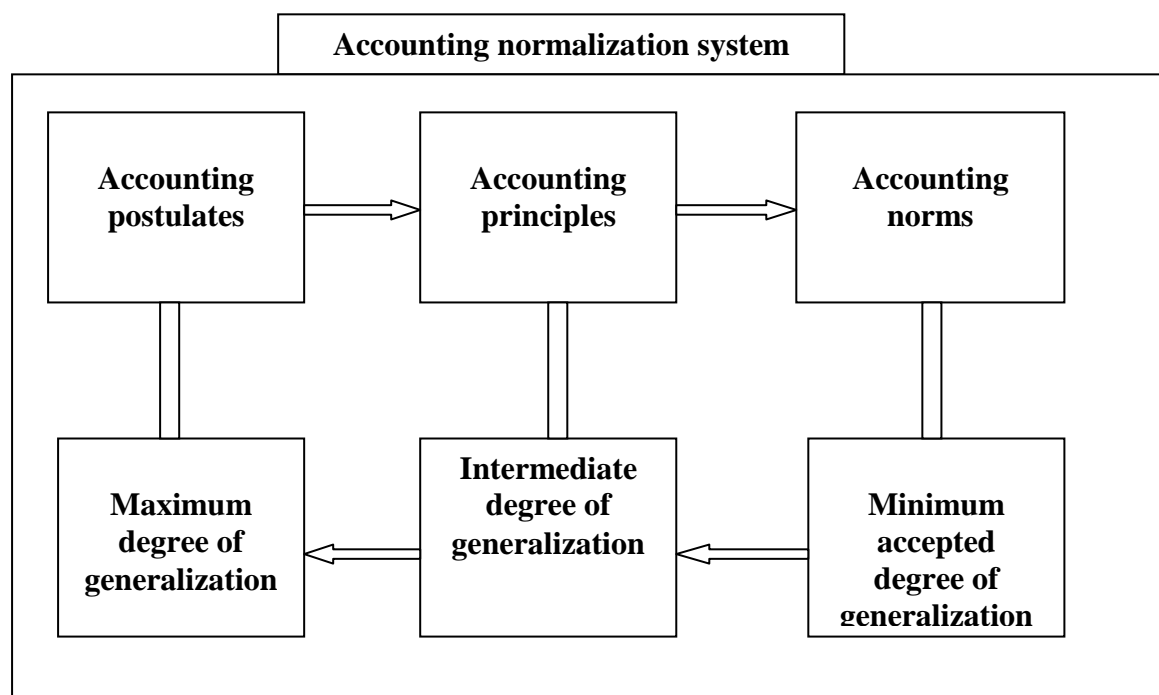


Figure no. 1. The accounting normalization system and the component generalization degree

In the opinion of a part of Romanian specialists, normalization of accounting has the following objectives:

- To improve bookkeeping through accounting practice regulations;
- To ensure users can make decisions in line with reality while using accounting information;
- To determine through regulated rules that there is a climate of trust between owners and administrators;
- To ensure a fair balance between generators of accounting information and auditors who express an opinion on them and which determines the credibility of the accounting information to the interested persons.

In the above-mentioned context, the national normalization body defined accounting as a specialized activity which must ensure:

- Measurement, evaluation, knowledge, management and control of the assets of the economic entity's debts and capital
- Measuring the results obtained by an economic entity
- Chronologically and systematically recording, processing and maintaining information on financial position, financial performance and other relevant information related to the entity's business, for the requirements of stakeholders (managers, investors, creditors, clients, state institutions).

Under the above-mentioned conditions, the normalizer has conceptualized two fundamental qualitative features of financial information, namely: relevance and exact representation.

Financial information is relevant if it has the ability to determine users to make the right decisions and to describe an exact representation if they are complete, if they are neutral and error free.

Following these definitions, the normalizer has further defined a set of characteristics that have the character of an amplifier of the first two fundamental qualitative features. These are: comparability, verifiability, timeliness and intelligibility.

a) Comparability allows users to perform a comparative analysis between entities of the same type in the branch or other different branches and so the information becomes more useful;

b) Verifiability helps users understand that information accurately represents the proposed economic phenomena;

c) Timeliness ensures that financial information reaches the decision-making factors at the most favourable time to make optimal decisions;

d) Intelligibility ensures: the classification, characterization and presentation of financial information as clearly and comprehensively as possible so as to be easily understood by users with specific knowledge of economic activities and analysing financial information with due care.

In Romania's normalization activity, a set of 10 general principles based on which the financial information and statements (annual or consolidated) are prepared and presented were defined. The 10 defined principles are:

- a) Business Continuity Principle: Assumes that the entity continues its business normally without going into liquidation or without any significant reduction of activity for at least one year from the date of the financial statements. It is the most important principle and if not followed, the other principles can no longer be applied;
- b) The principle of the permanence of methods;
- c) The principle of prudence;
- d) The principle of engagement accounting;
- e) The principle of intangibility;
- f) The principle of separate evaluation of assets and liabilities;
- g) Non-Compensation Principle;
- h) Accounting for and presentation of balance sheet items and profit and loss account taking into account the economic substance of the transaction or commitment in question;
- i) Principle of valuation at acquisition cost or production cost;
- j) The principle of significance threshold;

On the basis of the elements presented so far, we will try to define accounting. Accounting is a complex and aggregated scientific system of the utmost generality, including: postulates, principles, accounting rules and appropriate accounting policies that an economic entity must apply for the preparation of financial statements so as to meet the users' requests for such information and to present economic phenomena as close as possible to the economic reality of the entity.

3. Approaching financial audit in relation to accounting

3.1 Audit history

The financial audit arose after accounting appeared in the ancient period, and its evolution is closely correlated with the evolution of accounting. In developing the audit, we can identify several historical steps that follow the development of accounting:

- a) Antiquity - 1905, when the audit was aimed at detecting fraud, the way of verification was detailed, and the importance of internal control was not recognized;
- b) 1905-1933, when the audit objective was, in addition to detecting fraud and determining the degree of sincerity in reporting the financial situation, the verification process also began to rely on testing and there was a slight recognition of internal control,

- c) 1933-1940 where the audit objective is retained as at the previous stage, but the verification mode is based on tests and an increase in the importance of internal control has been observed;
- d) 1940-1960, where the objective of the audit is preserved as at the previous stage, the way of verification is the same as in the previous stage, but the emphasis on internal control increases;
- e) After 1980, the central objective is focused on internal control at the level of the economic agent and on compliance with standards.

The purpose of the audit is to verify whether the principles, evaluation bases, conventions, rules and practices have been correctly applied and the information contained in the financial statements is prepared in accordance with the applicable accounting reference and do not contain material misstatement.

3.2 Theories justifying the financial audit process

A significant part of the specialists asserts that there are three theories justifying the financial audit (Dobroțeanu, 2002, pp.30-33): a) Theory of Assurance; b) Theory of the Agency; c) Motivational theory.

a) The theory of assurance is based on the following two principles:

- a1. The assurance principle, which assumes that the auditor provides the persons concerned with assurance on the information used and which they have been audited,
- a2. The principle of information, according to which the information contained in the financial statements is more credible and useful to the users most interested in making the decision (and they are represented by investors and managers).

Auditing is also necessary because:

- There is a conflict of interest between those who prepare and draft financial statements, management and other users of accounting information in the decision-making process;
- In general, users of accounting information (for ex. owners, financiers) in rare cases have specialized training;
- Reduces the risk that the information presented in the financial statements is not accurate.

b) The Agency theory is based on the fact that the shareholders and financiers do not have full confidence in the administrators or managers that they will use the resources available for the achievement of the approved objectives and believe that they could reach other destinations without participating in the achievement of the objectives;

The Agency theory is also justified by the following aspects:

- The two categories of users of accounting information have an objective tendency to maximize their wealth;
- Administrators and managers tend to present the information in the most favourable financial statements in order to obtain bonuses and trust of owners, and in this case the owner tends not to trust managers' information;
- There is a converging tendency for both managers and owners to accept that the information contained in the financial statements is certified by an independent person and involves acceptable costs;

c) Motivational theory justifies the necessity of financial audit by the fact that those responsible for the preparation of the financial statements will perform better quality work, knowing that these situations are subject to a financial audit. Specialists believe that auditing the financial statements is more credible and it is appreciated that for reasons of motivation; added to them is the added value of the information contained. Due to the fact

that those who prepare the financial statements know that they are audited, making distorted statements is deterred.

In conclusion, the financial audit establishes control over the quality of information because:

- Motivates those responsible for preparing financial statements by organizing their work according to the user criteria, having the information that the financial statements will be reviewed by an independent external auditor;
- An independent verification of the information contained in the financial statements is ensured, according to previously established criteria that assume that they are in accordance with the wishes and needs of the user;

Financial audit is an instrument that complements the application of accounting, which validates accounting in the form of significant aspects, makes a verification of compliance with accounting principles, accounting rules and policies.

The audit activity is carried out on the basis of normalization (regulation) by each state by its own rules, just like accounting. At national level, regulations are in line with those at European and international level. Government Emergency Ordinance No. 75/1999, approved by Law 133/2002, stipulated the financial audit activity and the Chamber of Financial Auditors was established as a professional body. The GEO 90/2008 on the Statutory Audit of the Annual Financial Statements and the Consolidated Financial Statements, which transposed the EU Directive 2006/43 EC, followed chronologically.

Also, the Chamber of Financial Auditors of Romania adopted the Code of Ethics and the International Standards on Auditing, Review, Other Assurance missions and Related Services developed by IFAC as well as those on quality control.

The Parliament adopted in 2017 the Law no. 162, which regulates the statutory audit of the annual financial statements and the consolidated annual statements, and which establishes the manner of supervision of the audit;

4. Conclusions

Accounting has emerged as a necessity, as the economic activity of the human society developed, and witnessed a significant development since the early decades of the 20th century, and financial audit has followed the same trend. We have accepted accounting as a social science, but it is, in accordance with the analysis undertaken, above all an applied science. Based on the analysis of data, we have tried to define applicative accounting as “a complex and aggregated scientific system of the utmost generality, including: postulates, principles, accounting rules and appropriate accounting policies that an economic entity must apply for the preparation of financial statements so as to meet the users requests for such information and to present economic phenomena as close as possible to the economic reality of the entity”.

Based on the analysis, we have established that “financial audit is an instrument that complements the application of accounting, which validates accounting in the form of significant aspects, makes a verification of compliance with accounting principles, accounting rules and policies”. Both accounting and financial audit are subject to normalization, depending on each country's economic development and knowledge development.

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MODERN ASPECTS OF MONETARY GLOBALIZATION

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***Abstract:** Monetary globalization is a specific form of financial globalization within overall process of economic integration. At the same time, it is a superlative manifestation of trends in internationalization of foreign exchange relations. Its main aspect is the continued development of international currency market. Monetary globalization is linked to contradictory processes, such as currency monopoly and currency polycentrism. The first is related to global domination of a single currency. The second - to emergence and global use of more freely usable currencies. Similarly, the process of currency regionalization is remarkable. Besides, it is important to create a single global currency issued by a world level financial body. All these aspects of the development of monetary globalization are reflected in this article.*

***Key words:** currency, monetary globalization, monetary regionalism, foreign exchange market*

***JEL Classifications:** F31, F36, F65.*

1. Introduction

Financial globalization is a consequence and a component part of overall process of economic integration. Much of its elements have emerged as a result of financial sector development, based on increase in the volume of free financial means and their distribution among countries, emergence of new financial instruments, creation of collective currencies.

At the same time, financial globalization is the highest stage of financial markets internationalization in all its forms in order to ensure the needs of foreign exchange-financial relations development.

Analysts in the field of financial markets have noted that the underlying financial globalization is interaction of following phenomena (FinResult, 2017):

- Technical progress, which allows the realization of international financial transactions in real time and significant reduction of transport and communication expense;
- Increased competition, on the one hand, between financial institutions on financial markets, and elsewhere - between financial markets itself as a result of important development of information and telecommunication technologies;
- Restructuring financial institutions through mergers and acquisitions as a result of increased competition between them;
- Widespread internationalization of economic activity by strengthening transnational character of corporate activity;
- Strengthening regional integration spaces;
- Weakening the control of realization of international transactions related to capital stock exchange movement both in industrialized countries and other groups of countries;
- Macroeconomic stabilization and reforms in a number of countries with a transition economy, which created a favorable climate for foreign investors;
- Privatization in many developing countries, which has contributed to emergence of new commercial loan instruments;
- Fundamental widening of financial leverage principle (increasing volume of funds lent for investment purposes) and development of asset securitization processes in industrialized countries.

Financial globalization has been manifested through strengthening of links between international financial centers has constituted a financial revolution, which has three basic aspects (FinResult, 2017):

- *Global presence of international financial institutions.* Of major importance was the formation of international financial institutions system headed by International Monetary Fund, International Bank for Reconstruction and Development, regional financial institutions;
- *International financial integration.* United States, United Kingdom and Japan have essentially weakened control over capital movement. United Kingdom raised this control in 1979 and in 1986 there were reforms in the stock market. In US in 1980s and in 1986 liberalization of domestic financial markets began in Japan. As a result, there has been a significant widening of financial markets of these countries, amplification of mutual penetration and merging of national financial capital, which have started to move freely from domestic markets worldwide and vice versa;
- *Rapid development of financial innovations.* International financial integration has prompted profound qualitative changes in financial technologies. A large number of new financial instruments has emerged. Accelerating the flow of capital flows also takes place due to implementation of new technologies in the field of telecommunications.

As basic forms of financial globalization are:

- *Monetary globalization* is an expression of deepening of foreign exchange relations internationalization (Trutneva, 2017).
- *Banking globalization* is the stage in which banking services have spread throughout the world, becoming universal (Savu, 2006). As a result of banking globalization, nature and forms of competition on financial market change. Banks are forced to compete simultaneously on several segments of financial market, not only among themselves but also with other financial institutions: insurance companies, investment funds, non-state pension funds and other financial companies (Davlatov, 2015). Banking globalization represents the highest level of international banking development, which is reflected in the implementation of commercial banks' transactions with foreign partners and global financial markets. International banking activity has developed with development of world trade, international activity of non-financial institutions.
- *Investment globalization* can be defined as a process of substantially increasing the proportion of capital investment in the world, which is owned by non-residents. (Giem) Investment globalization usually refers to the process of integrating financial markets of different countries in the world into one (Arestis and Basu, 2003). It is the superlative stage of internationalization of financial markets in all forms in order to ensure needs of foreign exchange-financial relations development.

2. General theoretical review of globalization

Monetary globalization is a specific form of financial globalization, as well as its main support, which is the superlative degree of foreign exchange relations internationalization related to functioning of currencies in the world economy and institutional organization of these relations in accordance with principles of international monetary system. The combination of functional and institutional approaches gives the opportunity to discover deeper the essence of development of foreign exchange globalization (Krasavina, 2012).

The evolution of monetary globalization is related to impact of following trends (Trutneva, 2017; Nehaev, 2000; Shishkov, 2004):

- Development of international foreign exchange relations related to new form of labor division, which can be called international division of production process, which changes the image of world economy;
- Globalization of goods, services, labor resources, capital markets as a result of integrating national markets into world;
- Implementation of new technologies and standards of interstate redistribution of foreign exchange flows with use of electronic banking and the Internet;
- Development of institutional aspects of foreign exchange globalization, manifested in the tendency of adapting existing institutions of foreign and economic regulation to conditions of globalization.

The main premise of monetary globalization, as a form of financial globalization, is the contradiction between internationalization of own reproduction process and preservation of national specificity (Krasavina, 2012).

The direct cause of monetary globalization is, on the one hand, the contradiction between the degree of amplification of internationalization of foreign exchange relations and their organization in the form of international monetary system, and, on the other hand, the preservation of national peculiarities of international foreign exchange relations and monetary system.

Monetary globalization goes far beyond rhythms of globalization in the sphere of material production. This process is amplified by virtualization of foreign exchange operations with the use of modern information technologies, standardization of foreign exchange operations, increased volume of speculative operations.

Given the fact that foreign exchange relations serve the microeconomic links, this determines *many levels of monetary globalization* that assist internationalization of breeding process.

Monetary globalization has the tendency to widen, because foreign exchange relations mediate the increase in volume of international commerce with goods and services and, in particular, international capital movement, including the fictitious.

Analysis of tendencies oriented to polycentrism and currency regionalism allows to conclude that they oppose monetary globalization *in functional aspect*, ie in sphere of relations related to functioning of currencies in international circuit.

Financial globalization has a higher degree of institutional development in the form of organization of foreign exchange relations governed by principles of international monetary system (Krasavina, 2012).

After the cancellation of Gold Standard System, the role of international currencies is fulfilled by a number of national currencies, basic areas of their use under the current conditions are following (Struk, 2012): official currency reserves, commercial contracts, foreign exchange operations, private financial assets, primarily in the form of loan instruments and bank loans.

It is considered that national currency is becoming international when it begins to fulfill one or more money functions outside the jurisdiction of issuing State.

Depending on level of internationalization, the following currencies can be highlighted (Butorina, 2003):

- *Key Currency*, which performs a series of significant money functions across the country;
- *Main Currency or Intermediate Currency*, which is used in international trading and foreign exchange transactions, for which it is not for each of parties;
- *Dominant currency*, which performs in international circuit most of money functions in a much higher volume than other key currencies.

3. Globalization and dynamics of foreign exchange market

The development of international currency market has become the foundation of financial globalization, but the progress of last one has the impact on former, that at the moment some specialists talk about financial globalization.

Under the influence of economic and foreign exchange, functionalities of international foreign exchange market have been formed: increasing market capacity, diversifying foreign exchange trading instruments (Krasavina, 2012).

The dynamics of daily volume of transactions on international foreign exchange market is shown in Figure no. 1.

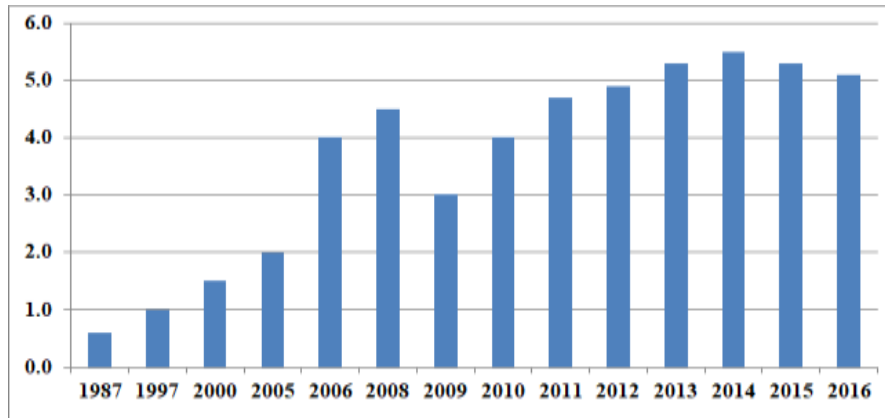


Figure no. 1. Dynamics of the daily volume of transactions in the international forex market (trillion US dollars)

Source: Fetiniuc and Luchian, 2014.

This figure shows that since 2009 there is a continuous increase of total volume of daily transactions on international foreign exchange market from 3.0 trillion USD to 5.5 trillion USD in 2014. And in 2015 and 2016 this volume dropped to , respectively 5.3 trillion USD and 5.1 trillion USD.

In the perspective of 2019, this indicator is expected to grow by 7.8 trillion USD. (Finance Magnates, 2017).

The dynamics of structural changes on international forex market in terms of applied instruments is presented in Figure no. 2.

According to estimates by some experts, by 2016 the spot market reached 1.7 trillion USD, increasing over 2001 by 1.3 trillion USD or about 4,4 times. The swap foreign exchange market will reach 2.4 trillion USD, rising by 1.7 trillion USD over 2001 or 3.6 times. The OTC spot exchange market will reach level 1 trill. USD, increasing compared to 2001 by 0.8 trillion USD or 5.1 times

4. Monetary polycentrism and regionalism

Monetary polycentrism is expressed through the use of several competing currencies as world currency. The transition after World War II from World Monetary Monopoly to monetary polycentrism policing began to be promoted as a result of formation of three world financial centers - United States of America, Western Europe and Japan - from the late 1960s (Studme.org., 2017).

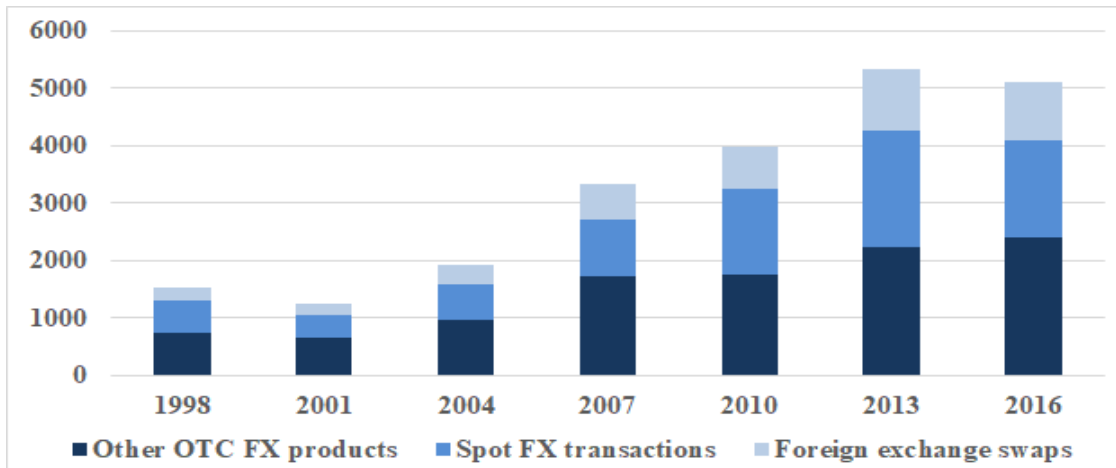


Figure no. 2. Dynamics and structural prospects of FX market for during the period 1998-2016

Source: Lmax, 2013.

For example, when the Jamaica Monetary System (1976-1978) was created, International Monetary Fund (IMF) initially included 16 currencies in the list of freely usable currencies and four currencies now - US Dollar, Euro, British Pound and Yen.

The further development of a multi-polar world is manifested by the trend of traditional center's share (from 40% in 2009 to 28% in 2030) and the increase in share of rapidly developing countries in the global economy (eg China and India up to 25% in 2020 and 33% in 2030) (Studme.org., 2017).

On this basis strengthens the trend of internationalization of national currencies use, which are not included by IMF in the list of freely used currencies. The financial and economic crisis of 2007-2009 has influenced the development of a new trend for reciprocal use of national currencies in international settlements, which are not freely convertible on the basis of central bank agreements (eg Russia with China, Brazil in the year 2011) and decisions adopted at BRICS meetings.

Monetary polycentrism has developed in connection with triggering of regionalization process in international foreign exchange relations. This trend can be noticed in application of regional currencies in economic and regional associations (Krasavina, 2011).

An additional factor for use of several competing national currencies as world currencies was the change in the ratio of forces between international economic and financial centers.

During the 18th and 19th centuries dominated international foreign exchange relations, being the base reserve currency. Then, after the end of First World War, formation began and then there was a strengthening of a new financial and economic center in USA, which led to the trend of moving from monopoly to currency polycentrism. Thereafter, the transition to US dollar-based monetary monopoly followed and then again the changeover to foreign exchange polycentrism (Krasavina, 2011; Shishkov, 2004; Trutneva, 2017).

Towards the end of the 20th century the trend of gradual reduction of US Dollar's role as dominant international currency and intensification of competition from other currencies was formed. This long-term trend has been reflected by following (Struk, 2012):

- Gradual reduction of US Dollar weight in international foreign exchange reserves;
- Increase of pound sterling, Swiss franc, Norwegian Crown, Australian Dollar, New Zealand Dollar in world currency;
- Reducing the amount of trading pairs with US Dollar, Euro and Yen (USD/EUR, USD/YEN, EUR/YEN);
- Reducing the weight of US Dollar in the structure of international bank loans and in the volume of international banking assets, as well as amount of annual net issuance (excluding the amount of depreciation) of international borrowing instruments and total amount of non-repayable debt related to international borrowing instruments.

But the international financial crisis of 2007-2009 again increased the attractiveness of US Dollar for investors, especially as a means of investing in short-term assets and preserving liquidity. Some countries have had to depreciate their national currencies against the US Dollar.

At present, the reflection of foreign exchange policing can be seen in international currency unit - Special Drawing Rights (SDR) foreign exchange basket on which Jamaica International Monetary System is based.

Currently in this currency basket have been included Euro, US Dollar, Yen, British pound and from 1 October 2016 - Chinese Yuan (IMF, 2016).

Monetary polycentrism has begun to develop in connection with the emergence of regionalization in international foreign exchange relations. This trend can be noticed in the application of regional currencies in regional and economic communities.

Monetary regionalism, of course, remains the result of monetary globalization in terms of its proportions, through which its specificity is manifested, but the in-depth examination shows that it is based on the economic integration in region that exceeds the internationalization of foreign exchange relations (Krasavina, 2011).

Monetary regionalization means different trends and forms of foreign exchange integration of countries in a particular region of the world with a view to forming a common currency area, introducing a unique currency unit and promoting unique monetary and lending policy to limit the negative impact of global trends in economy on global currency markets.

The tendency of currency space regionalization becomes irreversible. Searching for mechanisms to protect national economies within a geographic space becomes the trend of global development.

The most notable was the introduction of EURO during the years 1999-2002, which has gained historical significance throughout European space. Currently, this is the official currency of 19 countries in 27 member states of European Union. In a relatively short period of time, EURO became the second most important currency in the international financial circuit.

However, since 2010, EURO area has been characterized by distinct financial crisis phenomena as a result of many problems of European Monetary System and European Union's economic system

It is interesting to note the draft introduction of Euro-Asia Economic Union, which includes following countries: Belarus, Kazakhstan and Russia, Armenia and Kyrgyzstan. This idea has been reflected in political statements on Euro-Asian economic integration in 2011 (Camonitor, 2017).

Recently Euro-Asiatic Development Bank has proposed the creation of a regional settlement currency (Camonitor, 2017).

It is also worth mentioning the introduction of Islamic Gold Dinar (sometimes called Islamic Dinar or Golden Dinar) - a gold coin - made of 4.25 grams of 22 carat gold,

which is actually a reconstruction of golden dinar, which at the time was the leading currency in Islamic world. Currently it is used by Malaysia to make settlements with Brunei, Iran, Bangladesh, Yemen, Maldives and other Muslim countries. All attempts to use Islamic Golden Dinar among OPEC countries collided with active resistance of IMF.

In the context of great importance is AMERO.

The idea of the AMERO currency emerged in 2005 at the meeting in Texas between presidents George W. Bush, Vicente Fox and Canadian Prime Minister Paul Martin. In 2007, the initiative was redacted at Quebec meeting.

Since 2006, we have been talking about the creation of single currency in ASEAN (Asia-Pacific Cooperation Organization), China, Japan and South Korea.

By 2028, the introduction of AFRO - the single currency of African Union, is expected. At present, Western African Monetary Union, African Union Central African Union and South African Customs Union.

Since 2010, there is Unique System of Mutual Regional Settlements within Bolivarian Alliance of People of America (Alliance Bolivarian para los Pueblos by Nuestra América), which brought together 11 Latin American and Caribbean countries on basis of SUCRE.

So far, there is talk of a possible single currency for Union of South American countries (Unión de Naciones Suramericanas) (EER, 2017).

5. The problem of world currency creation

At the G20 summit in April 2009, Russia called for a supranational reserve currency as part of a global financial system reform. G20 also suggested that IMF (or a G20 ad-hoc working group) conduct specific studies to review the following options (Zhong, 2016):

- Extend (diversify) the list of currencies used as a reserve, based on agreed measures to promote the development of major regional financial centers. In this context, the possibility of establishing specific regional mechanisms to help reduce the volatility of exchange rates of these reserve currencies should be considered.

- Introducing a supranational reserve currency to be issued by international financial institutions as well as a review of feasibility and need for measures to ensure that SDRs are recognized as an over-reserve currency by entire world community.

On March 24, 2009, Zhou Xiaochuan, chairman of People's Bank of China, called for "the creative reform of existing international monetary system towards an international reserve currency," considering that "would significantly reduce risks of a future crisis and enhance crisis management. He suggested that IMF's SDR could serve as a super sovereign reserve currency that could not be easily influenced by policies of individual countries (News BBC, 2017).

On 30 March 2009, Venezuelan President Hugo Chavez proposed the creation of a petro-currency on Second Summit in Qatar. It would be backed by huge oil reserves of oil producing countries (USA Today, 2009).

An alternative definition of a global or global currency refers to a hypothetical currency or a *supercurrency*, such as proposed TERRA or DEY (acronym for Euro Dollar Euro) issued and maintained by a global central bank used for all transactions worldwide, irrespective of entities nationality (individuals, corporations, governments or other organizations) involved in transaction. There is currently no such official currency.

Advocates of this idea (especially Keynes) of global currency claim that such a currency would not suffer from inflation, which, in extreme cases, had disastrous effects on economy. In addition, many claim that a single world currency would make international business more efficient and encourage foreign direct investment.

There are many different variations of this idea, including the possibility for it to be managed by a global central bank that will define its own monetary standard or comply with the gold standard (Gold Eagle, 2017).

A limited alternative would be a global reserve currency issued by the International Monetary Fund as an evolution of the existing SDR and used as reserve assets by all national and regional central banks (News Max, 2009).

As another world currency, it was proposed to use the conceptual currency to support transaction between countries. The basic idea is to use the trade balance to cancel the currency actually needed for trading (Zhong, 2016).

In addition to idea of a single world currency, some evidence suggests that more global currencies can evolve in the world, changing within a single market system. The growth of global digital coins owned by companies or private groups suggests that more global currencies can offer wider trading formats as they gain wider power and acceptance. (Fortune, 2010).

Some sources consider Bitcoin as a future global currency (Mindwork, 2017). It is a decentralized electronic payment system and a digital opensource coin created in 2009 by Satoshi Nakamoto. Bitcoin was created to ensure investment protection and free business finance, without resorting to financial institutions and beyond any constraints and regulations. Bitcoin name also refers to opensource program for using these coins as well as to the peer-to-peer network (peer-to-peer) that it forms (Mindwork, 2017). But at the same time, some experts see Bitcoin as a new financial bubble.

6. Conclusions

Monetary globalization is, on the one hand, the form of the superlative development of the foreign exchange relations and, on the other hand, it is a specific form of financial globalization, becoming, in fact, its catalytic factor.

An important feature of this is the continuous development of international currency market both in terms of quantity and quality.

Monetary globalization is closely linked to transformation of International Monetary System by disengagement from currency monopoly initially based on British pound, then on US Dollar, and shift to foreign exchange polycentrism, in the foreign exchange circuit, freely exchangeable currencies and other regional currencies with significant currency.

An important challenge of foreign exchange globalization is the development of a mandate currency issued by an international financial institution empowered..

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THE ROLE OF SOCIAL MEDIA IN INCREASING COMPETITIVENESS OF COMPANIES

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***Abstract:** The transition from Internet access, mainly from desktop / laptop to Internet access via mobile devices, is one of the factors behind the increase in the number of Internet users and, implicitly, the increase in the number of Social Media users. As a result, companies are increasingly attributing their presence to the Internet by creating websites that offer more functionalities and using Social Media platforms. Starting from these premises, the paper aims to present an analysis of how companies use Social Media to increase their competitiveness. The results of this analysis present the benefits brought to companies by using Social Media platforms.*

***Keywords:** Companies, Social Media, Internet, Customer.*

***JEL Classification:** L82, L86.*

1. Introduction

Presence in the online environment is a basic condition for a successful business, through Social Media companies being able to provide customers accessible, useful, relevant information that has an appropriate presentation.

Almost every Internet user accesses at least one Social Media platform daily, Facebook's social networking site being the first, followed by YouTube, and instant messaging (WhatsApp, Facebook Messenger) (Statista, 2018). Corporate blogs/microblogs as well as wiki-based knowledge sharing tools are also used to promote companies.

Corporate blogs, through the link they establish between the company and users / customers, bring a number of benefits such as:

- ◆ Increasing traffic to the company's website by creating relevant content for customers as well as by inserting links in published articles into various pages of the site;
- ◆ Imposes the company as an expert in the online community by posting articles demonstrating good training in the field of work that answer readers questions and add value;
- ◆ Improves site listing position in major search engines by using keywords in both page titles and content;
- ◆ Increases the visibility of the company in the online environment.

2. Using Social Media by companies

In 2017, the average EU-28 of companies (excluding the financial sector, with at least 10 employees) who had a website was 77%. Finland ranks first with 96%, followed by Denmark (95%) and Sweden (91%). Romania occupies the last place with 45% (% of companies) (Eurostat, 2018°).

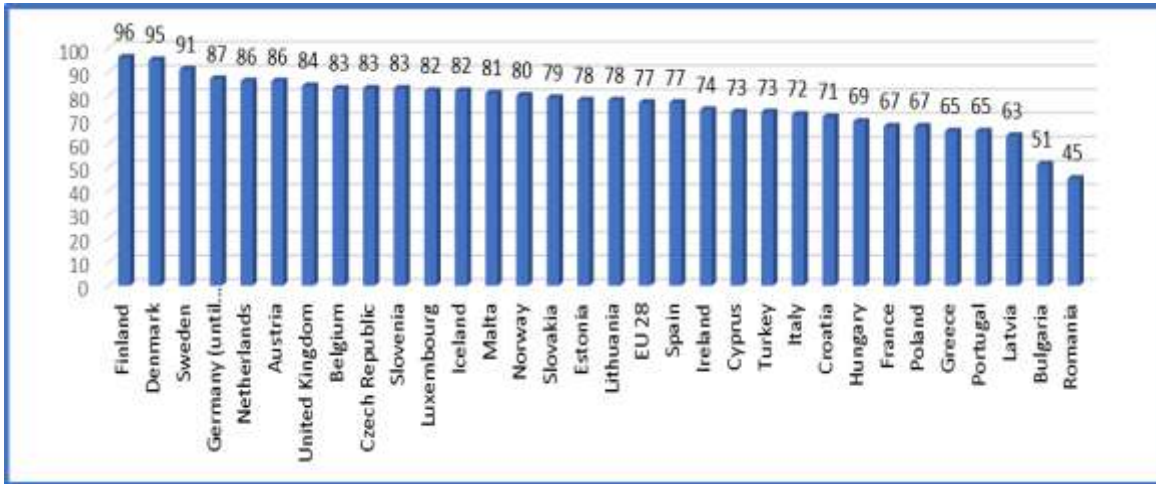


Figure no. 1. Companies that have a website, 2017, (% of enterprises)
Source: Eurostat, 2018a. *Websites and functionalities* [online] Available at: <http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ciweb&lang=en> [Accesed 14 February 2018].

Of these companies, at the EU-28 level, 47% use at least one Social Media platform (from 2014). The first place is occupied by Iceland (79%) (% of companies), followed by Malta (74%) and Norway (72%). For Romania, the percentage is 35% (Eurostat, 2018b).

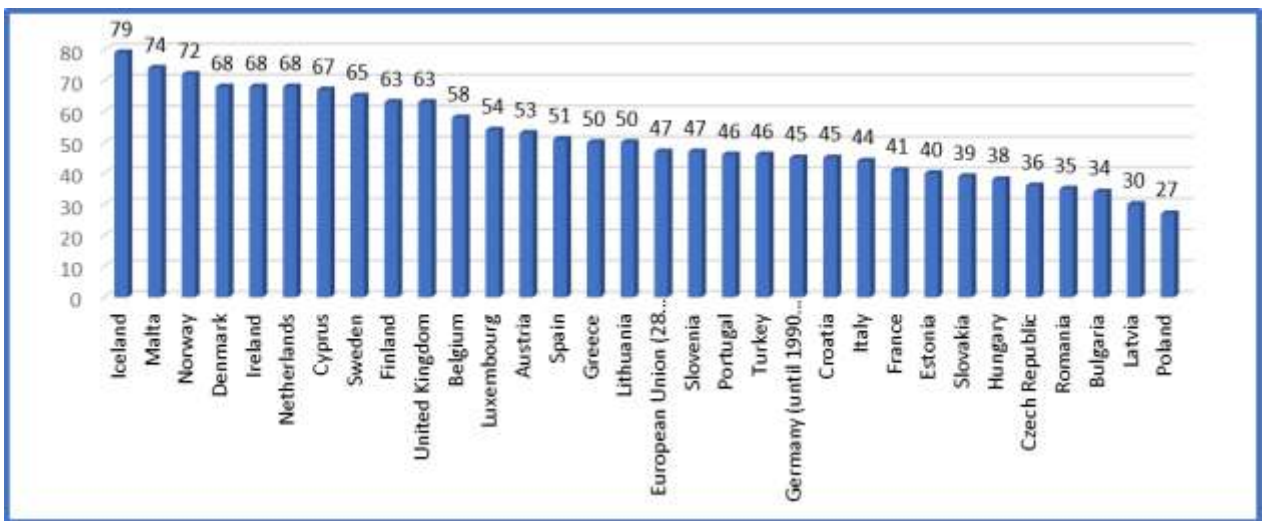


Figure no. 2. Companies using any type of Social Media (since 2014), 2017, (% of enterprises)

Source: Eurostat, 2018b. *Companies using any type of Social Media* [online] Available at: <<http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>> [Accesed 14 February 2018].

It is interesting to note that all three types of companies (large, medium and small) use Social Media platforms as tools of the communication strategy, aiming at achieving a competitive advantage. At the EU-28 level, in 2017, 68% of large companies used social networks, 35% of them used multimedia content websites, 42% used corporate blogs / microblogs and 19% used sharing tools of wiki-based knowledge (Eurostat, 2017a).

Also, social networks were used by 54% of medium-sized companies and 43% of small businesses in 2017; multimedia content websites were used by 21% of medium-sized companies and 13% of small businesses; corporate blogs / microblogs were used by 25%

of medium-sized companies and 13% of small companies, and 8% of medium-sized companies and 4% of small companies used the wiki-based knowledge sharing tools (Eurostat, 2017a).

Percentages varies a lot from one country to another. Thus, with regard to the use of social networks, Romania is on the antepenultimate place with 34%, the EU-28 average being 45%. Along with Poland and Hungary, Romania ranks the penultimate place (5%) in the use of corporate blogs / microblogs, the EU-28 average being 14%, and in terms of the use of multimedia websites, Romania ranks last along with Bulgaria with 7%, the EU-28 average being 16% (Eurostat, 2017b).

According to data provided by Eurostat, companies in the European Union (EU-28, 2017) use Social Media mainly for (Eurostat, 2017c):

◆ Increasing the company's awareness or the products and services offered (40% being the European average, 28% being the percentage recorded by Romania). The first place is taken by Malta and Iceland by 66%, followed by Cyprus by 63% and Ireland by 58% (Figure no. 3). Of these, 85% are large and medium-sized companies and 83% are small companies (Eurostat, 2017d).

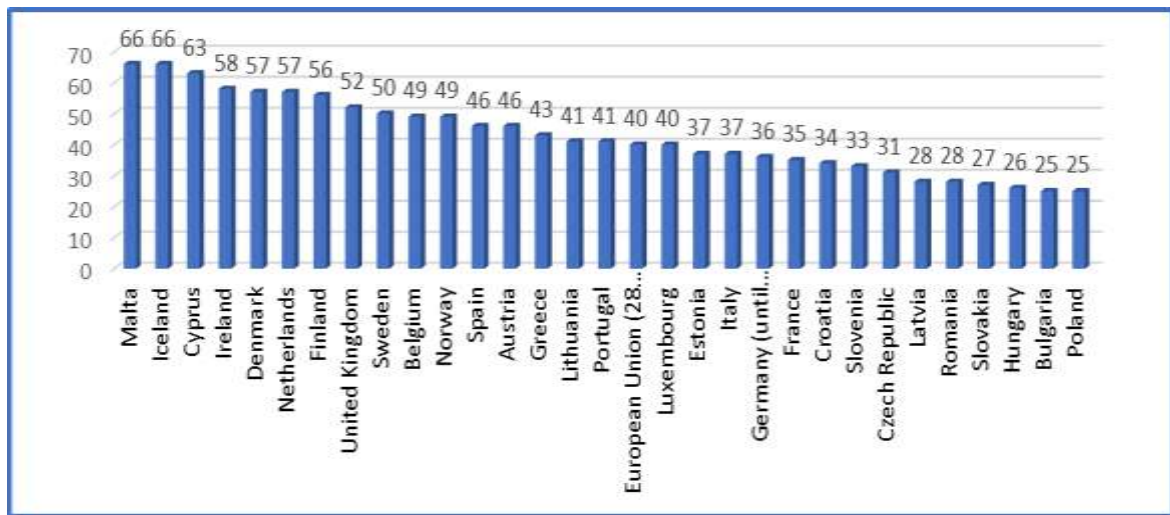


Figure no. 3. The use of Social Media by companies, (without the financial sector, with a minimum of 10 employees) for the development of the company's image or market products, 2017 (% of enterprises)

Source: Eurostat, 2018b. *Companies using any type of Social Media* [online] Available at: <<http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>> [Accesed 14 February 2018].

◆ Obtaining opinions, reviews from clients, or answering customer questions is the reason why 27% of European companies choose to use Social Media platforms (Figure no. 4). Of these, 60% are large companies and 56% are small and medium-sized companies. Romania occupies the antepenultimate place with Estonia and Slovenia, with 20% of all companies (Eurostat, 2017d). The first place is occupied by Iceland with 54%, second place, with 51% being Cyprus and Malta, followed by Ireland with 42%.

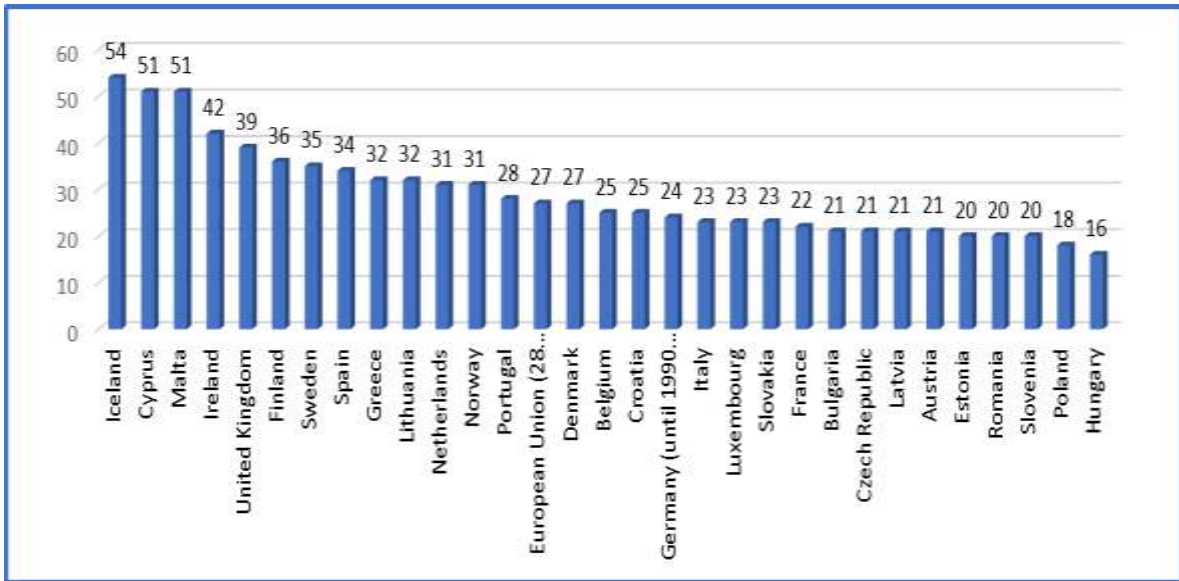


Figure no. 4. Social Media use by companies, (without the financial sector, with a minimum of 10 employees), for getting / answering customer opinions, reviews, questions, 2017 (% of companies)

Source: Eurostat, 2018b. *Companies using any type of Social Media* [online] Available at: <<http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>> [Accesed 14 February 2018].

◆ recruiting employees.

Figure 5 shows that at the EU-28 level, 23% of companies choose to use Social Media platforms to recruit staff, with Malta (52%) ranking on the first place and Italy (10%) on the last one. Romania is on the penultimate place with 11%. Regarding the size of the companies, 72% of the large companies, 59% of the medium companies and 45% of the small companies recruit staff through Social Media (Eurostat, 2017d).

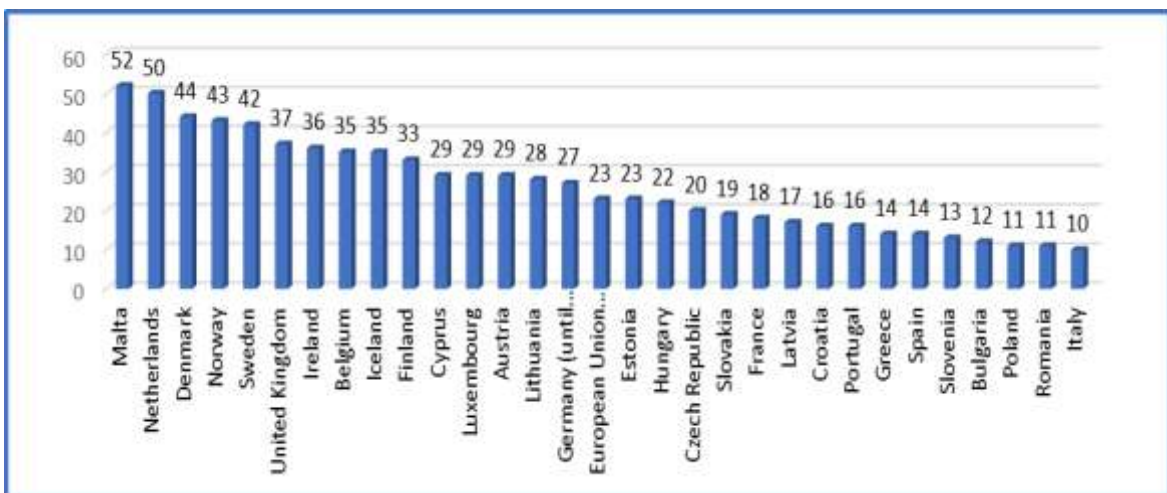


Figure no.5. Social Media use by companies, (without the financial sector, with a minimum of 10 employees) for recruitment, 2017 (% of enterprises)

Source: Eurostat, 2018b. *Companies using any type of Social Media* [online] Available at: <<http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>> [Accesed 14 February 2018]

Companies also choose to use Social Media platforms when they want to involve customers in developing their own goods or services, when collaborating with other companies or business partners, or for internal communication.

In Romania, 90% of companies use Social Media platforms for communication, 75% for marketing and 39% for sales (Financial Market, 2017) (according to the study "Like & Share" –Social media marketing in companies from Romania in 2017 by Valoria Business Solution) (Figure no. 5).

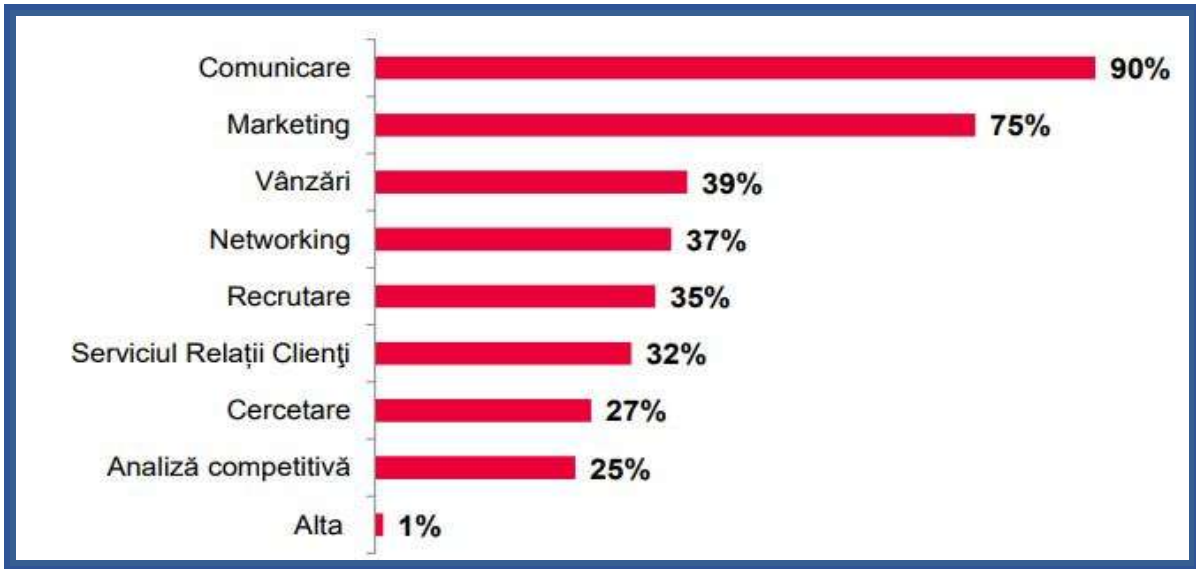


Figure no. 5. The use of Social Media by companies in Romania, 2017

Source: Financial Market, 2017. 93% dintre companiile din România consideră marketingul pe rețelele de socializare ca fiind un avantaj competitiv. [online] Available at: <<https://www.financialmarket.ro/featured/93-dintre-companiile-din-romania/>> [Accesed 12 February 2018].

It is important for companies to look at Social Media "as an investment, not as an extra cost they can not avoid," because Social Media activity can be linked to business indicators (IQads, 2018), globally 41% of companies measuring investments in Social Media compared to 59% in Romania (Doing Business, 2017).

Regarding the investments made in promotion by Romanian companies, 37% invested less than 1000 euro/year, 25% invested between 1000 and 3000 euro/year, 11% invested between 3000 and 5000 euro/year, 9% invested between 5000 and 10000 euro/year and 13% invested more than 10000 euro/year (Doing Business, 2017).

Against the background of the increase in the number of Internet users, traditional media (radio, television, print media) are increasingly losing ground. As a result, companies are increasingly focusing on the Internet by using Social Media platforms for marketing and advertising campaigns.

In Romania, 93% of companies consider that marketing on social networks is a competitive advantage in interacting with current and potential customers, this activity being in the top position in Social Media activities for industrial production companies (27%), financial-banking services (24%) and food industry (21%) (Doing Business, 2017).

Regarding the use of Internet advertising by companies in 2016, Romania ranks last with 12% of all companies (excluding the financial sector, with a minimum of 10

employees), the EU average being 25%. First places were occupied by Malta (46%), Sweden (42%) and Denmark (40%) (Figure no. 6).

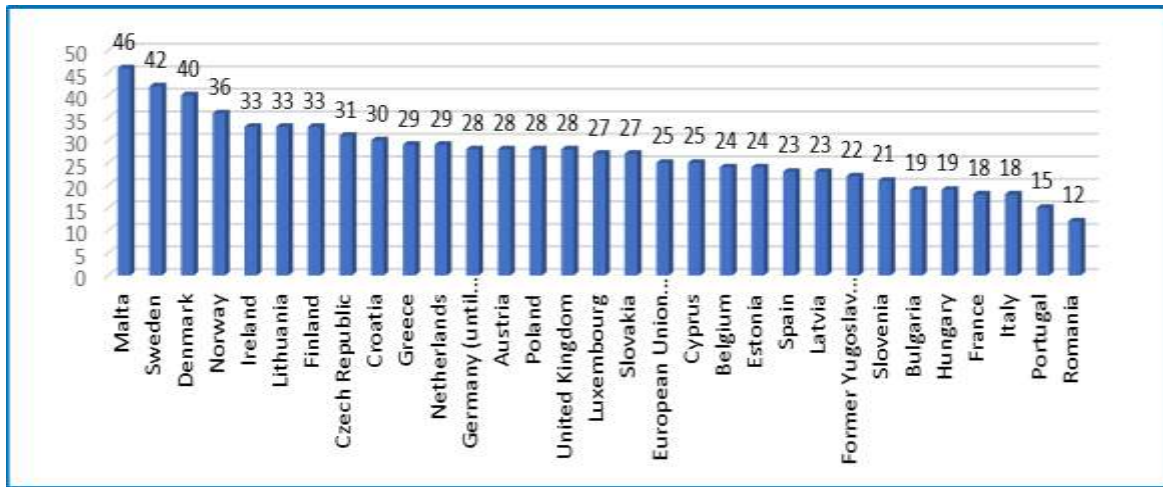


Figure no. 6. Companies that advertise on the Internet (without the financial sector, with a minimum of 10 employees), 2016, (% of companies)

Source: Eurostat, 2016. *Statistics Explained. Enterprises' internet presence.* [online] Available at: <[http://ec.europa.eu/eurostat/statistics-explained/index.php/File:V3_Enterprises%27_internet_presence_\(use_of_internet_ads_by_type,_websites,_social_media\),_2016.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:V3_Enterprises%27_internet_presence_(use_of_internet_ads_by_type,_websites,_social_media),_2016.png)> [Accesed 14 February 2018]

Regarding the Social Media platforms used by Romanian companies for sponsored ads, the top 3 places are occupied by: Facebook (81%), Google (50%) and LinkedIn (14%) (Valoria, 2017).

3. Conclusions

The benefits of using Social Media platforms (Facebook, Twitter, LinkedIn, Instagram, YouTube, Pinterest) to large companies, but especially to small and medium-sized companies, are incontestable. Of these, in order of importance, we recall (Wtm, 2017):

- ✓ increasing the company's reputation;
- ✓ increasing traffic on the company's website;
- ✓ increasing the customer loyalty rate;
- ✓ generating a market outlook;
- ✓ lead generation;
- ✓ recognition as an expert in the field of activity;
- ✓ increasing the number of business partnerships;
- ✓ increased sales.

The use of Social Media platforms within companies has resulted in improved employee engagement, better internal collaboration, and bidirectional dialogue with decision-makers (Tech Funnel, 2017).

In the context of a global economy, in order to gain a competitive advantage, companies in Romania should attach greater importance to:

- ✓ presence on the Internet (which would lead to an increase in the number of companies that have a web site);

- ✓ increasing Social Media investment (by using social networks, using corporate blogs / microblogs, using multimedia websites).

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IMPLEMENTATION OF RESPONSIBLE LENDING PRINCIPLES IN THE REPUBLIC OF MOLDOVA: DRAWBACKS AND OPPORTUNITIES

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Abstract: *The huge negative effects of the global financial and economic crisis that increases significant credit risk prompted international community and financial organizations to launch and to promote responsible lending practices, to develop a set of principles and practices in order to minimize credit risk through responsible lending. Responsible lending benefits consumers and minimises the risk of abusive practices and over-indebtedness and this implies lower credit risk for the creditor. In the Republic of Moldova this subject is very actual due to a high level of non-performing loans. According to data presented by the National Bank of Moldova, in recent years the volume and the ratio of non-performing loans in total credit portfolio is continually increasing. The purpose of the research is to establish responsible crediting principles, identify factors, methods and techniques that will minimize credit risk for both debtors and creditors.*

Key-words: *responsible lending, credit procedures, credit risk, non-performing loans, credit portfolio, banks, creditor, debtor.*

JEL Classification: *E52, E58, G21.*

1. Introduction

The global banking crises from 2008-2009 has revealed that an unsustainable financial services' offer based on irresponsible lending implies risks not only for the related debtor and creditor, but for the whole financial sector and country. In this context, the authorities and credit institutions need to take into consideration that irresponsible lending of consumers and unthinking use of retail credit products significantly increase the credit risk because over-indebtedness is one of the most serious cause of default, endangering social impact and stability.

The huge negative effects of the mentioned global financial and economic crisis that increases significant credit risk prompted international community and financial organizations to launch and to promote responsible lending practices, to develop a set of principles and practices in order to minimize credit risk through responsible lending.

Internationally, there is an increasing interest in the topic of responsible lending. At the request of the G20, the Financial Stability Board produced a report "Consumer finance protection with particular focus on credit" (2011), which includes the results of a survey of its membership on regulatory approaches to consumer credit.

A handful of countries have also passed legislative and regulatory guidelines on the topic (for ex. Australia, Malaysia and South Africa). However, the content of the measures and whether the will and resources are available to support enforcement.

The purpose of the research is to establish responsible crediting principles, identify factors, methods and techniques that will minimize credit risk for both the debtor and the creditor.

Methodology of research: study of the profile literature, systemic method, logical method, analogy, analysis and synthesis, induction and deduction, graphical method, comparison, method of analytical tables.

2. Overview on responsible lending

Financial institutions that offer loans and credits to the consumers is quite diversified. Principles that creditors provide also can be different. Generally, if during lending process the creditor takes into consideration the interest of the debtors, it is known as responsible lending. From the opposite side, when creditors mislead the needy debtor for their own advantage, this is known as irresponsible lending. Consumers face an aggressive, predatory selling practice pushing expensive, complex products that debtors can ill afford and do not understand. Disclosures are either after the fact, or hidden in legal jargon in fine print in contracts which consumers are pressured to sign in haste (Consumers International, November 2013). Failing to achieve the moment's gain, in a long term irresponsible lending is a destructive process that leads to losses for all the involved parties and cannot lead to sustainable development.

In economic literature, the responsible lending concept is presented in a different way and perspective. As there are no internationally recognized standards on responsible lending, individual countries have used a wide range of regulatory approaches. Some rely primarily on regulating information disclosure, expecting consumers to be capable of making adequate decisions. Other countries place the burden for responsible lending primarily on creditors, requiring them to assess the suitability of the loan for each consumer. Others opt for more prescriptive solutions, defining interest rate ceilings, maximum debt-to-income or loan-to-value ratios or limits for penalties and late fees (World Bank, October 2013).

The responsible lending is understood as the development of lending activities of credit institutions where credits are granted in compliance with certain provisions creating preconditions for the proper assessment of the debtor's solvency and preventing from assuming the excessive credit risk.

In summary, these three simple principles — driven by common sense, good business practice and support for the customer's needs, guide credit officers to use the following rules:

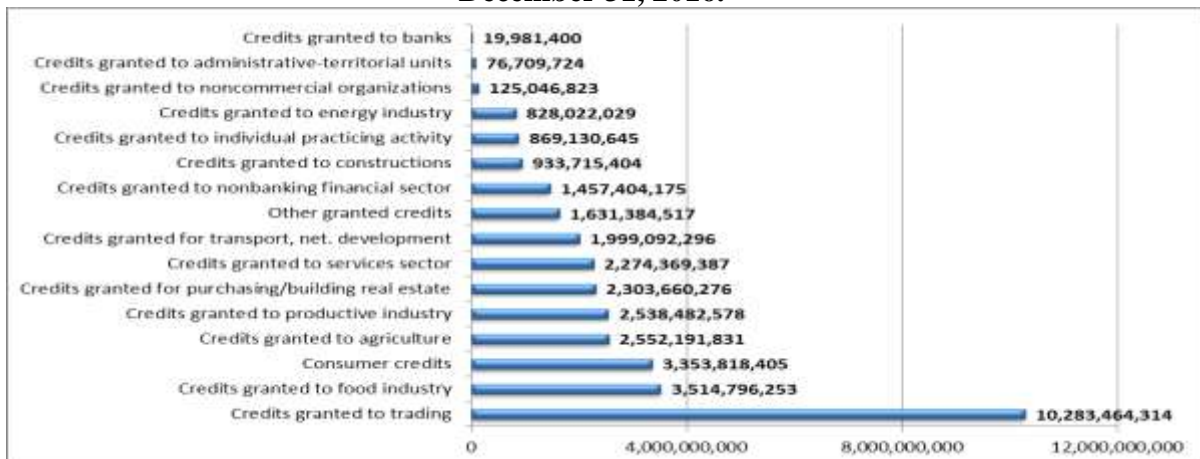
- the customer must have the ability to repay the loan according to its terms and conditions and the customer's financial circumstances.
- the loan transaction must deliver benefit to the customer.
- credit officer should support the customer's goal of making informed choices.

3. Analysis of debtors on the credit market of the Republic of Moldova

On the credit-banking market of the Rep. Moldova debtors are legal entities and private persons. The volume of legal entities' credit portfolio in amount of 28.346,92 million lei is much bigger than private persons' credit portfolio in amount of 6.414,35 million lei, as of December 31, 2016 (NBM, 2016).

Analyzing figure no. 1, we observe the distribution of the demand for credit products and the concentration by brunch.

Figure no. 1. Volume of total credit portfolio by the credit products, as of December 31, 2016.



Source: BNM, 2016

Analyzing the credits from the banking system by branch of activity, it was established that the largest share of credits is for trade. For private persons the biggest demand is for the consumption credit, with the share of 10%, then credits granted for purchasing/building real estate with the share of 7%, followed by other granted credits with the share of 5%, that is including loans granted to individuals, except individuals performing an entrepreneurial activity, that are classified under "Other loans" according to the characteristics of the group of accounts. The smallest share for the private individuals is for credits granted to individual practicing activity with the share of 3% (NBM, 2016).

From data presented above, we can conclude that individuals in Moldova are consumer-oriented, which is also shown on the demand part of entities in case of credits granted for trading. Usually, a credit product for consumption is easier to obtain, especially for short term maturities and for small amounts as contrary to real estate loans. Still, the negative aspect is that consumption loans are more risky for both participants – debtor and creditor due to the following reasons:

- the debtor does not pay attention to some important details such as the effective annual interest rate, whether or not there are some hidden commissions. Thus, the client can simultaneously request more small credits and thus significantly increase his debt level;
- the creditor does not make a detailed financial analysis and does not check the payment potential of the debtor because it is considered that a small amount involves lower risks that will not influence too much the financial situation of the creditor. But this attitude can provide over-indebtedness and increase of non-performing loans.

The low share of 7% for credits granted for purchasing/building real estate is the result of low revenues of consumers, as well as tougher creditors' official requirements and conditions for credits' granting. The positive side is that a real estate loan can be less risky for both participants – the creditor and debtor, due to the following reasons:

- before granting a real estate credit, the creditor should make a detailed examination of the customers' financial situation and establish the payment potential, thus the debtor's default is less probable to be produces;
- it is a guaranteed credit. On the other hand due to the fact that it is a long-term credit, the risk that the debtor's revenues will be reduced over time may appear, thus some unexpected major expenses may result.

As it was mentioned above, besides the conditions imposed by the credit product, the financial situation of the customers influence their preference to choose or not some credit products. Moldova is the poorest country in the Europe with low monthly income for population, and often the borrowed amount just cover some minimum necessary things.

The most important sources of revenues are: salaries – 43,5%, social benefits - 25,8% and remittances – 14,6% according to data presented by official statistics for 2016 (Moldovan Economic Trends, Q III, 2017).

The most paying types of economic activities are: information and communications, financial and insurance activities, production and supply of electricity, heat energy, gas, hot water and conditioned air. As regarding the least paid activities, the lowest salaries were paid in the following domains: art, leisure and recreation, accommodation and food service and agriculture, forestry and fishing.

The self-employment activities with a weight of 12,4% of the total average monthly revenue per capita of which: from agricultural individual activities – 8% and from non-agricultural individual activity – 4,4% also contributed to the creation of revenues.

Another barrier that stops the implementation of responsible lending principles in Moldova is low level of financial education of population. In fact, financial education is an important factor that reduces the credit risk and should be part of responsible lending policy.

In Rep. Moldova, national authorities understood the importance of population financial education, thus some important reforms have already been implemented:

- The Ministry of Education of Republic of Moldova introduced in the Curriculum optional lessons on financial educations for secondary school students and some methodological guides;
- the National Bank of Moldova started discussions on the elaboration of the National Strategy concept on Financial Education. These were held at a conference bringing together representatives of the public authorities, the educational environment and civil society, educational experts and market participants, financial analysts from the Republic of Moldova, economic analysts, as well as external partners. The event was eloquently featured in the International Financial Education Week and The project initiated by the National Bank on this occasion - "Opens the heart to financial education";
- the National Bank of Moldova organizes Financial education courses on International Savings Day;
- in the context of options for financial education, the National Bank of Moldova in partnership with the European Fund for Southeast Europe (EFSE) has edited and proposed to children the books: "A trip to the world of money" and "Financial Education Guideline";
- almost 400 children, accompanied by teachers, are admitted to the National Bank of Moldova during the International Financial Education Week 2017, which takes place under the heading "Learn. Save. Win.". The purpose of the action is to encourage entrepreneurship, especially among young people, to widely inform the public about the role, functions and functions of a financial-banking institution and to explain the basic principles of the economy.
- during the Global Money Week banks were very active in promoting various activities. For example, in order to support the Financial Education Program, a commercial bank launched a new type of bank deposit "Young." Another banks organized financial education lessons for teaching staff, pupils and students.

All these actions aimed at informing the consumer about the financial education, importance and the benefits consumers have. There were presented to the customers of different age and knowledge. If these actions continue to be carried out with a joint effort, the level of financial education of the consumers will increase.

4. Analysis of creditors in the Moldovan banking sector

In 2017 credit risk continues to be the most significant one. Thus the National Bank of Moldova will carry out on-site inspections at banks in order to assess the quality of the assets, 'large' exposures, exposures towards affiliated persons and will examine the policies and practices on credit risk.

A particular attention will be granted to non-performing loans, to their primary reimbursement modalities and to the quality of secondary reimbursement source, and in particular to the quality and value of loan-granting process. During these inspections, there will be also assessed the impact of deterioration of the quality of assets on the bank's capital, as well as the practice of restructuring or extension of loans' maturity.

At the same time, the risk control is continuing to be subjected to examination along with the risk level analysis. Thus, the banks' procedures, policies and strategies on the management and decrease of non-performing loans will be thoroughly assessed. In order to minimize the impact over the banks' capital caused by a possible deterioration of the loan quality, the National Bank of Moldova, as the supervisory authority, has requested the revision of the policies and strategies for the purpose of efficient monitoring and management of the level of non-performing loans. Thus, the NBM will assess the fulfillment by banks of the aforementioned request. At the same time, there are assessed, on daily basis, the loans granted by licensed banks during the off-site inspections in order to identify and supervise the loan portfolio, being also used the opportunities of the Credit Risk Register (NBM, 2017).

During this inspection, there will be also identified the groups of connected persons in order to determine the 'large' exposures and to prevent the exceeding of the established limits, taking into account that the excessive concentration may lead to losses registration by the bank and as a result, this may significantly influence the bank's capital in the context of the amendments made to the Law on financial institutions.

At the same time, following the amendments made to the "Regulation on bank transactions with its affiliated persons" in force as of November 2016, the inspections will be carried out taking into account the new provisions on loans granted to affiliated persons. Thus, as bank supervision priorities for the NBM will continue to be: assessment of the nature of relationships and transactions with the bank, using the new features for identifying the individuals who have relations or conduct transactions with the bank and/or with its affiliates, which will facilitate the monitoring of the compliance by the bank with the legal provisions on the transactions with its affiliated persons, including the exposure limits thereof (NBM, Banks supervision priorities, 2017).

During 2016, the National Bank of Moldova carried out quality assessments of the banks' shareholding and applied some remedial measures on large banks to ensure a transparent ownership structure. Thus, the assets recorded an increase and the banks became more resistant, being capitalized with a high liquidity level, which provides for the possibility to finance more actively the country's economy. At the same time, the banking sector has faced certain issues related to the high level of non-performing loans, maintaining the downward trend of the lending activity. In this regard, the banks continued to enhance their corporate governance and risk management framework to which they are subject.

The total volume of gross loans portfolio granted by banks decreased during the last years. As of December 31, 2016, gross loan portfolio amounted to 47,7% in total assets or MDL 34,8 billion, decreasing by 9,0% during 2016. Total volume of new loans decreased also by 12,8% than the similar period of last year. The decrease was determined mainly by the lack of loan demand and a more prudential approach applied by banks against potential debtors.

At the same time it is attested the migration of loans from legal entities to individuals and from foreign in national currency (44,86%). This tendency has an explanation – the stabilization of national currency in relation to reference currencies. Thus, the total volume of loans granted to individuals registered an increase by 154,61 mln. MDL, while credits provided to legal entities decreased by 727,70 mln. MDL, in the total volume of loans. This increasing trend in loans granted to individuals (from 15,61% in January 2016 to 21,99% in September 2017) demonstrates that Moldova is a largely consuming economy, as individuals are those that are mainly credited by consumption loans, while business is not willing or is not able to be credited (MET, Q III, 2017).

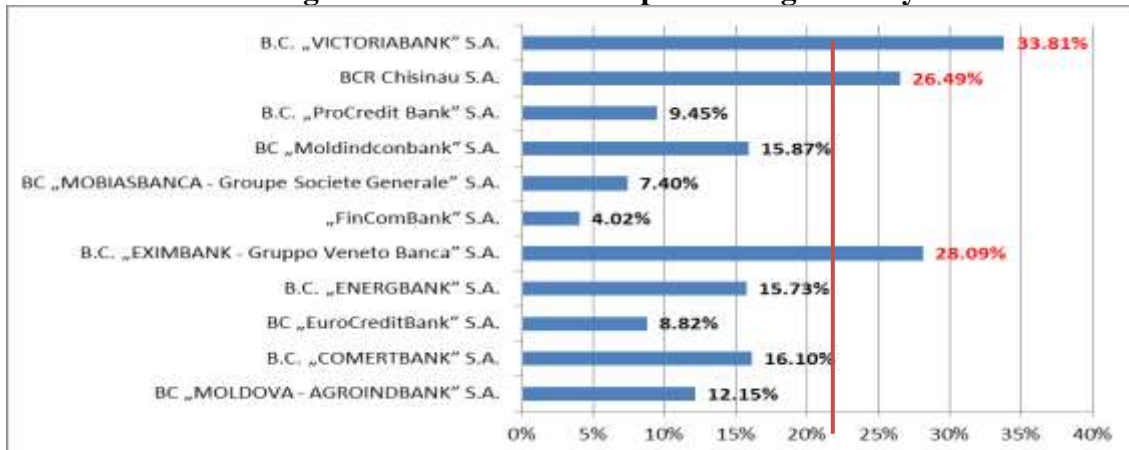
Figure no. 2. Loans dynamics by currency and debt category



Source: Moldovan Economic Trends, Q III 2017, p. 45

The two banks placed under intensive (special) supervision (out of three banks) recorded the highest upward trend of non-performing loans, also due to the requirements issued by the National Bank of Moldova for loan reclassification on the basis of the prudential approach applied by the National Bank of Moldova, these loans being granted prior to the establishment of the intensive (special) supervision by the National Bank of Moldova, thus: B.C. “Moldincombank” JSC – 23,07%, B.C. “Victoriabank” JSC – 30,11% (see figure no. 3).

Figure no. 3. Share of non-performing loans by bank.



Source: NBM, 2016

As of December 31, 2016, the share of non-performing loans (substandard, doubtful and compromised) in total loans portfolio at the banking sector was 16.31%, increased by 6.4% compared to the end of December 31, 2015. This indicator varies from a bank to another, as is presented in figure 3.

A high rate of non-performing loan denotes a less prudent attitude to the lending process of those banks, with the high credit risk portfolio and high probability of debtors default. Another reason can be a high risk of concentration on a large group of connected clients feeling difficulties or on a segment that indicates a significant decrease or can be a fraud. Anyway this denote a less responsible attitude and low risk management ability.

With reference to the prudential limits on maximum exposure of 15%, it should be mentioned that following the efforts made by the National Bank of Moldova, BC „Moldindconbank” S.A has taken a number of remedial measures and as of December 31, 2016, the bank has complied with the provisions of Regulation on large exposure.

The high level of the risk-weighted capital adequacy allowed the banks to absorb losses from worsened loan quality. In order to avoid the risk capital inadequacy for covering the potential losses in the case of further deterioration of the assets' quality, the National Bank of Moldova as the supervisory authority has requested the banks to review the policies and strategies for the efficient monitoring and management of the non-performing loans level and for strengthening the capital. The policies/strategies submitted to the National Bank of Moldova are in process of examination.

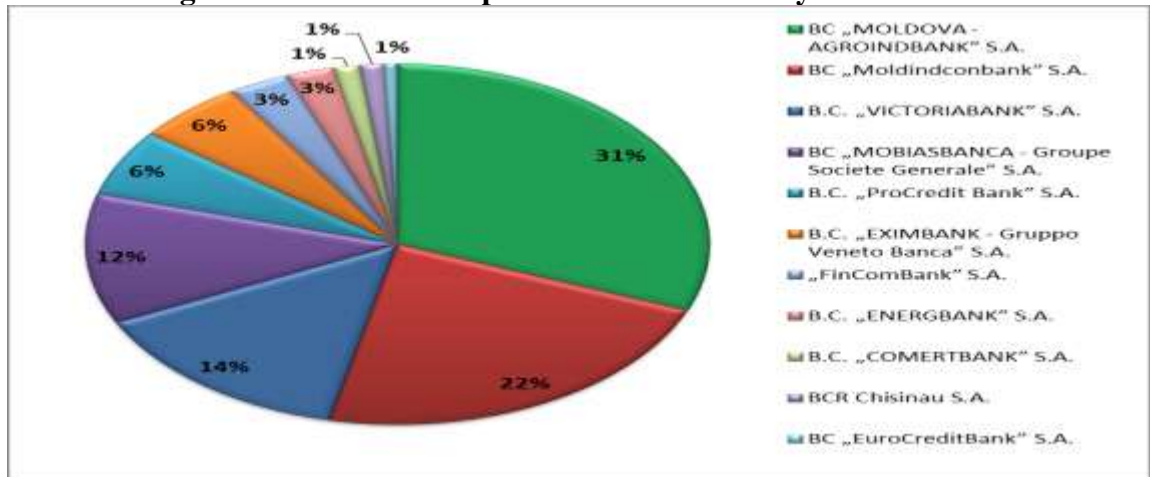
Considering that the capital is the main source of covering losses incurred in case of risks materialization, National Bank has previously requested the banks to adopt a more prudent and conservative policy relating to the distribution of dividends.

Thus, in order to strengthen the banks' capital, the National Bank of Moldova initiated some amendments to Regulation on risk-weighted capital adequacy, which refer to the redirection of the profit registered during the previous years, exclusively for the capital increase.

It should be mentioned that only the well capitalized banks are able to absorb all risks that could arise/materialize and participate actively in financing the entire economy.

As of December 31, 2016 the total balance of credit debt was 34,761.27 million lei. More than 85% of them are in portfolio of the biggest 4 banks. The bigger portfolio has BC “Moldova-Agroindbank” JSC with the volume of 10,774.66 million lei and share of 31%.

Figure no. 4. The credit portfolio distribution by the bank



Source: NBM, 2016

Weighted average interest rate on new loans in national currency granted in December 2016 was 11,74%, decreasing by 3,84% compared to the same period of last year. As compared to the previous month, the weighted average interest rate on loans in national currency decreased by 0,82%.

Loans with terms from 2 to 5 years are the most attractive. In December 2016, their share accounted for 40,94% of the total volume of loans in national currency and was granted at an average rate of 11,28%, in decreasing by 1,09% compared to the previous month.

5. Recommendation on implementation of responsible lending principles in Moldova

The importance of responsible lending is aware in Moldova and the first steps were taken by:

➤ Approving on May 29, 2008 the Law nr.122 on credit history bureaus, in force from March 01, 2009, in order to create the conditions for the formation, processing, storage and presentation by credit bureaus of the information characterizing the compliance by debtors of their obligations under the credit agreements, taking into account the need to increase the level of protection of creditors and debtors on the account of the general diminution of credit risks, in order to increase the efficiency of the activity of financial institutions and other lending companies.

➤ Approving on July 12, 2013 the Law no.202 on credit agreements with consumers, in force from March 06, 2014. This law creates the legal framework required to apply the provisions of Directive 2008/48/EC of the European Parliament and of the Council of 23 April 2008 on credit agreements for consumers and repealing Council Directive 87/102/EEC, published in the Official Journal of the European Union no. L 133/66 of 22 May 2008 and its purpose is to develop the legal framework necessary to ensure the protection of consumers' economic interests by creating fair conditions for obtaining consumer credits, as well as by establishing responsible behaviour rules for creditors in granting credits to consumers.

On the other hand, lack of any regulation act, guidance and procedures on the field of responsible lending makes difficult to apply legislation in practice. There is no

legislative or normative act that would clearly set out and treat the principles of responsible lending. Also an impediment is the lack of adequate enforcement of the current legal provisions. Now the content of the measures and accessible resources is not available to support enforcement of the process of implementation of responsible lending principles.

The Government of Republic of Moldova is concentrated in solving economic problems and macroeconomic issues and draws less attention to social questions.

The National Bank of Moldova now is focused on issues related to prudential regulation and in the field of banking regulation and supervision financed by the European Union in the context of the European Union Directive 2013/36/EU (Basel III) and Regulation 575/2013 (CRD IV) and not on the subject of responsible lending. However the good part is that National Bank of Moldova requested to all banks to create and approve a Strategy to reduce the share of non-performing loans.

Absence of progress in launching of responsible lending principles is caused by the relative lack of concerns that government and regulatory have for consumers, concentrating instead on macro-economic issues and prudential regulation.

The challenge remains in the details, too often regulatory action has been late in coming or ineffective, thus we recommend the following:

- all creditors should be subject to oversight by a single effective regulator;
- all creditors should be licensed and regulated by a single effective regulator;
- this regulator should have sufficient powers and resources to effectively control all creditors' market behaviour;
- regulator should monitor data about complaints and levels of consumer debt at the national level;
- regulator should have the power to apply sanctions proper to the degree of transgression, including withdrawal of license for serious gaps.

On the consumer rights field is recommended to create a responsible authority for consumer rights regarding financial activity. We consider that such authority should be created, as it is very important especially for the debtors and all the lending market. Where there is worry about high rates of credit products, this competition authority should investigate whether markets are competitive and, if required, take action to promote competition. If the market fails to keep rates at a reasonable level, regulator may consider the use of rate caps. For other fees and charges should be able to present their reasonableness confirmation.

Also in the content of consumers rights, creditors should have access:

- to the effective complaint mechanisms and dispute creditor's resolution;
- to independent advice if they are concerned that they may have not been treated fairly by a creditor;
- to expedient, inexpensive and efficient third-party mechanisms for dispute resolution in case those consumers are not satisfied with a creditor's response.

Taking into consideration the international practice, we suggest to introduce into national regulation and to apply the concept of financial consumer ombudsman - an official appointed to investigate individuals' complaints against maladministration in finance and for dealing with specific complaints concerning regulated financial service providers.

Regarding to the marketing and advertising practise on local credit market is to mention that often creditors do not comply with the legal provisions in this field. There for

we consider that should be a specific marketing code for financial institution, especially for credit products, enforceable with sufficient penalties to prevent abuse and noncompliance.

This code should include also the following request:

a) Creditor should comply with the general practices to ensure that advertising is not confusing for consumers. In this field creditor has to make sure that the key information is legible, audible and take care to disclose information in a level of detail that is commensurate with its importance, set out advertisements in a way that allows them to be readily understood by the intended audience, offered information can be readily understood by consumers without specialist knowledge.

b) When advertisements refer to fees or costs creditor ensure avoidance of giving an unrealistic impression of the overall levels of fees and costs of the credit products.

c) When advertisement refers to an interest rate or an amount of interest, creditor should display an annual percentage interest rate at least as prominently as any other interest rate or amount of interest, note if that rate is fixed, variable or capped and inform the consumer about applied fees that the debtor must pay when entering the agreement.

On financial education field, the following recommendations would be appropriate:

a) In order to support the existing initiative of customer information and financial education, the government in common with the National Bank of Moldova should be actively involved in the process of financial education and informing about responsible lending, while the developing consumer's abilities to use in practice that information.

b) Introduction of compulsory lessons in financial education into the school curriculum instead of optional lessons available now with the aim of increasing the level of consumer education starting from the young. Another question is the qualification of the teacher. In our opinion it should be a specialist in the field of economics, while the ability to explain quite difficult topics into the understandable mode for each age.

c) Including into market research questionnaires topics about financial education and responsible lending of the respondents in order to establish the level of knowledge an existing gap in this field.

6. Conclusion

➤ According to the actual regulation of consuming lending, creditors are not directly responsible for consumers' decisions, considering that debtors possess all information about credit products and other relevant data.

➤ If the responsible lending principles will be approved and come into force, the creditors will have to take a much more active role when considering the customer's ability to repay a loan and this is one of significant change in approach to the regulation of consumer lending. It has the potential to significantly change the processes and compliance obligations of creditors in the consumer's lending. This will result in a decreasing of credit risk and thus of the share of non-performing loans.

➤ National Bank of Moldova should elaborate and approve regulations on responsible lending field, should define over-indebtedness for their authority, the methodology how to avoid over-indebtedness situations and solutions to apply in case of debtor's entrance into over-indebtedness. Also the National Bank should take reasonable steps to require and monitor compliance with the regulatory acts in

the field of responsible lending and should establish or support the establishment of independent debt counselling centres which also mediate on behalf of consumers.

➤ All categories of licensed lending institutions in the Republic of Moldova should develop and implement the policies, procedures and provide trainings for their employees that are necessary to ensure compliance with the principles of responsible lending.

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THE NECESSITY OF IMPLEMENTING THE INNOVATIVE SERVICE “INSTANT PAYMENTS” INTO ROMANIAN BANKING SYSTEM

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Abstract: *The sustainable development of new technologies having considerate advantages, such as fast, simple and movable communication and socialization, puts an increasing amount of pressure on the banking system to adapt to its customers’ needs, but also to respond to the competition created by non-financial payments or loans providers. By introducing instant payments, we will be to perform and benefit from RON transfer operations in a matter of seconds, simply by using the personal bank account. These instant payments will certainly improve the e-commerce and will help companies or institutions simplifying their operations and moving towards digital means. This result was already proved by countries such as Denmark and United Kingdom, which are already using this type of payments.*

Keywords: *Instant payments, competitiveness, electronic commerce, european standards.*

JEL Classification: *E52, E58.*

1. Introduction

The very long period of time to make payments or banking transfers has led to the development of some modern technologies which are faster, simpler and more responsive to clients’ needs, but also respond to the competition created by non-banking financial service providers.

Thus, one may spot a European or international trend, namely retail payments being processed in real time, 7 days a week, 24 hours a day, 365 days a year (7/24/365). For payments made in Europe in European currency (euro), SEPA (Single Euro Payments Ace) allows payments being made without any cash to any person in Europe, by credit transfer, direct debiting or debit card, at an identical rate as in transferee’s own country. Instant payments in Europe will be based on SEPA, meaning a harmonized instant payment method in the entire Europe.

In Romania, TRANSFOND already started the ‘Instant Payments’ project which will be finalized in 2018, so that the banking community can benefit from a payment system in real time.

2. The Role of ‘Instant Payment’ Service

At present time, an interbank payment requires some time in order for the respective sum to reach its consignee. Furthermore, if a payment is made during the weekends, the sum will only reach its consignee on Monday. With the help of instant payments, credit transfer payments will be successfully made in a matter of seconds, at any time, by using the personal bank account, either to a bank, or other similar service providers.

Instant payments will also improve the e-commerce, will support companies in simplifying their payment process and move to digital ways of payment. In many situations, these payments will also be an excellent alternative for cash payments. Statistics from countries which already introduced instant payments, such as Denmark or United Kingdom, prove that the use of instant payments is spreading rapidly.

On European level, the European Central Bank (ECB) owns a very important role as respects to instant payments because it is responsible with the security and efficiency of

non-cash payments in euro. As European institution, ECB attempts to make sure that there are no obstacles or extra costs for payments in euro anywhere in Europe.

To promote payment innovations, ECB collaborates with the national banking systems from EU Member States to settle on common standards and eliminate any border obstacles. Therefore, ECB chairs The Council as far as that goes to low-value euro payments. The Council is a group which reunites payment users or service providers and instant payments are one of the group's targets. This Council will work for the European instant payments system and will supervise and support the development and implementation of this system.

In Romania, the main role belongs to TRANSFOND, an institution founded in 2000 by all banks from Romania together with Romania's National Bank, as part of the adherence process to the European Union, with its main purpose of improving the payment infrastructure in Romania. TRANSFOND is the technical operator of the Electronic Interbank Payment System, the elements of this system representing the central part of interbank payments in Romania. In addition, it must be mentioned that these systems only process payments made by payment order, direct debit, checks, bills or promissory notes, cards being excluded. TRANSFOND also solely manages SENT (Automatic Compensation Institution) which process low-value interbank payments (up to 50.000 RONs/payment). Additionally, TRANSFOND operates ReGIS, a system designed for high-value or urgent payments (over 50.000 RONs), ReGIS finding itself under the administration of Romania's National Bank.

Since its foundation, TRANSFOND has constantly fought for the maintenance of the highest standards of interbank payments and adapting these payments to European or international standards. In order to offer performing services, TRANSFOND initiated the 'Instant Payments' project, which operates in Romania since 2018, thus contributing to the enrichment of fast and secure payment services. This service is innovative and available 7/24/365. This system represents an important piece of the infrastructure which will form the base for future development of alternative-channels payments and will provide a serious reason for maintaining a high competition between the banking system and unconventional payments providers, which are often poorly supervised.

3. The Importance of Implementing the New Service

In the past few years, in Romania, interbank electronic payments have registered a continuous growth, to the detriment of cash payments. However, if we take into consideration the number of inhabitants, there is still a significant gap between the number electronic payments and the market's potential. According to the latest statistics of ECB, in Romania, the average of electronic transactions (with promissory notes and direct debit) per inhabitant is 10 times smaller than the EU Member States' average (11 transactions as opposed to 105 in EU) and almost 5 times smaller than the average of EU Member States from Eastern or Central Europe (approximately 60 transactions per inhabitant).

At this moment, in the European Union, the process of instant payments is considered to become the new standard of processing low-value payments (also known as 'retail payments'), some compensation institutions within the EU already implementing this type of payments in real time (payments from natural persons, micro-enterprises, SMEs or large corporations). At the same time, other compensation institutions say that this initiative will represent a priority for their immediate development.

Table no. 1. Number of low-value payment transactions in Romania

Type of transaction	2013	2014	2015	2016	2017 (9 months)
	SENT	SENT	SENT	SENT	SENT
Credit Transfer RON	56.797.596	63.600.716	71.955.112	77.791.585	63.628.387
Direct Debit	315.783	331.475	349.018	232.248	156.054
Checks	1.460.719	1.312.530	1.212.818	1.085.630	709.133
Bills	1.124	859	693	439	187
Promissory Notes	3.434.810	3.290.203	3.190.891	2.988.092	2.031.550
Total	62.010.032	68.551.678	76.708.532	82.097.994	66.525.311

Source: Transfond, 2018. *Rapoarte anuale*. [online] Available at: <<https://www.transfond.ro/comunicare/rapoarte>> [Accessed 12 March 2018].

Table no. 2. Total Value of low-value payments in Romania (mil. RON)

Type of transaction	2013	2014	2015	2016	2017 (9 months)
	SENT	SENT	SENT	SENT	SENT
Credit Transfer RON	205.776,73	223.487,61	249.603,10	268.019,91	213.549,00
Direct Debit	2.289,05	2.684,51	3.079,35	3.297,09	3.359,32
Checks	17.809,16	16.214,31	14.831,39	13.135,38	9.103,24
Bills	11,80	9,55	5,95	1,12	0,4995
Promissory Notes	36.839,68	35.932,10	37.362,78	33.450,15	23.714,36
Total	262.726,43	278.523,87	304.882,57	317.903,64	249.776,42

Source: Transfond, 2018. *Rapoarte anuale*. [online] Available at: <<https://www.transfond.ro/comunicare/rapoarte>> [Accessed 12 March 2018].

According to previously presented data, one may draw the conclusion that TRANSFOND's processed operations through SENT have positively evolved. Thus, the general growth within SENT – the RON component, of the total operations grew with 11.92% and their value with 14.71% in 2015 as opposed to 2014 and with 7% and 4.27% in 2016 as opposed to 2015, respectively, can be explained by an economical improvement and by the entry into force of some regulations with regard to cash payments. The payment orders that were processed through SENT – the EURO component, registered significant growths: total number of operations grew with 66.39% and their value with 94.45% in 2015, as opposed to the previous year and a growth of over 330%, and 500% in 2016 as opposed to 2015, respectively.

Table no. 3. Total Number of Transactions in EURO Through SENT

Type of transaction	2013	2014	2015	2016	2017 (9 months)
	SENT	SENT	SENT	SENT	SENT
EURO Credit Transfer	353	15.895	26.446	116.048	379.270

Source: Transfond, 2018. *Rapoarte anuale*. [online] Available at: <<https://www.transfond.ro/comunicare/rapoarte>> [Accessed 12 March 2018].

Table no. 4. Total Value of EURO Transactions Through SENT

Type of transaction	2013	2014	2015	2016	2017 (9 months)
	SENT	SENT	SENT	SENT	SENT
EURO Credit Transfer	731.079,08	44.509.381,42	86.547.087,18	531.435.568,11	1.816.601.127,76

Source: Transfond, 2018. *Rapoarte anuale*. [online] Available at: <<https://www.transfond.ro/comunicare/rapoarte>> [Accessed 12 March 2018].

The positive growth of the total number of electronic transactions and their value in different periods fits in the general trend of growth and overlaps the dynamic of the economic growth. On the other hand, the numbers show an increasing embrace of electronic transactions by economic operators (companies or consumers).

TRANSFOND's strategy for development considers the replacement of SEPA payment orders with instant payment orders. This objective is set on the European general trend which can also be spotted from the analysis that Vocalink from UK released to the press. Based on official information (ECB, national banks or the European private sector of economy) one may conclude that instant payments will overrule EURO retail payments, estimations reaching between 19 and 44 billion transactions in 2027, within the European Union.

4. Conclusion

For TRANSFOND, as well as for other banks in Romania, moving to instant payments means an increase for the service's availability, a higher performance level, faster settlements and money circulation, as well as an increase of payments by decreasing the number of cash payments or card payments. The reasoning is that the system will offer its customers a significant advantage: the initiation and execution of real-time payments. Moreover, this will also represent the response of the banking system to the competition created by non-banking financial service providers, which will be more and more active on the retail market, with instant payments included in their services.

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THE PHENOMENON OF TAX EVASION AND THE NEED TO COMBAT TAX EVASION

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***Abstract:** Lately, there has been talk of tax pressure on taxpayers. Changes in the field of taxation at national level can have a negative effect on the business environment. In these circumstances, the process of tax evasion is more and more current, which has led us to carry out the present research. The main objective of the scientific research is to define this phenomenon, to present the causes and forms of tax evasion, as well as to identify the ways of preventing and combating it, aiming finally to draw some conclusions regarding the effects of the evasion phenomenon at the national level. The methodology used to accomplish the article is the theoretical research of the relevant legislation and of the speciality papers, based on the empirical research of the information presented by the National Agency for Fiscal Administration performance reports.*

***Keywords:** taxes, tax evasion, taxpayers, tax reports.*

***JEL Classification:** H26.*

1. Introduction

At the international level, in the context of the globalization of the economy, one can observe the existence of the competitiveness between the economic agents operating on the same market; is a battle for supremacy, for customers and sales, for profit.

Obtaining additional advantages over competition is sometimes determined by the use of legalized or even legacy methods. And, sometimes, these methods inevitably lead to what we call tax evasion or avoidance of the payment of contributions to the state budget.

Tax evasion is a complex economic and social phenomenon, a "scourge" that attacks all the world's economies, for which this field has been and still is the subject of many scientific research. The main purpose of knowing the mechanisms of tax fraud is to prevent and combat it, and the eradication of evasion is a dream that is more and more difficult to fulfill.

2. The concept of tax evasion

Tax evasion is the avoidance of taxing a smaller or larger part of the taxable material (Văcărel et al., 2004, p.431), being at the same time a way for taxpayers to meet tax constraints when they exceed certain limits considered acceptable for their economic activity.

A taxpayer is any natural or legal person or any entity without legal personality who owes taxes, duties, contributions and other amounts to the consolidated general state budget. (Law No. 241/2005 on the prevention and combating of tax evasion, updated and republished, article 2, point b.)

The tax evasion phenomenon is encountered both nationally and globally; being a practice that has seen an upward trend in recent decades, which is also recognized by public finance authorities. In the context of the amplification of the evasion phenomenon, the practice of economic agents who manage to remove from the tax law some of the income obtained was the object of the concerns of many scientists over time.

Definitions given to the concept of tax evasion are abundant in the specialty literature. We will continue to present two of these, the most complex ones, which, in our opinion, best capture the essence of the concept of tax evasion.

The first definition belongs to Professor Oreste Atanasiu, who defines tax evasion as "the total of licit and illicit procedures by means of which the interested persons evade, in whole or in part, their wealth, the obligations established by the fiscal laws" (Anastasiu quoted by Bistriceanu and Badea, 2010, p. 292).

Law no. 87/1994 on the fight against tax evasion (abrogated and replaced in 2005 by Law 241) defines the evasion phenomenon as "the stealing by all means, in whole or in part, from the payment of taxes, duties and other amounts owed to the state budget, local budgets, state social insurance budget and special extrabudgetary funds, by Romanian and foreign natural and legal persons, having the status of taxpayers".

Tax evasion therefore consists in avoiding in part or in whole, by using different ways, the payment of tax liabilities owed by a natural or legal person. Also, tax evasion can be seen as taxpayer's response to fiscal pressure from the state.

Fiscal pressure is the percentage of revenue to which taxpayers are forced to give up in favor of the state. This percentage takes the form of direct and indirect taxes, taxes and contributions due to the state budget and / or local budgets.

Tax pressure can be calculated at both national and individual levels. The last one is calculated as the ratio between the taxes and duties payable by each taxpayer and his tax base, resulting in the following formula:

$$Pfi = \frac{IT \times 100}{Bi}$$

where: Pfi = individual tax pressure

IT = taxes and duties owed

Bi = tax base

The level of taxation has direct consequences on the activity of taxpayers, so if the fiscal pressure is high, there is a negative influence: the taxpayer is discouraged from working, saving and investing; the temptation to reduce the taxable base and the attempt to avoid payment of taxes and duties, the idea of tax evasion appears.

Given that most of the country's revenue is represented by tax revenue, overwhelming fiscal legislation should be avoided because the result obtained will be the opposite of the desired effect, namely the fall in budget revenue. Thus, a "fertile ground" is formed for the emergence of the so dangerous and damaging phenomenon of a nation's economic and financial environment.

3. The causes of tax evasion

Tax evasion is a phenomenon that negatively affects the economy of any democratic state and, in order to prevent and combat it, it is necessary to know the causes that determine it. The causes of tax evasion occurring and amplifying are numerous, may be general or specific to a particular economic period, may be of an economic, social, moral or political nature.

Fiscal pressure plays a decisive role in the occurrence of tax evasion: when the tax burden is hard on taxpayers, they tend to shrink their taxable assets and avoid paying taxes that they consider too high and overwhelming .

Fiscal pressure arises in the context in which tax legislation does not reflect the country's economic reality: under conditions of economic growth, the level of taxation may have a slightly upward trend, with the taxpayer more easily tolerable a higher tax burden.

An incomplete tax system with ambiguities and contradictions can influence the behavior of individuals and legal entities in the sense that there is a general psychological

inclination of taxpayers that derives from the fact that man is, by his nature, preoccupied with putting his individual interests above his or her own, than the general interest of society.

An interpretative tax legislation offers a chance for a tax evader to carry out various operations that lead to tax evasion and tax avoidance. At the same time, the frequent amendments of the tax legislation, combined with the voluminous and difficult to understand tax laws, but also the legislative loopholes that create confusion regarding the way of calculating and paying the duties, taxes and social contributions owed by companies to the state budget or the social security budget, favors tax evasion behavior.

Tax evasion is the logical result of defects and inappropriateness of imperfect fiscal legislation, of defective methods of enforcement, as well as the failure of the legislator, whose excessive taxation is as guilty as those who practice tax evasion (Bistriceanu and Badea, 2010, p.292).

Another reason for the rise and increase of tax evasion is the lack of adequate and well-organized financial control, carried out by qualified, well trained and incorruptible staff. The intransigent and consistent financial control, resulting in severe civil and criminal sanctions, can be a way of preventing and combating tax evasion.

The above causes give rise to different interpretations of the tax law, leading to wrong calculations and fictitious tax statements. Whether it is ignorance, whether it is bad intention, taxpayers who turn to tax avoidance mechanisms jeopardize the optimal functioning of the democratic state.

4. Forms of tax evasion

Financial theorists and practitioners confirm that some individuals and legal entities are proposing and sometimes manage to escape from paying taxes and duties owed to the state budget.

In practice, there are multiple ways of avoiding payment of the amounts owed to the state; these means being grouped into two broad categories: tax evasion and tax repercussions.

The financial doctrine defines the repercussions of taxes as the transfer of the tax burden from the taxable person to the person who is to bear and actually pay the tax. Normally, the person paying the tax is the one who owes it (direct incidence), exceptions occur when the tax payer recovers him from the people he interacts with in the economic activity (indirect incidence).

The obvious difference between tax repercussions and tax evasion is that in the first case, taxpayers try to pass on their tax burden to each other, but on the scene of tax evasion the actors are others: on the one hand taxpayers and on the other hand the state.

In the specialty literature, tax evasion takes many forms, its classification being made according to different criteria.

Depending on the criterion of compliance or non-compliance with tax legislation in force, tax evasion may be:

- a) tax avoidance (legal tax evasion, tolerated)
- b) tax evasion (tax fraud)

Legal tax evasion is a practice by which a natural or legal person escapes from the payment of taxes, taxes and contributions by taking advantage of the gaps in the legislation. In our opinion, the term of legal tax evasion is a contradiction of terms, so we will replace this phrase with the tolerated tax evasion. Why tolerated? Because state authorities know about it and allow it, but at the same time fight against it by modifying and improving financial and accounting legislation by creating a fair, coherent, complete, and fair fiscal system for all taxpayers.

In the case of entities, tolerated tax evasion is achieved by using creative accounting. Creative accounting is the result of accounting "spinning", indicating information practices and communication techniques, often at the limit of law and lawlessness, where accounting information is somewhat obscured, beautified and adjusted by professionals (accountants, financial auditors, tax consultants etc.) so as to better meet the interests of their users.

The tax evasion (tax fraud) consists of knowingly hiding the taxable object, underestimating the amount of taxable material, or using other means of avoiding taxes and duties (Bistriceanu and Badea, 2010, p.295).

The amplification of the tax evasion phenomenon revealed a variety of procedures used by taxpayers to evade the tax payable, thus, following the study of the fraud mechanisms used, the following forms of tax evasion were identified: accounting tax evasion, traditional tax evasion, legal tax evasion (by law) and tax evasion by evaluation.

Another classification (Florescu et al., 2005, p.129) of tax fraud implies its division into three main categories:

- the conduct of clandestine, undeclared activities at the tax authorities for taxation both by natural persons and by legal entities;
- not registering and declaring in full the revenues realized by the taxpayer, in order to reduce the taxable amount;
- oversize the production costs or the expenses generated by the activity, in order to reduce the taxable income.

Emil Dinga, in the paper "*Studii de economie. Contribuții de analiză logică, epistemologică și metodologică*", has analyzed the link between accounting and tax evasion and concluded that the tax evasion accounting mechanism will seek to reduce the tax base to which tax rules apply (gross final result). Therefore, it has been found that the tax base can be reduced in two ways:

- either by reducing taxable income - tax evasion by contraction;
- either by increasing deductible expenses - tax evasion by expansion.

The two modes are used in practice, either simultaneously or separately. They are most often encountered simultaneously in complex accounting engineers designed to best hide the wrongdoing in order to avoid paying taxes and duties.

In the financial doctrine there are different opinions regarding the notions of tax evasion, namely tax fraud: some authors consider that the two concepts are similar, others make a clear distinction between them.

To emphasize the difference between the two notions, tax avoidance is used in the Anglo-Saxon states to identify tax evasion, which is legal and involves the reduction of tax liabilities following the study and application of the possibilities offered by the legislation in force and the term "tax evasion" to define tax fraud, this being an offense, a circumspect circumvention of tax regulations. Analyzing the two concepts, it is noted that the main difference between them is a legality: avoidance is tolerated and fraud is sanctioned. However, the boundaries are not always accurate and there is a gray area called "avoision" (avoidance + evasion) (Lewis, 1982 - quoted by Munteanu et al., 2012, p.216).

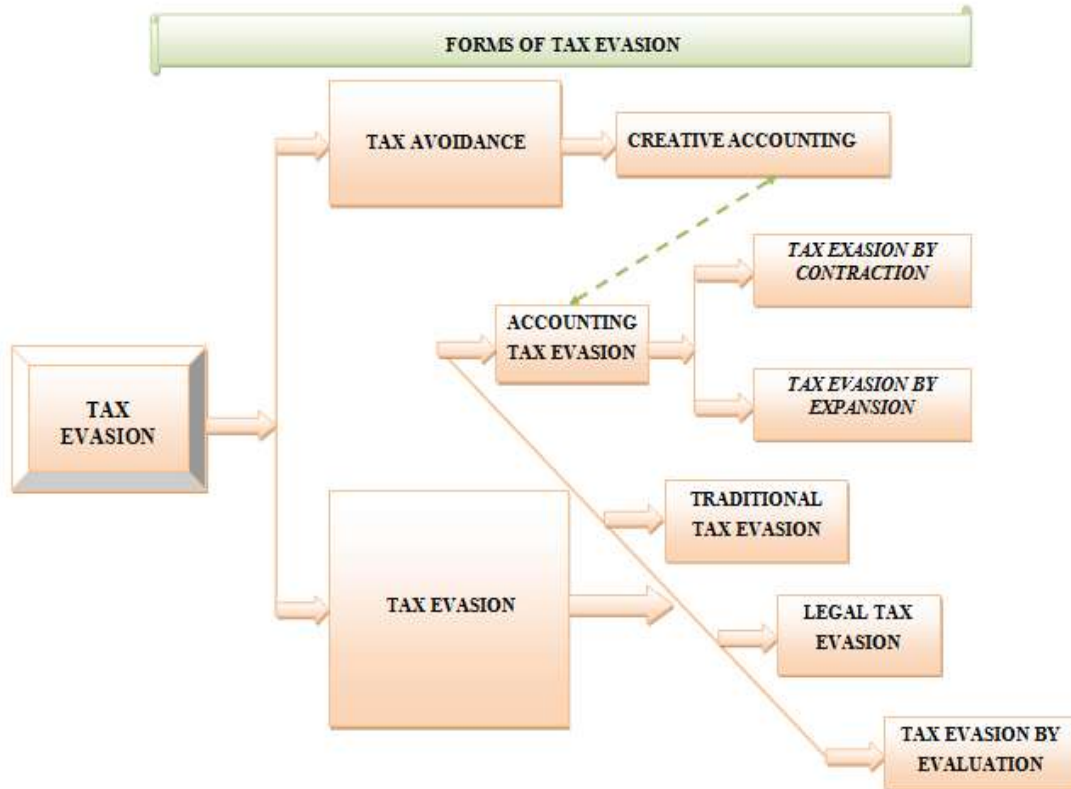


Figure no.1. Forms of tax evasion - own projection

Source: own processing.

The forms of tax evasion vary from country to country, depending on the particularities of each country's tax system. Regardless of the way in which the tax evasion is classified, the economic reality demonstrates that the scope of tax evasion is constantly expanding, and therefore the efforts of the authorities to step up and combat this damaging mechanism affecting the international economic environment should be stepped up.

5. The effects of tax evasion phenomenon and the need to prevent and combat tax evasion

In the market economy, economic and financial crime has comprised all sectors of activity, and tax fraud is one of the most important forms of business crime. The number of evasion has reached alarming levels, and the effects of circumventing the tax law are increasingly difficult to avoid. There is no doubt that the evasion phenomenon brings significant damage to the state budget.

The effects of tax evasion are always negative and are directly and immediately felt in budgetary revenues and, indeed, indirectly and gradually on the economic, social and political side (Bîrle, 2009).

The evasion of tax liabilities entails the reduction of the budgetary revenues, which leads to the impossibility of fulfilling the functions of the state; social goals and government programs can no longer be achieved, social inequity deepens and people lose confidence in the country's institutions.

To overcome the effects of tax evasion, a continuous struggle is needed, focusing on removing the causes that favor the emergence of the evasion phenomenon. It is a struggle to prevent and combat the negative implications of tax fraud on the economic and social environment.

Tax authorities have the task of ensuring the proper functioning of the tax system and of avoiding evasion of the obligations owed by taxpayers. For this, it is necessary to apply a set of legislative, administrative, economic and social measures.

Preventing and combating tax evasion implies the existence of a tax apparatus with well-trained employees who know all the fraud-proofing mechanisms and demonstrate irreproachable and incorruptible behavior. Under these circumstances, it is necessary for all governments of the world to invest significant resources for the salaries of the staff with fiscal control duties and for the material endowment of the control bodies. Also, there is a need for cooperation between the tax specialists and those in related fields: lawyers, computer scientists, engineers, prosecutors, secret service employees.

Fighting and preventing tax evasion requires the development of legislation that is permanently adapted to existing realities with sanctions, which firstly allows the recovery of state budget receivables, the drastic sanctioning of the guilty ones, and the withdrawal of some rights to carry out commercial activities on the territory of the country. (Bistriceanu and Badea, 2010, p. 301).

The specialized literature identifies the means of preventing and combating tax evasion and draws attention to the need for research carried out at the level of financial practice, researched in published papers to facilitate the homogeneous interpretation of the legislative framework.

The following measures can be used to prevent and combat tax evasion:

- ✓ creating a stable fiscal framework, correlated with the realities of the economy;
- ✓ the existence of administrative, civil and criminal sanctions provided for by the tax law in order to discourage tax evasion;
- ✓ implementation of financial controls by sampling at the expense of permanent and excessive control;
- ✓ reduce fiscal pressure and create a fair tax system for all taxpayers;
- ✓ informing the taxpayers about amendments to the normative acts in order to facilitate the unitary interpretation of the law;
- ✓ creating a powerful fiscal control, stimulated to fight tax evasion;
- ✓ raising awareness of taxpayers by popularizing the negative effects of tax evasion and deterring them from abandoning the immoral behavior that causes them to escape from paying taxes.

6. Tax evasion in Romania

The tax evasion phenomenon also meets in our country at a fairly high level. All forms of tax evasion affect different categories of taxpayers, reduce state revenues, affect government programs, create inequalities among the members of society, and sometimes social tensions occur.

Degrading the business environment followed by diminishing the attractiveness of the Romanian economy for foreign investments are consequences of tax evasion; is a problem that has been facing for many years in Romania and which, unfortunately, our country has not found a solution to it.

In the fight against tax evasion, the Romanian authorities have adopted measures aimed at reducing the scale of the phenomenon, creating a legal framework in the fiscal field being the first step.

In 1994, the law 87 on combating tax evasion, which was repealed and replaced by Law 241/2005, was approved. By adopting Law 241/2005 on the prevention and combating of tax evasion, with the subsequent amendments, the Romanian state decided to exclusively regulate the criminal offenses of evasion tax and other offenses related to it.

Unfortunately, Law 241/2005 does not fully cover the diversity of tax evasion, but sanctions for tax evasion are also provided by the Accounting Law no. 82/1991, the Fiscal Procedure Code or the Customs Code.

Further legislation is needed to combat tax evasion as the state must have a punitive response to the violation of tax rules, depending on the seriousness of the offense committed. The contravention and criminal sanctioning of tax evasion is more appropriate to their recovery. Also, the recovery of the damage to the state budget is necessary in the context of reducing the negative effects of the evasion phenomenon on the economic and social environment in Romania.

A further measure for combating and preventing tax evasion is the establishment of new structures to fight against economic crime: the National Anticorruption Directorate and the General Anti-Fraud Directorate.

The General Anti-Fraud Directorate was established within the National Agency for Fiscal Administration, based on GEO no. 74 / 26.06.2013 and GD no. 520 / 24.07.2013 with the attributions of preventing, discovering and combating the acts and the facts of tax evasion and tax and customs fraud (Performance Report, National Agency for Fiscal Administration, 2013, p.14).

Another tool used in preventing and combating tax evasion is the fiscal record, a means of recording and monitoring compliance with fiscal, accounting and financial discipline by taxpayers, which records the natural, legal and non-legal entities that have committed acts punishable by fiscal, accounting, customs, and financial discipline.

The tax record is used to prevent and combat tax evasion, as well as to streamline tax administration, taxes, contributions, and other revenue of the consolidated general government tax payable by taxpayers by providing tax authorities with access to information that reveals the way of tax compliance, accounting, customs and financial discipline by taxpayers (Government Ordinance No. 39/2015 on the tax record, art.1-2).

In order to see if the measures taken by our country so far have been effective in preventing, detecting and combating tax evasion, we continue to analyze the figures published by the National Agency for Fiscal Administration (ANAF) in the years 2014, 2015 and 2016.

In the National Agency for Fiscal Administration (ANAF) performance reports, in the chapter "Fighting tax evasion" it is noticed that the fight against the phenomenon of evasion takes place on three levels:

- ✓ *tax anti-fraud activity;*
- ✓ *tax inspection activity;*
- ✓ *customs activity.*

Particular attention is also paid to the work of large taxpayers.

The data published by the main anti-tax evasion agency in the performance reports of 2014, 2015 and 2016 do not reflect the sustained struggle that the Romanian authorities report to fraudsters. Although a new anti-fraud strategy was set up at the end of 2013, and with it, an ample process of reorganization of the National Agency for Fiscal Administration, the expected results (reduction of tax evasion) have not yet been reached.

Table no. 1. Tax evasion in Romania - promising figures for the period 2014-2016

<i>Tax anti-fraud activity</i>	2014	2015	2016
Total attracted amounts (respectively the amount of contravention fines, the estimated value of confiscations and the value of damages related to criminal offenses)	3,84 bln lei	5,09 bln lei	3,5 bln lei
Discovering and fighting tax evasion	2014	2015	2016
Acts of initiation of criminal prosecution bodies	714	810	705
Total damage related to criminal offense referrals	3,47 bln lei	4,70 bln lei	3,30 bln lei
Precautionary measures (total value)	2,48 bln lei	2,59 bln lei	2 bln lei
Number of precautionary measures	1302	1666	1366
Prevention of tax evasion	2014	2015	2016
Total sanctions for minor offenses	373,1 mln lei	389,6 mln lei	221,5 mln lei
Contravention fines in total value	93,3 mil lei	145,7 mil lei	141,8 mln lei
Confiscation of cash, income from illicit activities and goods	279,8 mln lei	243,9 mln lei	79,7 mln lei
Number of contravention fines applied	19429	30835	22463
Number of taxpayers checked	24160	-	-
Economic operators suspended	1628	849	498
Economic operators proposed to declare tax inactivity	592	-	359

Source: own projection based on data from the NAFA performance reports

The years 2014 and 2015 were a tour of force for the Romanian tax authorities, with all the anti-tax evasion indicators rising. Unfortunately, everything that was achieved in the first two years of reorganization of the fight against evasion was lost a year later when there was a decrease in the total sums attracted to the state budget as a result of the anti-fraud activity.

The fiscal relaxation proposed by the Romanian authorities by reducing VAT on food from 24% to 9% from 2015 did not have the expected effect, first of all the VAT receipts continued to increase, reaching 8 billion euros in 2017 - the largest difference between the VAT due and VAT collected at the European Union level. Secondly, the premise behind the adoption of this measure - the reduction in VAT evasion due to the reduction of fiscal pressure - was not supported by other measures to prevent and combat the tax evasion, such as: intensifying fiscal controls, economic agents and the determination of their moral behavior.

The fact that 2016 was a step back by the Romanian tax authorities in the fight against this scourge that attacks the national economy is still reflected in the increase of tax evasion reflecting the state's incapacity to collect the taxes and duties owed by taxpayers. The consequences are obviously negative, and the economic growth of our country is shadowed by the failure of the fiscal system to meet the challenges it faces.

In the period 2017-2020, the National Agency for Fiscal Administration proposed a strategy based on clearly defined objectives such as: increasing the rate of revenue collection, improving the relations with the taxpayers, their determination to comply with the fiscal obligations - declaration and payment - on a voluntary basis, the restructuring of the institution in order to increase the quality of the provided services, increase the activity of guiding and preventing the illegalities in the field of taxation, etc.

For the time being, these targets are far from being achieved, with figures for 2017 highlighting the authorities' inability to tax "engineering" thought by taxpayers eager to avoid paying taxes and, why not, overcome the system.

7. Conclusions

Organize an effective control system, based on coherent legislation, with clear provisions on sanctions for taxpayers who resort to evasion of taxes and duties; the avoidance of frequent changes in tax legislation, the increase of the personal conscience of those who choose the illegal and immoral behavior of circumventing the tax regulations in force are some of the measures that Romania must adopt in order to continue the fight against the evasion phenomenon.

Based on the scientific research, we defined the evasion phenomenon, presented the causes and forms of tax evasion, we focused on identifying the ways of preventing and combating it, and highlighted the negative effects this phenomenon has on the economic and social environment of Romania.

As a final conclusion, we can say that there is still a need for a profound analysis of the tax evasion mechanisms, an analysis that needs to be done both at national and international level to identify the necessary measures to prevent, detect and combat tax fraud.

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THE "TECHNO-STRESS" PHENOMENON - MEASURES TO PREVENT IT IN MODERN ORGANISATION

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Abstract: *The use of new information and communication technologies (NICT) as a working tool has a particular impact on modern organizations. Although technology itself is "neutral", it can also generate negative consequences for NICT users who may suffer the so-called "techno-stress." The concept and hence the extent of this phenomenon have varied over time. In this sense, the objective of this study is twofold. First of all, we propose to analyze the phenomenon of "techno-stress" (or the psychosocial stress associated with the use of new technologies), which are the main changes in the workforce associated with the use of new technologies that affect the psychosocial health of employees which organizational and individual factors modulate these relationships. Secondly, we intend to explore the main strategies for preventing and minimizing techno-stress in order to ensure professional performance.*

Key words: *NICT, techno-stress, techno-anxiety, techno-fatigue, techno-addiction, technophobia.*

JEL Classification: *M15, O15.*

1. The influence of NICT in modern organizations

The development of new information and communication technologies (NICT) generates a scenario characterized by integrating computer systems and communications networks with the formation of a global system that communicates computers and other peripherals through communications networks. This new technology enables the range of services, techniques, applications or services to be diversified.

At work, the use of technology applications and services becomes important to support certain business activities. So, we are currently witnessing the implementation of new technologies in production, sales and marketing, research & development, management, etc.). NICT applications are found in two areas within modern organizations, namely: production and office activities. The production activity (computer-assisted manufacturing) focuses on technologies such as numerical control systems, robots, command and inventory management, assisted control storage and production systems, assisted control measures, automated vehicle guides, programmable pallets, assisted production and assisted design. As far as office activities are concerned, NICT is found in technological systems such as word processing, data, images and voice, document archiving and retrieval, e-mail, integrated database management, assisted decision support, local networks (intranets), international networks (internet) and electronic selling points.

However, technological change generates technical problems with consequences for both people involved and companies. This is why there is a demand for prevention and counseling to avoid the risks and negative effects of technological impacts on business efficiency.

Regarding the relationship between the introduction of NICT and the level of employee satisfaction at work, we can refer to the term "techno-stress", defined as the stress caused by the introduction of new technologies in the workplace. Thus, new technologies can become more stressful. In this context, the aim of this paper is to present

the phenomenon of techno-stress and the main strategies of prevention and intervention in this field.

2. The “techno-stress” phenomenon

Implementation of NICT is responsible for effects at both social, organizational and individual levels.

Regarding the possible changes caused by the introduction of new technologies, it should be noted that the industrial society has turned into a technological society, causing significant changes in the labor market. In this respect, it was hypothesized that the continuous and accelerated process of technology means the destruction of jobs, but also the development of new ones, the creation of a new type of work (remote work, characterized by flexibility). The use of new technologies has led to a reduction in working time at the place of work, offering the possibility of allocating the remaining time to formal education.

NICT can change certain aspects of the work environment, turning these aspects into potential stressors that affect the psychological health of user workers or, on the contrary, improve it. It will all depend on the design, implementation and management strategies of new technologies and the personal characteristics of potential users (Figure no. 1).

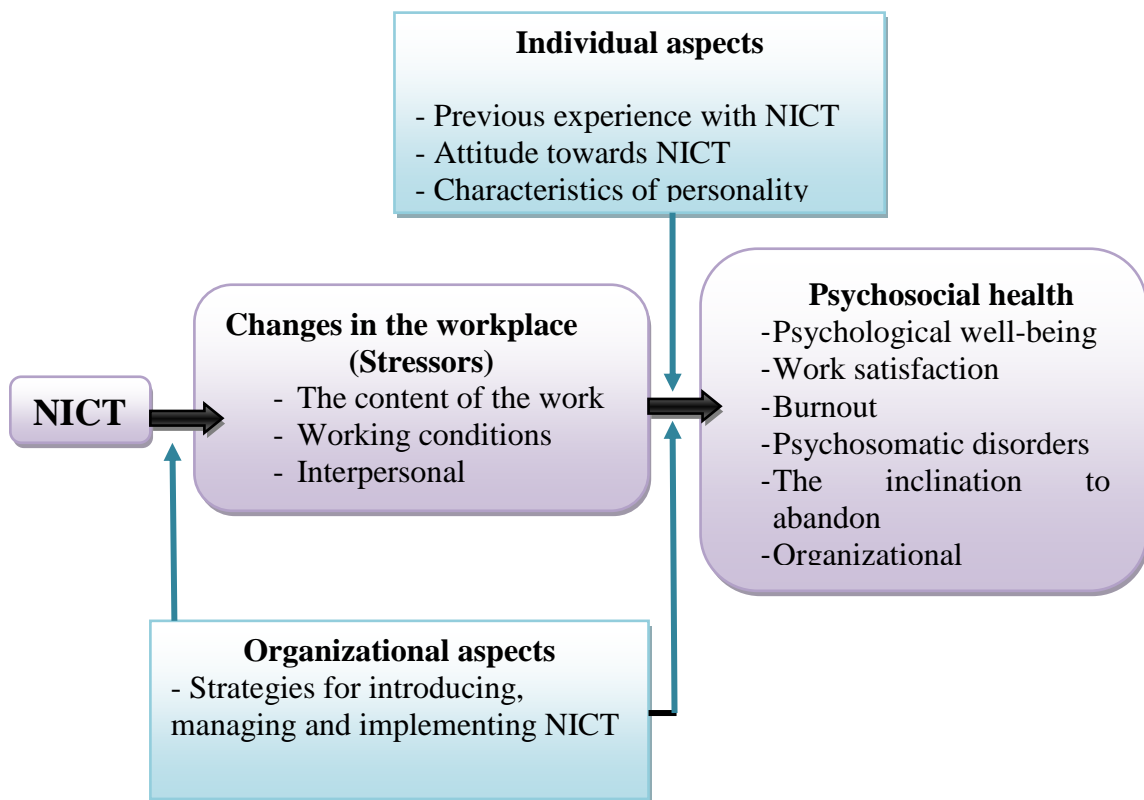


Figure no. 1. The “techno-stress” phenomenon

Source: INSHT, 1999. *El proceso de "Tecnoestrés" y estrategias para su prevención. (II)*. [pdf] Available at: <http://www.insht.es/InshtWeb/Contenidos/Documentacion/TextosOnline/Rev_INSHT/1999/2/seccionTecTextComp11.pdf> [Accessed 10 March 2018].

Thus, the impact of new technologies on psychological health is not direct, but depends on changes in the workplace, NTIT introduction strategies, and worker-worker characteristics.

3. Types of techno-stress

The techno-stress phenomenon is manifested in three forms, namely: techno-anxiety, techno-fatigue, techno-addiction (Figure no. 2).

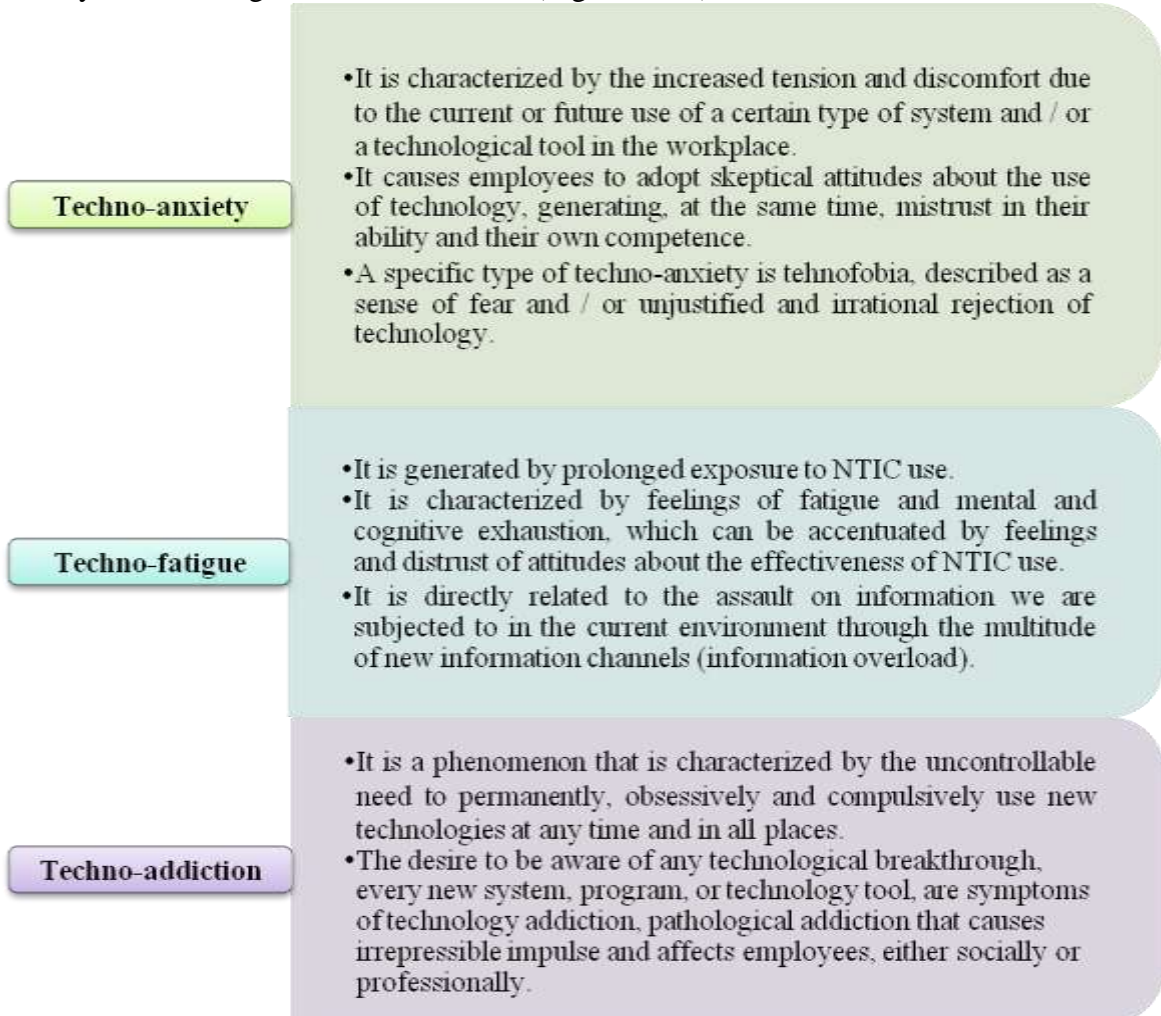


Figure no. 2. Forms of techno-stress

Source: Prevencio Laboral, 2018. *El tecnoestrés, Observatorio permanente de riesgos psicosociales Secretaría de Salud Laboral y Medio Ambiente UGT*. [pdf] Available at: <http://www.prevencionlaboral.org/pdf/riesgos%20psicosociales/Folleto_Tecnoestres.pdf> [Accessed 12 March 2018].

4. Measures to prevent the techno-stress phenomenon

The goal of NICT's stress prevention measures is to strike a balance between the requirements of implementing these new working methods and the ability of the employees to respond so that the level of techno stress is minimized, the emergence of risks in worker-technology interaction. These measures can affect three aspects: technical, organizational and individual.

From a technical point of view, these measures concern the design of the most appropriate technologies to facilitate workplace deployment in optimal conditions.

As a techno-stress prevention measure in the workplace, in *technical terms*, we propose that technology be designed with at least three basic aspects: tailor-made and adaptable design to personal characteristics, easy access and understanding of systems and tools (providing better interaction between worker and technology facilitates the use, exploitation, productivity improvement) and encouraging a "friendly" technology approach for "non-technical" workers. Technological changes that prove to be more inefficient, whether they are useless, are not accepted, are not "friendly" or are not ergonomically designed, should be replaced.

Regarding the *organizational aspect*, the measures concern the reduction and adaptation of labor demand (increasing mental effort, raising the level of attention, high work rate, difficulty of tasks, carrying out more tasks simultaneously, etc.) by implementing these new systems information and communication.

In this way, there is an improvement in the worker's resources (social support, teamwork, improving the working climate, greater autonomy and control, improving knowledge of the work done on the final result, facilitating equipment and systems to facilitate decision-making, and problem solving) to meet the job requirements.

As measures to prevent techno-stress in the workplace, from the organizational point of view, we propose:

- Adjusting the amount and complexity of work, the pace of work and the time required to achieve it, alternating tasks. These will reduce the mental effort with direct effect on the decrease in stress level.
- Process automation should be directed to greater autonomy of the worker, freeing him from performing routine auxiliary, monotonous tasks, thus enabling him to focus on more important tasks.
- Creating efficient communication systems, redesigning workstations, training.
- Employee participation in the choice of technological systems and their implementation. This improves the acceptance of new systems and tools and reinforces the psychological link of employees with technology, improving productivity.
- Planning specific, technology-oriented training courses is one of the most effective preventive strategies to cope with technological change.

At the *individual level*, acceptance of technology is based on the fact that its design gives employees a certain sense of control and autonomy over the task.

Preventive measures of an individual nature can have an impact on generating new skills and improving employee attitudes to technological change. A proposed measure at the individual level is to develop the skills and competencies needed to work with NTIC. It has to adapt to the training level of the employees and avoid losing the qualification after the implementation of the new technologies, promoting continuous and practical training through appropriate training programs.

5. Conclusions

The techno-stress phenomenon describes the negative psychological state of the use of new information and communication technologies or the threat of their subsequent use.

Thus, prolonged labor exposure to new technologies (such as the internet, mobile telephony, laptops, etc.) or the inability to effectively meet the requirements of their deployment can produce fatigue, stress and other disorders (anxiety, depression, difficulty in concentration etc.).

To avoid the risks associated with using NICT, a first step is to identify the risk factors associated with techno-stress, followed by assessing the risks that could not be avoided and determining as many precautions as possible to avoid or minimize techno

stress. However, it is pointless to set a number of preventive measures, no matter how appropriate they might be, if proper planning of their implementation is not achieved.

It is essential to establish, together with the preventive measures and deadlines for their implementation, the necessary human, material and financial resources.

In conclusion, the involvement of managers and employees in the prevention of the risks associated with the use of NICT is essential, allowing them better and faster assimilation on the one hand and, on the other hand, increasing the effectiveness of their implementation, ensuring safer and healthier working conditions for employees and greater productivity for the organization.

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ECONOMIC ACCEPTANCE OF WORK. GENESIS AND EVOLUTION

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Abstract: *The concept of work knows a lot of different approaches in literature starting from religious and mythological roots and up to a range of modern definitions presenting the concept throughout its components or areas of application. Nowadays, work is carried out in thousands of ways as part of more and more complex socio-economic structures. However the world of work and derived concepts is not fully delineated. The given article presents significant contributions to highlight interdisciplinary explanations of work, focusing on the economic dimension. A series of definitions of the labor market are synthesized, and the similarities and differences between them are analyzed. It is important to approach the labor market in the light of factors of influence on it, namely socio-economic and demographic factors. The conclusions drawn from performing complex analysis of the term "work" refers primarily to the time evolution of the term and the connotations it has. Moreover, the results of the study show, once again, that due to work, as a physical or intellectual effort of man, economic terms have also introduced other terms, such as the "labor market", "labor force" all together contributing to facilitating in-depth analysis and studying the details of the studied economic phenomena.*

Keywords: *work, labor cost, labor market, workforce, labor demand, labor supply.*

JEL Classification: *J01, J2, J3.*

1. Introduction

The work has a great importance for people. So, as Pope John Paul II wrote, "Labor exercens" - "work is not just a means to earn money, but also constitutes a fundamental dimension of a human being on the Earth" (Frunzaru, 2012, p.5).

Let's initiate an overview on the evolution of key terms by updating the generally accepted idea regarding the definition of work as a specifically human activity, binding of human existence and society, for general progress.

Etymologically, the term *work* stems from the Slavic word *muka*, which means *torment*. To denote hard or routine work done around the home, in Romanian it is used also the verb *to robote*, which has its origins from the Slavic word *robot*, meaning *work* (Dicționar Explicativ al Limbii Române, 2009, p.84).

On the other hand, Maurice Godelier (1980), doing an analyse of labor representations, has determined the etymology of the word *work* in French and Greek.

In French, *travailler* (to work) comes from the Latin word *tripaliare* (torture trident), *ovrer* comes from the Latin word *operarus* (Man of Sorrow), and *gagner* (to win) comes from the Frankish word *waidajan*, that means *to rob* or *to search for food*. In Greek, there is not only one word for work in general, but a number of private terms: *ponos* (painful activity), *ergon* (work in agriculture or war), *poein* (to do), *portein* (to do, to act) and *technai* (technique or activity that involves some secret processes). And also Hebrews, the word *work* has an etymological root that is associated with an unpleasant activity: *avodah* (labor) has the same root with *eved* (slave) (Frunzaru, 2012, p.12; Grint, 2005, p.14).

Returning to the different ways of defining *work*, it should not be missed one of the main linguistical sources - Explanatory Dictionary of the Romanian Language. According to it, the work is a "unfolding of a physical or intellectual activity directed towards a specific purpose; activity by means of which people modify and adapt things in order to satisfy their needs" (Brăilean, 2012, p.140).

Proverbs that theorize only in a few words what it the work can be found in all world languages (Duduleanu, 1972, p.44): Le travail est souvent le pere du plaisir ("Labor is often the father of pleasure"), Le travail c'est la liberte ("Work is liberty"), El trabajo es la

primera de las virtudes ("Work is the first of virtues"), Toil is the law of life and its best fruit ("Work is the law of life and its best fruit").

2. Philosophical-religious approach of the work

Although it would seem that everyone knows what does it mean *work*, everybody was involved from his childhood in domestic, intellectual activities or any other kind of, however, still we want a generally recognized definition of this human activity. In some cases *work* is a way to spend the most of the day and coincide with the individual's waking. In other cases, *work* is associated with the effort to achieve a certain status or to obtain economic reward.

This difficulty is caused by the specific approach of each research area. Clearly, an economist will focus on other aspects of the work than a lawyer or psychologist. For the economist, on the foreground lies the analysis of labor productivity and labor outcomes, because welfare of the organization will depend on, recording of the biggest financial results. In this context, the basic economic principle of "maximum result with minimum cost" is available.

In our view, development of a complete summary of theoretical approaches of work and work market in different areas is necessary due to the importance and timeliness of this concept on a global scale. Scientific researches on the topic are themselves in a complex interdependence, intersection and complete each other (Table no. 1).

Table no. 1. Interdisciplinary scientific approach of work

Domeniul disciplinar	The definition / interpretation of the work
Mythology	- The relationship between gods and people in the context of work - The perception of work as a ritual
Religion	- The perception of labor as payment in the account of original sin and the consequence of the paragon escape - Addressing labor as atonement and obedience to the will of God
Philosophy	- Work is a natural endeavor of man in his aspirations for happiness, or an obligation - Work must be consistent with moral aspects
Sociology	- The process of socio-professional integration of individuals on the labor market - The reciprocity ratio between work and living standards, the social evolution of individuals
Psychology	- The phenomena and psychic peculiarities involved in the work of man - The individual and group reasons that determine the performance of a job
Law	- Individual and collective legal relationships that arise between employers (employers) and employees working under their authority when they work
Economy	- All human resources that can and are involved in the production of goods and the provision of services
Demography	- Factors and effects of work on demographic indicators

Source: developed by author.

As you can seen on the table 1, it is difficult to exhaust the numerous meanings of the work. It can be a punishment for original sin, a way of expressing religious faith, a way to avoid temptation of the flesh, a path to happiness, social development, volitional act, etc.

The economic approach to research work as a concept and theory, allows to reflect the essence of this concept, to analyse forms that can take work from the antiquity until present, to develop regulatory measures and management of labor relations. In the classical economic theory, work is studied as one of the main human activities.

In Christianity, work was the God's command and also a fundamental law of human life, which arose at the same time with people's appearance: "And the Lord God took Adam and put him into the Garden of Eden to work and keep it" (Genesis II, 15-17). Even from here we can deduce that earth does not give its fruit only those who work. Only animals eat in raw form that what earth gives them. The individual endowed with intelligence and will have to pay tribute through labor for intelligence and will that he possesses, or rather to develop these abilities through work. Therefore the work defined itself as a methodical activity, so conscious and voluntary, by which the individual masters and transforms nature, produces material and spiritual goods to satisfy his needs and aspirations. So the work is primarily a feeding condition, condition of human existence.

God, sinning against Him. Through working an individual fulfills all the life duties, all purposes in the world. "Six days shall you labor and do all your things" (Exodus II, 9). Moreover, human labor is connected with God's creative activity. "That in six days God created the heavens and the earth" (Exodus VI, 11). God gives Himself as an example of work and rest. Work is dressed as a supreme honor, but it's one of the biggest debts.

The act of committing the original sin brought to people the curse to work laboriously to get food for subsistence. St. Paul believes that "who does not want to work, he should not eat" (III, 10).

Some ideas about the work we can find also in Monastic Rules of Saint Gret Vasile. He treats the concept from four points of view:

- a) work is divine command;
- b) work is a factor of education;
- c) work is a means of life maintenance;
- d) work is an activating factor to love the neighbor.

Meaningfully words belonging to Solomon said that "the most expensive treasure for people is working", sensing a great truth that work is the only one factor of goods creation, the only one factor that capitalizes any treasure.

3. The evolution of the work concept in Antiquity

But work isn't only the biblical context or the myths and legends of Antiquity; its scope is of wider coverage. Thus, it is a physical or intellectual activity directed towards a specific purpose: to produce basic needs, for profit, for pleasure or, conversely, is a forced activity, made when necessary.

Since in ancient Greece there were various "definitions", some metaphorical as those of Aesop ("Working is people's treasure") and Euripides ("Work is the father of glory and happiness").

In ancient Rome and ancient Greece, the main labor force was considered slaves. In Xenophon's economic treatise on land ownerships (380 BC;), it is said that the role of slaves was to "carry, maintain and keep master's properties" and and that oe to "plant, work the fields, sow and reap harvest". With other words, agricultural work was in slaves' burden.

In the 1st century a. HR., the roman Varro in his work about agriculture and growth of animals, has classified the equipment in a villa into three categories: dumb tools, semi-speakers (animals) and speakers (slaves). So the last ones were perceived as indispensable tools in agricultural work

Contempt of labor value was equating to the contempt towards workers. A real individual was considered only that one whose free time was remaining completely free.

According to Plato, a well-organized city would be where people would be fed from slaves' agricultural labor, leaving jobs for those from the lower strata. In Aristotle's conception, slaves, peasants and small traders can not live "happy"; only people who do not work, are, morally, according to human ideal (Felecan, 2004, p.69).

At the beginning of the 2nd century a. H., the Roman population was numbering about 60 millions; about three-quarters from those were working in agriculture. This fact is impossible to be believed as they were just 45mln of slaves, that every free individual had 3 slaves. Therefore, since that time, agricultural activities began to be executed also by free people, because the amount of goods produced by slaves was too small to meet the increasing requirements of the population.

4. Backgrounds of the economical research on labor

Outlining of principles to be formulated began only in the eighteenth century by Thomas Malthus in his "Essay":

- Population is limited in livelihood;
- Growth of population occurs in geometric progression, while enhancing livelihoods - in arithmetic progression.

Work organization during slave's time is similar to the work organization in present day. If there were many slaves, they were grouped into teams (sometimes called decuries), subordinated to foremen (monitores). Therefore, there is a so-called slavery team. The most defavorised were slaves from mines. Some slaves were doing seasonal work, as for example during harvests. In this case owners applied the wage system which could suit smallholders or farmers.

The English classical school, represented by Adam Smith și David Ricardo, brings the added value to economic theory, introducing the concepts such as work, value, money, distribution, absolute advantage, comparative advantage, etc.

Adam Smith's work published in 1776, "The Wealth of Nations" interpret in a new light the national wealth. Thus, all productive economic activities, including work, create national wealth. A great importance is given to the problem of work division, "annual labor of any nation is always a fund that supplies it with all necessary goods for living." At its turn, this fund depends on two factors: the work amount employed in production and labor productivity. An example in this situation serves primitive peoples who, although they were busy with different jobs, they were poor and lived very hardly. On the other hand, from Antiquity until the present, civilized peoples are much better and easier because their work is more productive, this fact is due to workers' knowledge and skills (Smith and Buttler-Bowdon, 2011, p.47).

The productive work, according to Smith, is fixed in material objects and creates profit. Therefore, the worker's labor in industry or agriculture is productive, while the work of those providing various services is unproductive simply because services disappear just than they are done. So work is useful, but it doesn't mean, it is also productive. The work, done by scientists and writers, lawyers and a priest being useful to society, however, is unproductive. Finally, Smith mentions, "an individual enriches himself using many workers and impoverishes using many servants" (Smith and Buttler-Bowdon, 2011, p.13).

This view can be analyzed in favor of an undertaking or state that is enriched at the expense of labor available but taking into account only those work resources that participate in the production process (agriculture and industry). For the eighteenth century, this reasoning was valid, but not for the current economy.

In Adam Smith's concept the work receives a connotation less positive, since it represents "a sacrifice that the individual do in his rest, from his freedom and happiness." It becomes obvious the human tendency to reduce the amount of time and effort to related work. This fact creates prerequisites for improvement machinery and division of labor.

Based on Adam Smith's the ideas, David Ricardo continues to deepen the theory of value based on work, raising new issues more and more complex. In his view, "the value differs essentially from wealth, because it does not depend on abundance, but the difficulty or easeness of production. A million people work in factories will always produce the same amount, but will not always produce the same wealth. The invention of machinery, through perfecting the skills, by a better work division or by finding new markets where exchanges can be made on favorable terms, a million people can produce double or triple than the amount of wealth ... and thus they will not add nothing in value, as the value increases or decreases in relation with the easiness or difficulty to produce it, or, in other words, according to the amount of work employed for its production" (Ricardo, 2001, p.112). Therefore, the value is regarded as a work product.

In Thomas Malthus opinion (1776-1834) the process of accumulation wealth requires many human efforts. And that's not all. Like his predecessors, he argued that wealth is created by productive labor. In this context, he comes with the explanation that "personal services are that kind of work or activity that, despite its great utility and its great importance, can not enter in estimation of national wealth" (Crețoiu, 2012, p.65).

Many mercantilists highlighted the importance of work in their performances. Thus, Antoine De Montchrestien wrote: "An individual is born to live in constant exercise and employment ... People's wellbeing lies mainly in wealth, and wealth in work" (De Montchrestien, 1889, p.21). The obligation to work of everybody is as rational as possible to avoid production losses and moral decay of humanity. In the conception of Karl Marx (1818-1883), work is a condition of human existence, a process of transformation nature products in work products. However, these actions are not only associated only with the human achievement, but also with alienation, because as a follow of the act of creation, work results are alienated by the individual who had produced them.

George Ritzer and Douglas J. Goodman state that, according to Marx' theory, there four forms of alienation:

1. The worker does not produce according to the ideas and interests; he did not do anything but to sell his work force to the capital holder in order to obtain means of survival for him and his family. Marx said that a spider or a bee build, but only a worker can imagine or build previously that what he wants to do according to his purposes. But by selling work force to the capital holder, the worker remains free only in his animal activities - for eating, drinking and procreating.

2. A second source of alienation is that the worker does not control the products of his labor. His work is materialized in products that are sold on the market according to the capitalist's will, the only one owner of the worker's objectivity. The true individual, "as a result of his own work" is alienated, because results of his work do not belong to him.

3. Workers must compete with each other to get a job. This fact, on the one hand, allows the capitalist to require more work for a lower price and, on the other hand, produces a worker's alienation towards other ones. Competition for getting a job necessary to survive lead to isolation and hostility among workers.

4. A more general form of alienation, which includes all others, is towards human potential. During the work (capitalism) we are ourselves no more, we are human beings no more, we are like machines whose function is to multiply the capital. Work is no more a form of free expression of "human essential forces", but a form of alienation towards the human potential.

Actually the phenomenon of human alienation is present and it is manifested through performing work against a ridiculous price. In addition, the individual today is like a zombie that do not even realize that he is double working for his needs.

4. Contemporary approaches of the concept of work

Essence and content of the concept *work* is a topic of discussion in the literature, because, according to Ignat I. and Pohoată I. "in all factors of production, the individual with his workforce occupies the most important place. He finds his mission and socially integrates himself only if he is busy, if he finds a job" (Ignat and Pohoată, 2002, p.356).

A modern definition of the work widely accepted by specialists from differen fields is as follows: "Work is a specific human activity manual and/or intellectual – throughout which people use their physical and/or intellectual property skills to produce goods required to satisfy their needs."

It is observed from the statement certain limits of the definition; therefore the explanation of the term is not sufficiently plausible. We can not agree with the claim that work is a specific human activity (or, animals haven't physical and/or intellectual abilities), it can be manual and/or intellectual, and has the aim to produce certain goods. It is believed that precisely in this place, it should be finished the sentence because as follows ("required to meet their needs") is not true in all cases. A physical and/or intellectual effort made by an individual is not always oriented towards satisfying own needs, as an example is slaves' work. Even today, to satisfy an employee's needs doesn't represent the final direct outcome of the work was done, but it takes extra effort of his part to get the good or service until required for the money you receive as salary (Figure no. 1).

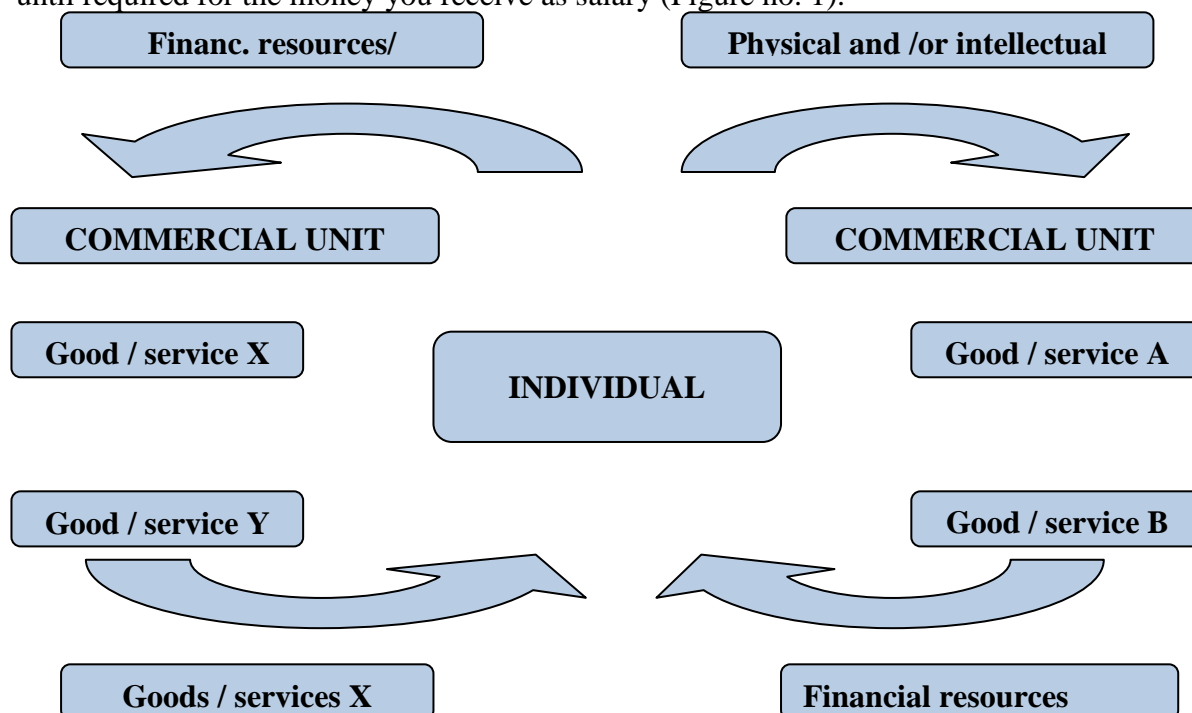


Figure no. 1. Process of work performance and satisfaction of human needs

Source: developed by author.

The payment received for work is considerably reduced taking into account that double physical effort and time resources are invested, needed to go to the business unit and acquire the desired property.

Therefore, to satisfy a need in terms of the effort is a process consisting of two consecutive steps:

- 1) Obtaining of wage from labor supply;
- 2) Obtaining good / service desired through the exchanging commodity -money.

Due to all these complex relations established between employer and employee, from one hand, and between goods and services and their monetary equivalent, from another one, it was necessary to create and strengthen the labor market with all its characteristic components: labor supply, labor demand, wages, etc.

Labor market is a system defined through economic relations regarding to employment and labor utilization and also ensuring social protection and assistance to holders of this special commodity (Niculescu, 1999, p.23). Also, the labor market could be defined as "meeting place structure of labor demand with labor supply, in space and time, on total and on structure" (Ignat and Pohoățã, 2002, p.255). In this context, Professor Crețoiu believes that labor supply and labor demand are not just inert economic categories, but they are all too mobile and active, and there are steady relationships created between them, either of confrontation and / or negotiation (Crețoiu, 1992, p.54).

In contemporary economic theory, the labor market is considered to be a central square, a main one, which in one way or another, permeates in the whole texture of socio-economic relations, the more so as it is, in terms of industrial relations a fragile market, a major conflictual and explosive potential (Didea, 2002, p.56).

The labor market is affected by various socio-economical, demographic and social factors, as it is showed on the Figure no. 2:

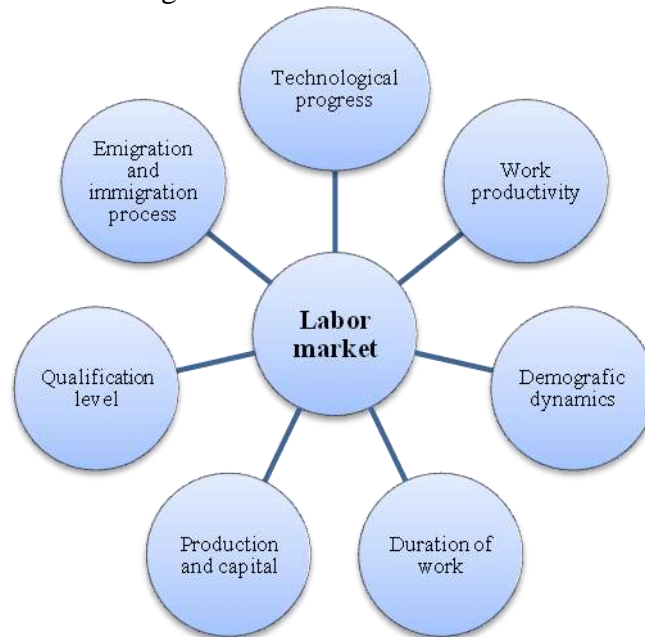


Figure no. 2. Factors, that influence the labor market

Source: developed by author

Some of these factors, for example, assimilation of technical progress, growth of labor productivity, increasing of labor skills, act directly on the labor demand, to increase or decrease it. Other factors such as increasing of available labor resources, migration growth, duration of compulsory education, working hours affect the size of labor supply.

Because of the systemic and complex labor market, Gheorghe Răboacă identified also reversed effects, positive and negative, with direct influence on other markets, able for generating distortions and imbalances in the investment, currency, budget deficit etc. These

effects are: behavior of workforce, the cost of wages, the degree of saving's investments (Răboacă, 2003, p.17).

Univ. prof., dr. Constanța Partenie constituted an array for feature transactions of labor market in comparison with other markets of factors (land, currency etc.) that is rendered in the following table:

Table no. 2. Peculiarities of work market transactions

On market land (natural resources), capital	On work market
1. Object of the transaction can be completely and irrevocably alienated against the owner.	1. Work can not be sold or purchased as labor hire of the owner.
2. The buyer has fully traded goods (being able to use or dispose them, sell).	<p>Sale and purchase of work is based on a contract of sale which is strictly determined by a number of legal regulations.</p> <ul style="list-style-type: none"> • Buyer does not have totally his merchandise; he can not use it except for performing activities specified in the contract and within the agreed working time. • Engage (hiring) of work force is done for an indefinite period, each of the two parties being able to terminate the contract at any time.
3. Although the range of alternative uses of land and capital is very opened operationally, however, holders of these inputs can not use the property, rather than through the market.	3. Holders of work force have fewer opportunities for alternative using of their property: recreation, work in their own household and can circumvent the market, with a great part of their work potential for certain periods of time.
4. Transactions with capital and natural resources (land) are carried concerning market laws, because there are common goods.	4. Work transactions are referred to a commodity belonging to the human being who has a native endowment, education, aspiring efforts, ideals, lifestyles, varied interests and, above all thinks and reasons and contemplates positive or negative.
5. Capital and land as a production factor, does not possess the capacity for self-organization.	5. Work force is the single production factor with organisation capacity.
	<p>6. Owners of labor force are constitute in unions, in order to balance the influence of labor market conditions of transactions on the work market.</p> <ul style="list-style-type: none"> * Unions negotiate normative content of labor market institutions: working conditions, wages, working time, promotion and participation criteria, etc. * Unions can use a strategy of monopoly, monopsony or oligopoly and may resort to tactics partners' intimidation * Unions can bring numerous deviations from market rules, that distort rational model of economic behavior in

	the labor market.
	Labor behavior is under the influence of inertia because: * qualification and specialization can not be changed suddenly * labor mobility (professional and territorial is dependent on numerous objective and subjective factors).

Source: Răboacă, 2003, pp.115-116.

Actually, the labor market is a market strongly unbalanced. It corresponds to the totality of job offers came from enterprises and to the totality of work requests came from the active population (Brăilean, 2012, p.113).

The ration between labor supply and demand could lead to three distinctive situations:

- 1) full employment and labor market equilibrium (3-4% unemployment);
- 2) unemployment or involuntary underemployment;
- 3) shortage of manpower.

Another important aspect that should not be overlooked in the analysis of labor market are empowered segments, but often overlapping of work: industrial labor - farm work, productive work - unproductive labor, physical labor - intellectual work, work producing material goods – work providing of services etc.

5. Conclusion

Work has undergone various scientific approaches from the genesis of philosophical and religious work to present. Some of them are summarized in this article.

The results of the study show, that due to work, as a physical or intellectual effort of man, economic terms have also introduced other terms, such as the "labor market", "labor force", all together contributing to facilitating in-depth analysis and studying the details of the economic phenomena.

We do not want to finish the task with a conclusion, as the labor market and thus work, as economic categories are too complex and difficult to define and especially to characterize fully.

In the contemporary world, the work is unfolded in thousands of ways in socio-economic structures increasingly complex. Therefore, theories regarding labor market remain a chapter permanently opened to new scientific contributions and however many interdisciplinary research would not do this, however there is enough place for additions.

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QUANTITATIVE MARKETING RESEARCH REGARDING THE PROMOTIONAL IMPACT ON THE BEHAVIOUR OF THE CONSUMERS OF TOURISTIC SERVICES IN THE COUNTY OF COVASNA

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Abstract: *The purpose of quantitative marketing research is to determine the attitudes and opinions of tourists who visit the Centre region regarding its touristic attractiveness and to identify the possibilities of attracting as many tourists as possible for a longer period of time. The touristic experience is the totality of the elements in which the tourist participated and came in contact with natural and anthropogenic resources, access, hospitality, technical and material basis, services.*

Keywords: *research, promotion, tourist, results.*

JEL Classification: *M31, M37, O30.*

1. Introduction. Methodological considerations regarding the quantitative marketing research

In evaluating the touristic attractiveness of a region, the following major components are taken into account (Câdea, Erdeli, Şimon, 2000): natural touristic resources, anthropogenic touristic resources, technical and material basis, services and hospitality. The quantitative research was realised on the basis of a random sample survey consisting of 30 questions. The structure of the questionnaire considered the principal and secondary objectives presented in Table no. 1.

The data collection took place between the 2nd of December, 2017 and 2nd of March, 2018. The questionnaires were applied by the receptionists of the tourist accommodation units.

Table no. 1. Principal and secondary objectives of the quantitative marketing research

Principal objectives	Secondary objectives
1. Determining the attitudes and opinions of tourists regarding the attractiveness of the Centre region	1.1. Determining the main reason for tourists visiting the Centre region
	1.2. Identifying attractions and forms of tourism that are considered the most representative for the Centre region by tourists
	1.3. Determining the attitudes of tourists regarding the local population, the staff working in tourism and the connection between quality - price.
	1.4. Determining the attitudes of tourists regarding the existing transport infrastructure and identifying proposals to improve it.
	1.5. Identifying tourists' opinions about the quality of different types of services in the Centre region.
	1.6. Determining the degree of satisfaction of tourists after the visiting the Centre region
2. Identifying tourists' expectations and preferences regarding the stay in the Centre region	2.1. Identifying the most popular accommodation units according to their degree of comfort.
	2.2. Determination of tourists' preferences regarding freedom of travel during a stay
	2.3. Identifying the reasons for dissatisfaction of tourists during the stay in the Centre region
	2.4. Identifying the average duration of the stay spent by foreign and Romanian tourists in the Centre region
3. Identifying the profile of the tourist who visits the Centre region	
4. Identifying the best ways to promote the Centre region	

Based on these objectives, the general and statistical assumptions were established. The general assumptions have the aim to establish some research directions. These hypotheses were formulated as follows:

- The majority of tourists consider the stay spent in the Centre region as a pleasant experience;
- The satisfaction of tourists is influenced by the quality of the services from which they have benefited;
- The main reason for dissatisfaction of the tourists who visit the Centre region is the transport infrastructure;
- The construction of the airport from Ghimbav as well as a motorway that links the Centre region to the main areas of the country are considered equally important for the tourist attractiveness of the region;
- Tinovul Mohoş and the spas are the most visited and representative attractions of the region;
- Most tourists are informed about their holiday destination on the Internet.

2. Choosing the method of sampling

In the first phase, the underlying variable of stratification was established which is the type of tourist accommodation unit. At the level of the Centre region, three main categories of tourist accommodation units were identified: hotels, pensions, villas and apartments. A second variable that was considered was the number of rooms in each type of tourist accommodation unit. Depending on the total number of rooms in each type of accommodation unit, the sample size was calculated.

Table no. 2. The structure of the sample of each accommodation unit

Tourist accommodation unit	Accommodation capacity in the county of Covasna (number of rooms)	Accommodation capacity in the county of Covasna (percentage)	Sub-sample size
Hotels	7874	49%	196
Pensions	6763	42%	102
Villas and apartments	1457	9%	86
Total	16094	100%	384

Source: Own data source taken from the National Institute of Statistics

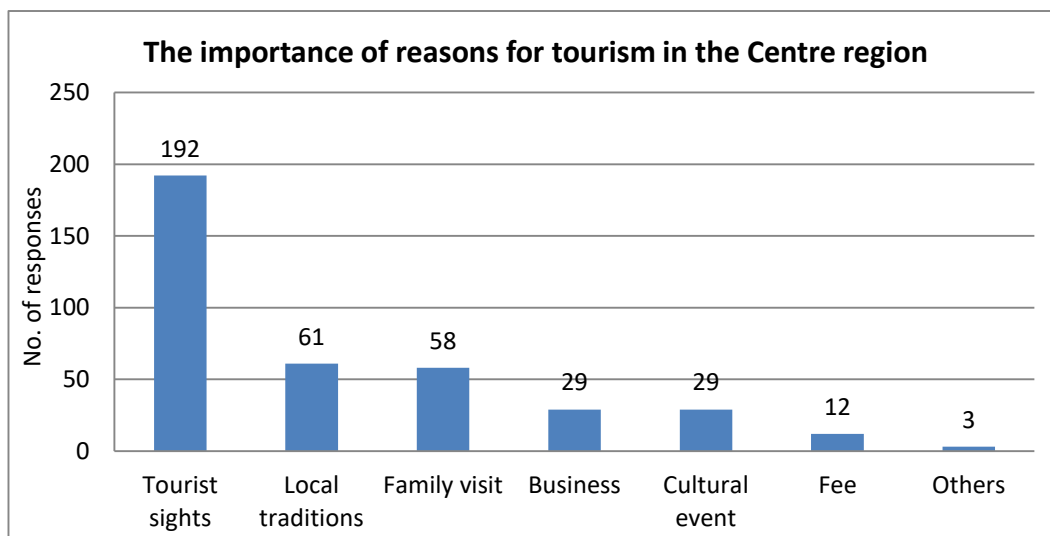
In the county of Covasna, there are accommodation units classified into different categories: from minimum comfort to superior comfort, namely accommodation units classified from 1 to 5 stars. Thus, two accommodation units in each category were randomly chosen.

3. Results of quantitative marketing research

Marketing research had the below results according to the objectives under consideration. Graphics and tables resulted from the analysis of the data obtained in the sample.

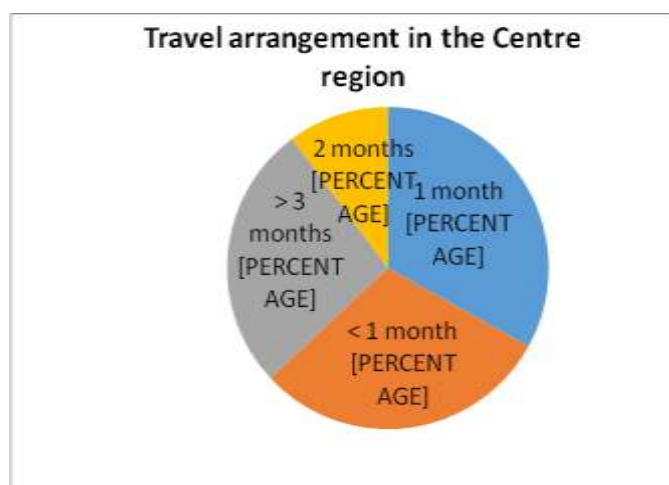
The first objective of the research is to determine the attitudes and opinions of the tourists regarding the attractiveness of the tourist destination, the Centre region.

Figure no. 1. The importance of reason for tourism in the Centre region



Visiting the tourist sights is the main reason for the tourist destinations in the Centre region. Figure no. 1 shows the reasons and expectations of tourists in descending order in the Centre region.

Figure no. 2. Travel arrangement in the Centre region



The planning of stay in the Centre region shows that 63% of the interviewed tourists plan their trip a month or less than a month before. The remaining 37% of respondents find it more important to plan the stay in the Centre region. It can be concluded that they reserve rooms for spa treatment in the Centre region, and a proportion of 27% more than three months before.

Table no. 3 The frequency of looking for information

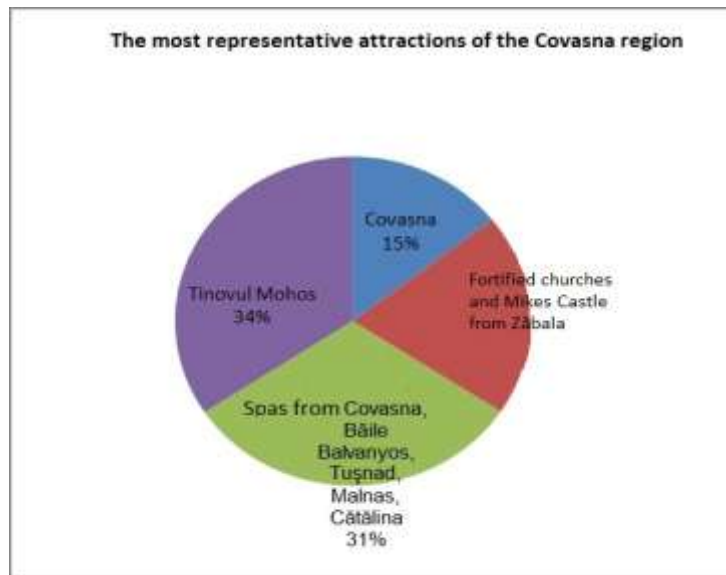
Modalities of information	Frequency					Total	Average
	Very rarely	Rarely	Nor rarely / nor often	Often	Very often		
	1	2	3	4	5		
Travel agencies	19.00%	16.00%	20.00%	26.00%	20.00%	100.00%	3.1
Internet	3.00%	5.00%	13.00%	27.00%	52.00%	100.00%	4.2
Family and friends	6.00%	11.00%	24.00%	36.00%	23.00%	100.00%	3.6
Total	9.00%	11.00%	19.00%	29.00%	32.00%	100.00%	3.6

Travel agencies are *often* (26%) and *very often* (20%) consulted, but the Internet is the most often used (52%). Family and friends are *often* consulted (36%). If the answers *often* and *very often* are considered, family and friends are consulted in a proportion of 59%, compared to 46% of the travel agencies at the same frequency. However, the Internet remains the solution which is used in a proportion of 79%, *often* and *very often*.

The averages obtained by evaluating the responses with scores from 1 to 5, given from *very rare* to *very often*, show that family and friends (average 3,6) have priority over agencies (3,1), but not over the Internet, the average of which is above 4, that is to say *often* and *very often*.

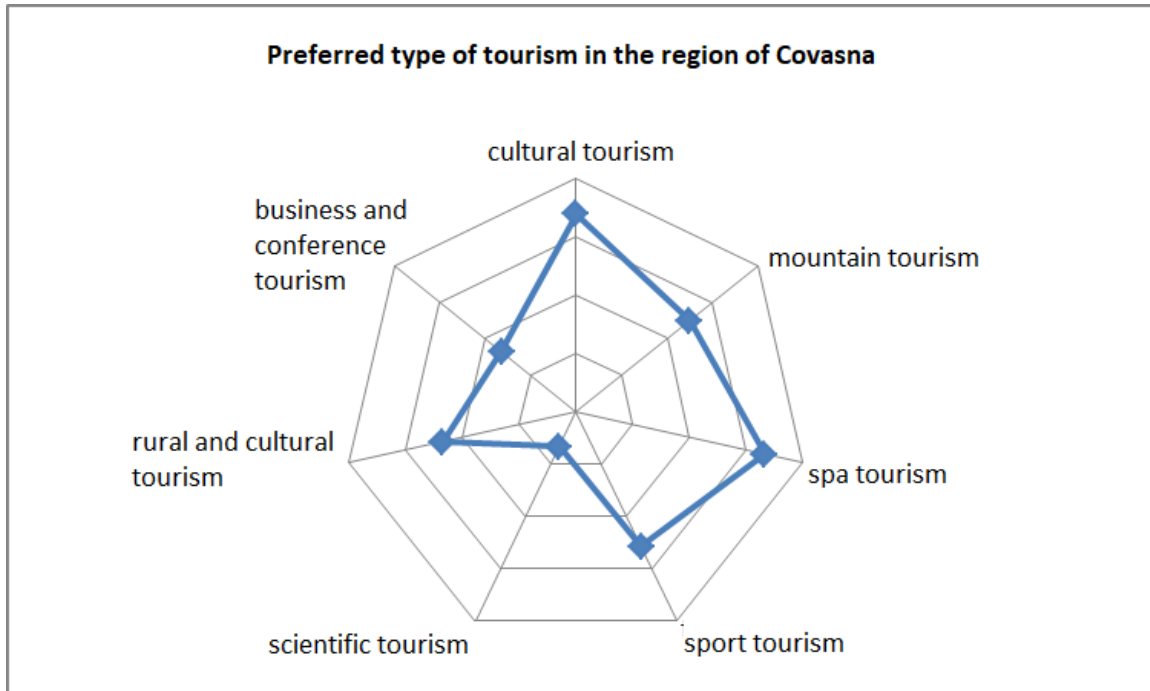
Generally, 61% of respondents are *often* and *very often* informed, regardless of the modalities of information, over the 20% who are *rarely* and *very rarely* informed, and 19% have an indifferent attitude. The average of 3.6 is placed over half the interval between *nor rarely / nor often* and *often*.

Figure no. 4. The most representative attractions for the region of Covasna



According to the analysis, the most representative tourist attraction is the *Tinovul Mohoş* with 34.33% of 100 scores, followed by *spas* with 31.42%, *fortified churches* 19.82% and *the town of Covasna* with 14.43%.

Figure no. 5. The preferred type of tourism in the region of Covasna



The most representative types of tourism in the Centre region are: cultural tourism, spa tourism, mountain tourism, sport tourism, rural and cultural tourism.

It can be noticed that the most respondents are satisfied with the quality of accommodation, mass, agreement and information in a proportion of 97%.

The average of 3.97 shows that the accommodation is ranked first, followed by mass of 3.95, information of 3.59 and agreement of 2.98.

According to the responses, the most common means of promotion was the *Internet* of 55%, followed by 17% of *media* and 9% of *promotional materials*.

The usefulness of *promotion on the Internet*, considering the responses *extremely useful* and *useful* - has the highest share of 72%, compared to only 7% of the respondents who consider that the promotion is *useless* and *completely useless*.

The averages obtained by evaluating the responses with scores from 1 to 5, granted from *extremely useful* to *completely useless*, show that promotion on the Internet (average 4,34) has priority over promotional materials (average 3,93) , organizing festivals (3,74), tourism fairs (3,78), advertising clips (3,53).

It can be noticed that the transport infrastructure is considered *nor high nor weak* by 36% of tourists and 31% consider it *high*, 18% consider that transport infrastructure is *poor* and 8% *very poor*. It can be noticed that the level of transport infrastructure is below the expectation of European standards, but there are opportunities for improvement.

In the survey, tourists were asked to categorize the issues related to improving the access to the region of Covasna by allocating 100 scores according to the importance. It was found that the importance of building an airport is in the first place, the construction of a motorway that links the region of Covasna to the main areas of the country is in the second place and the improvement of the rail infrastructure is in the third place.

It is noted that most tourists agree that the local population in the region of Covasna is hospitable with a *total agreement* of 33% and a *partial agreement* of 43%; together with the two types of agreement, 77% of the respondents agree that the area is hospitable, 75%

agree that the staff involved in tourism in the region of Covasna are well prepared and the tariffs of tourist services in the area reflect the quality in a proportion of 66%.

It can be noticed that respondents' complaints about the transport infrastructure are 50%, but most of them are satisfied with the quality of services and the staff.

The tourists expressed their opinion about the degree of their satisfaction - as a global indicator - after the stay in the region of Covasna. The -3 value represents a very high degree of dissatisfaction, and the value of 3 is a very high degree of satisfaction.

It is noted that most tourists have indicated positive values, which means that they had a pleasant tourist experience. 40% of the respondents chose value 2 as the indicator of global satisfaction after their visit to the Centre region. The maximum satisfaction level (3) was indicated by 39% of the respondents. Thus, about 80% of respondents said they were satisfied and very satisfied.

4. Conclusions – The profile of the tourist who visits the Centre region

The results of the analysis of the identification questions are as follows:

- The majority of respondents (80%) are Romanian and 20% are foreigners.
- In terms of gender, most of the respondents are women (57%) and 47% are men.
- Most of the respondents said that the monthly net income of their family is higher than 2,001 lei, 26% of respondents would range it between 1,001-2,000 lei and 10% of them range it between 1,001-1,500 lei.
- The largest percentage of 32% is represented by tourists aged 36-45. The second largest percentages are represented by the 26-36 years old (27%) and 46-55 years old (26%), and the proportion of 18-25 years old (9%) is the lowest, tourists aged over 56 (7%).
- Most majority of the respondents said that they graduated from university, and 24% of tourists said they graduated from high school.

Most respondents prefer to travel *with friends*, 42% of them, 30% prefer to travel *with family*, 18% want to be accompanied by *colleagues* and 10% travels *alone*.

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BUSINESS SUPPORT STRUCTURES AND REGIONAL DEVELOPMENT. CASE STUDY – BIHOR COUNTY

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Abstract: *In addition to our previous research regarding economic policies for regional growth and development suitable for Romania the actual research aims to investigate the business support structures as a viable instrument of regional development in Romania in the specific economic context of Bihor County. The present paper aims to investigate the situation of business support structures in the Bihor County (Romania) in the EU context, if the business support structures contribute to the local and regional development and what are the business support structures that can be developed by the Bihor County based on literature review and contextual analysis. The first part of the paper provides a literature analysis of the business support structures, agglomeration economies and regional development and provides an analytical framework of Bihor County's economic context. In the second part, the paper presents the business support structures from Bihor County followed by 4 case studies. The main conclusion of the paper is that, although there is an increased interest in the business support structures in Bihor county, the existing structures are insufficient and without a significant impact on local development, especially at the level of small towns and rural areas. The data used for contextual analysis are based on local and regional statistics, local and regional development strategies, public and internal data of public and private organizations regarding EU funded projects and business support structures.*

Keywords: *Business support structures, agglomeration economies, industrial clustering, regional development, Bihor County (Romania).*

JEL Classification: *M13, O1, M1.*

1. Introduction

The role of business support structures is considered essential as tools for interpretation and action for regional development. The analysis of the theoretical trajectories followed by theories and models of regional development highlights that the progress in this area consisted in focusing on economies of scale and economies of agglomeration, including territorial advantages that encourage innovation capacity of firms and regions. Identifying the role of space in the innovative process became a topic of the highest relevance. The dynamic agglomeration economies which encourage companies' and regions' capacity for innovation - are the subject of the latest debates on business support structures as instruments of regional development. In this context, the present paper analyses the business support structures situation at local level in Romania based on simple and dynamic agglomeration economies, and try to identify the main factors that explain their impact on regional development.

Our contextual analysis is derived from a larger study looking at economic policies for regional growth and development suitable for Romania in the context of the economic and financial crisis and integration into the European model (Dodescu, 2013). We concluded that encouraging SMEs and innovation are emerging challenges for the regional policy of Romania and a new style of regional governance for cooperation and relativity, orientation towards the SME sector, technological progress, innovative and learning processes to capitalize the endogenous regional potential - is a necessary change to mature Romania's regional growth and development policies in the context of European Union (EU) integration (Dodescu, 2011a; Dodescu, 2011b; Dodescu and Chirilă, 2012a; Dodescu and Chirilă, 2012b; Dodescu, 2013). Looking at existing business support structures in the North-West Region of Romania, we identified the predominance of industrial parks as

long-term functional structures (Dodescu and Chirilă, 2012c), high difficulties in ensuring sustainability of economic agglomerations based on dynamic agglomeration economies, especially, innovative clusters, despite regional clustering potential (Popescu, Dodescu and Filip, 2014). Also, we identified that EU structural funds, particularly European Regional Development Fund (ERDF) - supported actions, have been the most significant in the field of encouraging business support structures in Romania, the Romanian strengths in this field are definitively related only with industrial parks (Dodescu and Chirilă, 2014; Dodescu, Filip and Chirilă, 2016).

The actual research aims to investigate the business support structures as a viable instrument of regional development in Romania in the specific economic context of Bihor County. Accordingly, the main research questions addressed in this paper are: What is the situation of business support structures in the Bihor County (Romania) in the EU context? How did the business support structures contribute to the local and regional development? What are the business support structures that can be developed by the Bihor County based on literature review and contextual analysis?

The paper is structured as follows: Section 1 provides a literature analysis of the business support structures, agglomeration economies and regional development; Section 2 provides an analytical framework of Bihor County's economic context; Section 3 presents the business support structures from Bihor County followed by 4 case studies in Section 4, and Section 5 summarizes and concludes the paper.

2. Business Support Structures, Agglomeration Economies and Regional Development. Literature Review

The observation that economic activities are generally grouped into space has led to the identification of the so-called spatial or "*industrial clustering*" phenomenon (McCann, 2001, p.53). In an attempt to explain the industrial clustering phenomenon, the literature uses the notion of "*agglomeration economies*", defined as economies of scale with specific locations. The existence of agglomeration economies and the positive effects of the agglomeration of companies on regional development were theorized by neo-classical authors such as Weber, but Alfred Marshall was the first to provide a detailed description of the sources and effects of these economies. They were defined by Alfred Marshall (1920) as external economies that are independent of the individual firm but which mark all firms located in the same area. In Marshall's approach, a good description of which is provided by McCann (2001), agglomeration economies are generally perceived as external economies that are independent of the individual firm but which mark all firms located in the same area.

For Marshall, the agglomeration effect is based on the following sources: a) Information spillovers, b) Local non-marketed inputs, c) Economies resulting from the local concentration of qualified work (Marshall, 1920, pp.319-326; McCann, 2001, pp.56-57). These three sources of agglomeration economies can allow firms in a local agglomeration to achieve economies of scale external to any firm but internal to the group. The key feature of each source of agglomeration economies is the reduction of transaction costs as a result of spatial clustering. Clustering increases the likelihood that specific information will be transmitted, that specialized services required will be offered, and that the suitably qualified workforce will be available in that location, as opposed to dispersed locations (McCann, 2001, p.57).

Consequently, agglomeration economies are territorial contexts characterized by the specialization of certain sectors, technologies or industrial fields that lead to economic agglomerations. Typically, economic or industrial agglomerations are associated with superior economic performance in a particular area, with the most well-known examples

being: Silicon Valley for the IT industry, Hollywood for the film industry, Wall Street-New York or London for financial services, Paris or Milan for the fashion industry, etc.

There are many types of economic agglomerations called broader *business support structures* – business centers, business incubators, industrial parks, industrial districts, technology parks, clusters, etc. The simplest forms of economic agglomeration are economic centers that do not involve specialization in a certain industrial branch and technological relationship, business incubators, industrial parks, cities, regions, etc. creating agglomeration economies can fall into this category (Dodescu, 2013, p.118). The most well-known forms of economic agglomerations, including specialization in a particular branch of industry and technological relationship, are the industrial districts defined by Alfred Marshall (1920) (*Marshallian industrial district*), redefined by Italian regionalists, especially Giacomo Becattini (2010) (*Italian districts or "new industrial districts"*) and industrial clusters, defined by Michael E. Porter (1998a) (*Porterian industrial cluster*). Even though some authors consider industrial districts a particular form of clusters (Porter and Ketels, 2009), in fact, the variety of definitions and approaches to the differences between the two concepts being surprisingly vast (Karlsson, 2008).

The dominant features of an industrial district are the high degree of vertical and horizontal specialization (component firms tend to be small and focus on a single function in the production chain) and a very high dependence on the market (Becattini, Bellandi and de Propis, 2009). There are a wide variety of examples: the glass industry district of Bavaria (Germany) or Bohemia (Czech Republic), the textile industry in Lower Austria (Austria), the technical district in Slovenia etc., the most known being the industrial districts of the fashion industry in the region of Emilia-Romagna (Italy) (Dodescu, 2013, p.118).

The fundamental difference between industrial districts and clusters is related to the relationship with the innovation process. Defined as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries and associated institutions (eg. universities, standardization agencies, professional associations) in a particular field that compete but also cooperate" (Porter, 1998a, p.197), the Porterian clusters are the best-known regional development strategy that enjoy the widest implementation in practice, the Silicon Valley IT cluster (USA), the electronics and biotechnology cluster of Cambridge (UK), Grenoble (France), Munich (Germany) or Pisa, Piacenza and North - East of Milan (Italy), being the most cited examples.

Porter's model (1998a, b) is based on the argument that agglomeration provides the individual firm with another way to organize its transactions in an environment of rapidly changing information and technology, proximity generating mutual visibility among competitors. In other words, companies can see the competitive progress of each, and this visibility is an incentive for companies to continue to improve their own competitiveness (McCann, 2001, p.62). The superior ability of clusters to produce territorial advantages that encourage firms and regions' capacity for innovation is related with so-called "*dynamic agglomeration economies*": spatial, geographical proximity between firms, facilitating the exchange of knowledge - the source of innovative activities concentration; relational proximity between firms, defined as the interaction and cooperation between local agents, which determines the processes of collective learning and socialization: the source of local innovative capacity; institutional proximity in the form of rules, codes and norms of behavior that facilitates cooperation between actors, socializing about knowledge and assisting economic actors (individuals, firms and local institutions) in the development of organizational forms: the source of interactive learning (Capello and Nijkamp, 2009, p.6).

At the confluence of the two categories - industrial districts and clusters, depending on the degree of specialization in a certain area, there are the *scientific and technological parks*, the most eloquent examples are: Montpellier, Sophia-Antipolis - France; Gnösjo district - Sweden; Baden-Württemberg - Germany; London - Bristol - United Kingdom etc.

Economic literature connects dynamic agglomeration economies not only with clusters, but also with innovative environments - "*innovative milieux*" (Camagni, 1991; Aydalot and Keeble, 1988) - where specialization in a particular branch of industry and technological relationship is the fundamental condition, respectively "*learning regions*" (Morgan, 1997), *creative regions, knowledge-based regions knowledge based regions* etc. (Armstrong and Taylor, 2000, pp.292-300), "Dommel Valley" at the Belgian-Dutch border formed by high-tech regional groupings of companies and specific knowledge-based organizations as the most cited example.

The impact of economic agglomerations on regional development is proportional to the presence of dynamic agglomeration economies, defined as territorial benefits that encourage firms and regions' innovation capacity. The typology of economic agglomerations according to the type of agglomeration economies (simple and dynamic) and the presence of specialization and technological relations is presented in Table no. 1, according to the typology described by Sölvell, Lindqvist and Ketels (2003).

Table no. 1 Forms of agglomeration economies

Forms of agglomeration economies	No specialization or technological networking	Specializing in a particular branch of industry and technological networking
Agglomeration economies Efficiency and flexibility	Economic centers Business incubators Industrial parks Urban agglomerations Regions	Marshallian industrial districts New industrial districts
Dynamic agglomeration economies Innovation and modernization	Creative regions Learning regions Knowledge-based regions	Clusters (Porterian industry cluster), Innovative environments (innovative milieux), Scientific research parks, Scientific parks, Scientific and technological parks, Bio-medical parks, Technopolis, etc.

Source: Dodescu, 2013, p. 121.

3. Bihor County's Economic Context

Bihor County has a varied economic structure, characterized by the shift from the preponderant development of strongly labour-intensive sectors to the development of the service sector. Out of the 17,891 active local units in Bihor county, one third (33.08%) are active in commerce, 12.80% in transport and warehousing, 11.47% in industry - predominantly in manufacturing (10.17% of the total), 8.99% in professional, scientific and technical activities, 8.95% in construction, 5.01% in hotels and restaurants and 4.06% in agriculture, forestry and fishing (BhCDS, 2017).

In the last five years, the highest turnover was recorded in "Wholesale and retail trade; repair of motor vehicles and motorcycles", followed by "Industry" (BhCDS, 2017). Companies in "Wholesale and retail trade; repair of motor vehicles and motorcycles" and "Industry", followed at quite some distance by those in the fields of "Transport and storage" and "Constructions", have the most important contributions to the total turnover

achieved in Bihor County, suggesting that the county economy relies heavily on these sectors.

Even though trade, transport and construction have a significant share in Bihor County's economy, the contribution to gross value added is lower compared to industry, and does not require qualified personnel or specific skills compared to industry, therefore strategic documents focus more on industry, especially manufacturing, while policies, programs and funding schemes encourage business start-ups in industry, especially in intensive technology.

Areas of activity in the manufacturing industry in which Bihor County is more developed relative to the national level based on the number of employees, which indicates the local specialization, are: computers, electronics and optics; textile and clothing industry; plastics and non-metallic products; furniture industry (BhCC, 2017, p.42).

At the level of the year 2011, Bihor County ranks 1st at the national level in the manufacture of computers and peripheral equipment by number of employees (2.084), but also as turnover (2.52 billion RON); 1st place in the manufacture of other electronic components as number of employees (841) and 2nd place as turnover (151 million RON); 3rd place as number of companies / employees and 4th place when considering turnover in the manufacture of electronic subassemblies (BhCC, 2017, p.42).

In 2015, in the top 3 of Bihor County's manufacturing industry, the following areas can be found: Manufacture of computers and electronic and optical products; Tanning and finishing of hides; manufacture of travel and haberdashery, harness and footwear, preparation and dyeing of fur; food industry (BhCDS, 2017).

The export analysis also reveals a certain degree of specialization of Bihor County towards certain industrial areas, noting that Bihor County is currently experiencing a trade deficit and a downward trend in exports in 2013-2015 following the trend of growth in 2010-2012.

The highest values of exports are recorded in the following groups of goods: "machinery and appliances, equipment" (42.4%), "footwear and similar goods" (17.7%), "various goods and products, including furniture" (9.2%), "textiles, knitwear, clothing" (6.1%), "optical and measuring instruments and machines, medical devices and musical instruments" (4.4%), "food, beverages and tobacco" (3%), "live animals and animal products" (2.9%), "common metals and articles thereof" (2.8%), "transport means and materials" (2.5%), "vegetable products" (2.5%), "plastics, rubber and products thereof" (2.2%), "wood products excluding furniture" (1.1%), "paper, cardboard and products thereof" (1.1%) (BhCDS, 2017).

In line with the Framework Document for Smart Specialization Strategy in North West Region, areas of smart specialization identified at the regional level are grouped on pillars, as follows: Pillar I - Health and well-being with smart specialization fields or priorities: agro-food, cosmetics and food supplements, health; Pillar II - New materials and products with the fields or priorities of smart specialization: furniture, paper / plastic / packaging, production technologies (machinery and equipment), metal processing technologies; Pillar III - Towards a Digital Transformation with smart specialization field or priority: Information and Communication Technology (NWRDA, 2017, p.87).

According to the Romanian Universe Platform, the radiography of companies in the above-mentioned intelligence domains (in decreasing order) in Bihor County in the year 2017 is as follows: out of a total of 7857 companies, 1150 are in the field of Informatics, Telecommunications, (317 companies), Software consulting, Web sites (315 companies), On-line services management (167 companies), Peripheral computers (113 companies), Internet, telephony and telecommunications (100 companies) etc.; 349 companies are in Metallurgy & Metalworking. 439 companies in the Machinery & Equipment

Manufacturing sector; 4.326 companies in the Construction & Building Materials field; 1,273 companies in the Health & Beauty field and 320 companies in the field of rubber, plastic, ceramics. (RoUP, 2017).

At the territorial level, the business environment in Bihor County is concentrated in the urban environment, especially in the Oradea Metropolitan Area. In addition, there is a very pronounced agglomeration effect of economic activity around 5 cities in Bihor County: Aleșd, Beiuș, Marghita, Salonta and Valea lui Mihai. A positive aspect is that such concentration areas are located in several localities in different areas of the county, providing important data on labor mobility in rural areas. (BhCC, 2017, p.34).

4. Business Support Structures in Bihor County

Business support structures in Bihor County have been developed especially in the Oradea Metropolitan Area; their development in the rural area will contribute in the future to the reduction of intra-county disparities regarding the development of the business environment.

Looking at existing business support structures in the Bihor County, we identified that, as well as in Romania and in the North-West region (Dodescu and Chirilă, 2014; Dodescu, Filip and Chirilă, 2016), EU structural funds, particularly European Regional Development Fund (ERDF) - supported actions, have been the most significant in the field of encouraging business support structures in Bihor County. The business support structures established with EU non-reimbursable financial aid until the present are shown below in Table no. 2.

Table no. 2 Business support structures established with EU non-reimbursable financial aid in Bihor, 2018

Type of Business support structure	Project title	Beneficiary/ Partners	Project value (Euro)	ERDF co-funding PHARE/ HU-RO CBC/ FP7 (Euro)
Regional Operational Programme (ROP) 2007-2013				
Priority Axis 4 - Supporting the development of the regional and local business environment				
Industrial Park	Creating a Business Infrastructure in Oradea City and Providing Public Utilities to the Eurobusiness Industrial Park Oradea	Oradea Municipality	17.165.334,49	6.677.048,00
Industrial Park	Creating a Business Infrastructure in Oradea City and Providing Public Utilities to the Eurobusiness Industrial Park Oradea – stage II	Oradea Municipality	4.289.228,91	169.891,25
PHARE CBC Romania–Hungary Programme 2004-2006				
Business Incubator	Euroregional Business Incubator Oradea	Bihor County Council	376,000.00	98,044.00
Business Center	Integrated Center for Business Development by Promoting Regional Tourism and Culture	Town Hall of Aleșd, Bihor County	335,650.00	300,058.75
HU-RO CBC Programme 2007-2013				
Business Center	Non-Profit Center for Business Support in Hajdú-Bihar and Bihor	Chamber of Commerce and	3.999.867,69 (of which for	3.261.760,74 (of which for

	Counties: Development of Operational and Cooperation Facilities (Business Center of Oradea Fortress)	Industry Hajdú-Bihar, Oradea Municipality	Romania: 912.327,43)	Romania: 775.478,32)
Business Incubator	Business incubator for Cross-border Tourism development	Town Hall of Vadu Crişului, Bihor County	552 633,86	466,766,86
Business Center	“Increasing the economic competitiveness in the rural areas of Hajdu Bihar - Bihor Euroregion - Business Incubators”, Cross-border Center for Business Encouragement and Development in Ţeţchea	Town Hall of Ţeţchea, Bihor County	1.115.305,00 (of which for Romania: 600.000,00)	948.009,25 (of which for Romania: 18.000,00)
FP7, Regions of Knowledge Programme (REGIONS-2007-2)				
Cluster	Creating a Central European Thermal Water Research Cluster	INNOVA Észak-alföld Ltd (HU) Romanian Partners: University of Oradea, NW RDA, Transjex Ltd.	223.014,00	199.986,00 (of which for Romania: 37.277,00)

Source: Made by author based on: OCH, 2018a; RIS3 NV, 2018; NWRDA, 2018; KEU, 2018; CORDIS, 2018.

In 2018, in Bihor County there were 3 *functional industrial parks* in Oradea, with a very high impact - Eurobusiness Industrial Park Oradea I, II, III, established as seen in Table no. 2 with EU non-reimbursable financial aid through Regional Operational Programme 2007-2013, to which it is added 2 *industrial parks in project*, in the rural area – Tileagd and Săcueni, only Tileagd has obtained the title of industrial park so far. Eurobusiness Industrial Park I is located in Oradea, about 4 km from the Borş customs border on Hungary, with a total area of 130 hectares, with a 99.22% occupancy rate (Adlo, 2018); Eurobusiness Industrial Park II, located in Oradea, near DN 79 Oradea-Deva and DN 76 Oradea-Arad, with a total area of 83 hectares, occupying 45.65% (Adlo, 2018); Eurobusiness Industrial Park III, situated on the Uzinelor Street, about 8 km from the Borş customs border on Hungary, with an area of 15 hectares, with a occupancy rate of 53.17% (Adlo, 2018). Tileagd Industrial Park is located 25 km from Oradea, it has an area of 9.3 hectares, it has 19 plots and Săcueni Industrial Park will be located 46 km from Oradea and 5 km from the Săcueni custom border on Hungary, it has an area of 5 hectares (BhCC, 2018).

In 2018, in Bihor County there were also established with EU non-reimbursable financial aid - 2 *business incubators*, but with a limited service offer and low impact - *Euroregional Business Incubator in Oradea* (presented below as study case, currently closed) and *Business incubator for cross-border tourism development in Vadu Crisului* (establishing for travel agencies for mutual promotion of tourist attractions from the Bihor-Hajdu-Bihar Euro-region, respectively Hungary spa tourism and Romania mountain tourism, currently inoperable), and 3 *business centers* - *Business Center of Oradea Fortress* (functional), *Integrated Center for Business Development by Promoting Regional Tourism and Culture in Aleşd* (create as a commercial spaces for SME’s which have

tourism activities, but currently inoperable) and *Cross-border Center for Business Encouragement and Development in Țețchea* (presented below as study case), all of them established, as seen in Table no. 2, with EU non-reimbursable financial aid through PHARE CBC Romania–Hungary Programme 2004-2006 and HU-RO CBC Programme 2007-2013.

Despite existing industrial agglomerations, industrial tradition and its high clustering potential in computers, electronics and optics; textile and clothing industry; plastics and non-metallic products; furniture industry, tourism and hospitality etc. none of these industries are covered with active clusters in the Bihor County. As seen in Table no. 2, there is a cluster established through FP7 Programme in Bihor in renewable energies and services in tourism, but unfunctional at date.

In recent years, the number of *new generation business support structures* (new generation business centers, co-working offices, business hubs, accelerators, maker spaces, etc.) has increased, indicating a growing interest from young people, especially in high-tech sectors, for example - *Trade Center Oradea, Coworking Oradea, Incubator107 Oradea, Oradea Tech Hub*, etc. Although these examples are listed in official documents (NWRDA, 2017, p.87), their impact at the local level is still low, except - *Trade Center Oradea* (functional), a business center with private financing developed on 5 floors, class A offices, conference rooms (800sqm) and exhibition spaces (2200sqm), underground and outdoor parking (1000s) (TCO, 2018). Regarding *Coworking Oradea*, below, we present the way of organizing the existing co-working offices in the Bihor County. Regarding *Incubator107 Oradea*, we did not find any publicly available data, the official website does not work, and the official social media website presents some events for promoting entrepreneurship with low or non-existent impact, the newest being more than one and a half years old.

5. Case Studies

Business Incubator: Euroregional Business Incubator Oradea

Description: Oradea Euroregional Business Incubator is a project initiated by the Bihor County Council, funded by the European Union from the Phare CBC 2004-2006 Fund. Project code: RO2004/016-940.01.01.08/Phare CBC 2004, Contractor: Ministry of Public Finances 376,000.00 EUR, Contractor: Bihor County Council 98,044.00 EUR; location: Armatei Romane Street, No.1; Location consisting of semi-basement, ground floor and two floors making up a total area of 828.33 sqm, project completed in 2006.

Context: The specific objective of the project is to promote and support economic cooperation between young entrepreneurs in the counties Bihor and Hajdu Bihar (Hungary). The overall objective of the project is to tighten contacts between communities and economic actors in Bihor County and their partners in Hajdu Bihar County, in order to create a solid basis for balanced economic and social development of the whole area, with benefits for both partners.

Approach: The business incubator has the role of providing specialized services to certain categories of entrepreneurs, acts as a complementary factor to the existing organizations supporting the development of private small and medium enterprises. The business incubator is based on a partnership between the local actors in the two counties - Bihor and Hajdu Bihar, involved both in the private sector of small and medium enterprises, but also in the public sector, namely the local public authorities, namely the Bihor County Council, as well as the Hajdu Bihar Self-Government. Results: Construction of the business incubator building in a built-up area of 828.33 sqm and the arrangement of 23 parking spaces.

Impact: incubating 14 companies within the incubator

Considerations regarding success: A finished and equipped building located in the central area of Oradea City; it could become a place for those who want to start a business and need the opportunity to rent affordable premises for starting a business. Currently, the incubator is closed, public information about this location is inexistent. Although it is a building managed by a public entity, we have not identified any information regarding activity reports, opening hours, rental rates, lists of companies hosted here etc. (BhCC, 2006; PA, 2018; CN, 2007).

Business Center: Cross-border Center for Business Encouragement and Development in Țețchea

Description: The Cross-Border Center for Business Encouragement and Development was developed within the frameworks of the project “Increasing the economic competitiveness in the rural areas of Hajdu Bihar - Bihor Euroregion - Business Incubators”, cod HURO/1101/011/2.1.1, financed under the Hungary-Romania Cross-border Co-operation Program 2007-2013, with a total value of approximately EUR 1.1 million. The manufacturing incubator in Țețchea has an area of approximately 1000 sqm. It includes production facilities and 7 office spaces. At the time of launch, May 2015, a factory in the textile industry was already operating in the incubator.

Context: Supporting productive and service-oriented SMEs capable of making effective use of existing resources. Pilot rural cross-border economic development project promoting the integration of services, manufacturing and agriculture activities, facilitates the achievement of a high degree of cooperation among entrepreneurs from different branches of the economy, which leads to the creation of new jobs.

Approach: The monthly tariffs required for the use of the premises of the business incubator cost 1.5 EUR/sqm for the productive space, and 3 EUR/sqm for the office space. Companies located here can work for a maximum of 3 years. Services offered, besides the renting of production/office spaces, include: access to utilities, secretarial services, personnel recruitment services, training courses, consultancy services, accounting services (outsourced services, offered on request).

Impact: At the local level, this incubator has a significant impact. At the time of launch, there were already 25 people working in the business incubator, and the forecasts involved the creation of 70-80 jobs, two thirds of which would be occupied by employees from the commune. Besides, the conditions that must be met by the companies incubated here are related to the creation of new jobs, namely: the establishment of at least 20 jobs in the first year and the maintenance of this number for the whole period of the contract in the case of the companies operating in the production hall, and having at least 2 employees in the case of the companies to be incubated in the office spaces.

Considerations regarding success: Located in the rural area – Țețchea commune, close to local producers, the size and facilities of the business incubator are significant strong points to make local manufacturers initiate and develop their traditional activities. Currently, the center is unfunctional, public information about center’s activity is inexistent (THTC, 2015; Bihor, 2015; E-Bh, 2015).

New Generation Businesses Support Structure: Coworker Oradea

Description: Coworker – is an on-line platform for identifying and registering workspaces in common for people who want to start a business in over 142 countries. Coworking Oradea spaces can be requested via an on-line message, through which the following services can be requested: a tour of the available spaces, or by purchasing a Free Day Pass through which the applicant can spend one day in the workspace and decide whether it is a right fit for him/her. If the entrepreneur wishes to work in the Coworking

premises, he/she is asked to complete a membership application form that sets details such as the start date, the requested duration etc.

Context: Business hubs, incubators and accelerators where entrepreneurs can grow their business idea and which offer a variety of services, from basic ones such as internet access, advice on accessing funding, to networking with potential business financiers, are a concrete way of promoting and supporting entrepreneurial initiatives. According to the Entrepreneur of the Year's Romanian Business Environment Barometer, there were a total of 22 hubs, incubators and business accelerators in Romania in 2015, 8 of which located in Bucharest (Impact Hub, TechHub, ConnectHub, Gemini Solutions Foundry, Innovation Labs, Synergy Hub, WeLoveDigitalASE Startup), 6 in Cluj Napoca (Cluj Hub, Cluj CoWork, STEP-Up, Simplon, Spherik Accelerator, Chaos Cowork Cluj), 2 in Constanța (City HubConstanța, Forte Life -Social Hub) and Brașov (Hub OneZero, Hub 1317), 1 in Oradea (Coworker), Iași (The Grape), 1 in Timișoara (The start-up Hub), and 1 in Sibiu (Central Hub), (EY, 2015).

Approach: Coworking identifies three essential aspects of work in common spaces: 1. Increasing labour productivity because being surrounded by creative, intelligent and motivated people working under the same roof is considered to have a positive influence in this direction. Also, the accessibility of the equipment (printers, copiers, WiFi, etc.) helps to increase the productivity of the start-up entrepreneurs. 2. Connections that are created can increase the number of customers, partners and even investors that help them grow their business to the next level. 3. Flexibility - the program is flexible in the set time range; even if the size of the team is not known in the future, Coworking spaces do not conclude fixed long-term contracts to limit the number of team members.

Impact: The impact is still low, but promising. There are only two Coworking spaces in Oradea, with a total number of 8 individual workspaces:

1. **Coworking Oradea**, located on Mihai Eminescu Street no. 25A, Coworking Oradea addresses entrepreneurs who want a place where they can focus, who like to interact with people who have similar interests or who want a flexible program. These spaces allow the separation of private life from work and provide a creative atmosphere. Facilities: WiFi, printer, copier, smart TV, X-box for those who want a few relaxing moments, a customer/meeting space, fully equipped kitchen, smoking area, internal courtyard for relaxation, bike rental. Advice on accessing funds, marketing, business plan, etc. is also provided. It does not offer any private office spaces. There are 6 spaces available at work stations (desks), the tariff is 40 lei per day or 400 lei per month.

2. **Oradea Tech Hub**, situated in Oradea Fortress, in a newly renovated area of the fortress dedicated to business support structures. Oradea Tech Hub is a non-profit organization set up by an enthusiastic IT group. In order to access and work in the Oradea Tech Hub spaces, the applicants must be accepted as members by the Board of Directors. The main objective is to support IT business start-ups, to create a learning space that supports and promotes entrepreneurship in this area, increasing the number of specialties in software and hardware. It is a hub that provides training and supports development and innovation and wants Oradea to become a highly qualified IT destination. Facilities: conference room (also suitable for presentations), coffee break space, copier, printer, scanner, two workstations at individual desks with the possibility of extension according to the number of accepted members. The prices for this location are not made public; they are communicated only to the accepted members.

Considerations regarding success: Availability of a space that encourages work and creativity, at affordable prices. Those who are at the start of a business can save time

and money by using a workspace with technical facilities and office equipment, creating ties and a friendly work environment, a flexible program that provides business start up advice (Coworker, 2018).

6. Conclusions

The analysis of business support structures in Bihor County shows, as well as in Romania and in the North-West region (Dodescu and Chirilă, 2012c; Dodescu and Chirilă, 2014; Dodescu, Filip and Chirilă, 2016), that EU structural funds, particularly European Regional Development Fund (ERDF) - supported actions, have been the most significant in the field of encouraging business support structures and the predominance of economic agglomerations based on simple agglomeration economies (industrial parks, business incubators, business centers); excepted industrial parks, most of them, especially those located in rural area, are unfunctional.

Business support structures in Bihor County have been successfully developed especially in the Oradea Metropolitan Area – 3 industrial parks, 2 business centers – one with EU financing and one with private financing, and few new generation business support structures. The most importantly, both in terms of size and impact at the local and regional level, are industrial parks achieved by Oradea City Hall, namely Eurobusiness Industrial Park Oradea I, II, III. However, at the level of other cities in Bihor County we have not identified any functional business support structure at present. At rural area, in Bihor County there are 2 industrial parks - Tileagd and Săcueni - in project, with great difficulties in financing and starting the specific activity; 2 business incubators and 2 business centers, all of them established with EU financing but all of them unfunctional.

Although we welcome the appearance of new generation business support structures - co-working offices, business hubs, etc. in Bihor County, we were surprised to find that despite its high clustering potential in computers, electronics and optics; textile and clothing industry; plastics and non-metallic products; furniture industry, tourism and hospitality etc., none of these industries are covered with active clusters in the Bihor County. Also, we noticed the total absence of the economic agglomerations based on dynamic agglomeration economies which could encourage Bihor County's capacity for innovation.

The projects in preparation at Bihor County level in order to access the ROP 2014-2020 funding for a business incubator in creative industries with a great clustering potential (applied by Oradea City Hall), as well as for a scientific and technological park (prepared by Bihor County Council in partnership with Oradea University), as well as setting up innovative clusters in smart specialization fields established at regional level are key emerging challenges for the local and regional development.

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MODERN APPROACHES TO TAX AMNESTY

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Abstract: Tax amnesty is an official exceptional proposal of central state administration for contributors to pay their outstanding payments at both state and local levels in exchange for cancellation of penalties to be applied in case of irregularities. Its necessity can be presented in three ways. The first is to eliminate confusion about legislation imperfections, its treatment and resulting consequences. The second is related to collection of budgetary means. The third is authorities' hope to discipline taxpayers and bring their work to legal area. Being applied in Republic of Moldova in the past, contradictory views on its application in the future are presented now. In this context are presented problems, which can be grouped in two directions: the lack of clear presentations of real results of previous tax amnesty and examining real interests of governors in new tax amnesty organizing. The purpose of research was to establish essence of fiscal amnesty, forms of its application and its effects. For this purpose, the country's experience, in which fiscal amnesty was carried out, was studied. Finally, some conclusions were drawn on effectiveness of fiscal amnesty as a specific method of public finance management that will be reflected in this article.

Key words: tax amnesty, taxpayer, debt, tax.

JEL Classification: E61, E62, H30, H61.

1. Introduction

The notion of "amnesty" comes from the Greek language - amnestia - which means forgiveness, forgetting. Amnesty has deep historical roots and is applied in various forms for hundreds of years, as a rule, to persons who have committed criminal offenses (Law Book, 2018).

Amnesty is a measure which can be applied by State authority to persons have committed crimes, which includes the removal of penalty or partial release of penalties, the replacement of for illness or the dismissal of a criminal offense (Dic Academic, 2018).

The use of amnesties is usually justified by considerations of humanism, but amnesties have purely practical tasks, or contribute to the achievement of specific political goals.

Recently, with the development of social relations in the field of economy, new forms of amnesty appeared - fiscal, financial, economic, capital amnesty etc.

Amnesty in the fiscal sphere can take the form of tax amnesty, amnesty of capital (also called financial amnesty), tax debt restructuring and amnesty of persons who have committed tax offenses as part of amnesty of persons who committed criminal offenses (Law Book, 2018).

At present, the opportunity of tax amnesty is discussed in the hope of number of problems solving, which implies the need to study international experience in this field in order to apply optimal solutions in Republic of Moldova.

2. The essence of tax amnesty

2.1. Tax amnesty definition

The specialized literature contains several concepts of fiscal amnesty:

- Tax amnesty is a series of measures to provide taxpayers with the right to pay amounts of taxes for which payment deadlines established by tax legislation have expired (Tax amnesty (b), n. d.).
- Tax amnesty is a release of person guilty of tax offense (crime) committing from administrative, financial and criminal liability provided by law for specified offense (crime), on the basis of Amnesty Act, adopted by supreme body of state authorities. Acts of amnesty are of a normal nature, i.e. apply to all persons who committed punishable acts

before the entry into force of these laws and meet established requirements (Tax amnesty (a), n. d.).

- Tax amnesty is a set of measures to pay off tax and other obligatory payments by taxpayers, as well as exemption from payment of fines and penalties from the amount of voluntarily paid payments to budget and extra-budgetary state funds (Dic Academic, 2018a).

- Tax amnesty is a limited opportunity for a certain group of taxpayers to pay a certain amount in exchange for forgiving a tax obligation (including interest and penalties) related to an earlier tax period and without fear of prosecution. Usually, this expires when an authority starts a tax audit of tax previously owed. In some cases, legislation providing for amnesty also imposes more severe sanctions on persons eligible for amnesty but who do not accept it (Tax amnesty, n.d.).

Some literary sources contain the notion of tax evasion amnesty, which refers to a rule or law issued by central authorities to forgive tax liabilities of previous years to taxpayers. With this measure, government offers an advantage to taxpayers, allowing them to fix mistakes or omissions in tax returns without fear of legal action. It is usually set for a fixed period of time and may be linked to outstanding tax liabilities from one or more annual periods. If taxpayer fails to cancel the debt by using amnesty and then evasion is discovered, severe punishments and sanctions apply (Tax evasion, n.d.).

In some cases, the fiscal amnesty is combined with capital amnesty, which means the legalization of money in the form established by state. As a rule, a mandatory condition for amnesty of capital is payment of a certain tax and demand for partial or total bringing of capital into country (Politike, 2018).

Violations of legislation on taxes and fees are divided into three main types (Belova, 2014):

- Tax offenses;
- Violations of legislation on taxes and fees, which contain signs of an administrative offense;
- Violations of legislation on taxes and fees, which contain elements of crime.

For them, respectively, three types of legal liability are provided: criminal, administrative and tax (Belova, 2014).

Therefore, the essence of tax amnesty consists in release of individuals from tax liability, basis of which is a perfect tax offense.

At the same time, the act of amnesty of persons accused of committing tax crimes presupposes their release from criminal responsibility, and not any other. Consequently, tax amnesty and amnesty for committing tax crimes are completely different kinds of amnesties, having different grounds and entailing different consequences.

Tax liability, as is known, taking into account the correlation between financial and tax law as a branch and sub-sector of law, is a kind of financial and legal responsibility. Proceeding from this, the State will to free from tax liability does not fully cover the entire scope of financial and legal responsibility, which, in addition to tax, may include budgetary, banking and monetary responsibility (Belova, 2014).

That is, financial amnesty in its content is much broader than tax amnesty and correlates with the latter as a whole and part. This allows us to assert that financial amnesty is an independent type of amnesty (Belova, 2014).

Usually the interest of a taxpayer is that having paid off the state on old accounts, he gets the opportunity to legalize all his savings and start a tax life from scratch, without fear that at any moment authorities can arrest his bills, describe his house and himself it should be prosecuted for old sins (Tax amnesty (c), n. d.).

Of course, there is an unpleasant side here. First, he needs to pay debts, which usually do not want to do. Secondly, there are reasonable fears that tax authorities, having received information on past non-payments, will not release the perpetrator from their field of vision and will not allow them to live peacefully in the future (Tax amnesty (c), n. d.).

2.2. Technological aspects of tax amnesty

World practice knows a lot of variants of fiscal amnesty. They can be organized at both state and local levels. They may refer to certain categories of taxpayers (representatives of certain professions, companies and entrepreneurs who operate in certain branches of the economy). Tax amnesty can also be carried out against certain types of tax (Law Book, 2018).

The amnesty may refer to the debt now found by State or at the stage of judicial examination, which was not previously known to competent institutions. Amnesty conditions may provide for collection of the entire amount of debt together with calculated penalties, but the payment of hidden income tax at a usually new preferential rate may be required. For hidden amounts of tax, interest may be applied for the period of admission of tax offense. Debt payment can be claimed in full or in installments. Often taxpayers who have refused to participate in the amnesty program are subject to additional sanctions (penalties for non-participation). However, notwithstanding the diversity of possible conditions, mandatory condition of "forgiveness of sins" is always payment of debts to State (Law Book, 2018; Tax amnesty (c), n. d.).

Basic goals of tax amnesty as a rule are as follows (Monikov, 2016):

- 1) State budget supplementing on account of received funds as a result of declaring hidden or late payments of taxes;
- 2) Financial stabilization of bad payers debtors, ensuring, in certain cases, the passage of funds from shadow sector of economy into legal one;
- 3) Repatriation of foreign capital in the real sector of economy;
- 4) Creating legal bases and mechanisms in State relations with taxpayers;
- 5) Prophylaxis of tax offenses.

In each specific case, tax amnesty implies any combination of following options (Tserliukevichi et al., 2014):

1. Partial or (rarely) total exemption from debt;
2. Partial or complete disposal of penalties and fines;
3. Getting rid of criminal liability;
4. Payments by installments.

In addition, within the framework of a tax amnesty, following guarantees can be provided (Tserliukevichi et al., 2014):

1. Prohibition on checking declarations for past years in the event that the last declaration is true;
2. Immunity from inspections for a certain period, in case of increase in tax payments by a certain percentage in current and future periods in relation to previous year.

There are several prerequisites for tax amnesty (Tserliukevichi et al., 2014):

1. Amnesty in most cases is associated with tax reform.
2. State that considers amnesty should be prepared, on the one hand, to simplify the regulatory environment, and, on the other hand, to strengthen control over compliance with tax legislation at the end of amnesty.
3. A frequent reason for amnesty is the unsatisfactory state of fiscal system and desire to achieve macroeconomic stabilization.

Prior to organizing tax amnesty, it is necessary to establish its format (Tserliukevichi et al., 2014):

- Groups of taxpayers whose aim is amnesty;
- Amnesty agreement with basic laws of country, including the Constitution;
- Basic legal consequences for taxpayers;
- Specifying whether amnesty is permanent or one-time;
- Specifying whether anonymous payments of tax debts are possible;
- Specifying should the taxpayer return the declared income abroad, back to the country;
- Note how to file amnesty in information sources and how to make sure that everyone who can use the amnesty knows about it and understands its mechanisms.

As a rule, tax amnesty has following characteristics (Tax amnesty (b), n. d.):

- Applying once, meaning that the state grants the right to legalize earnings once in a limited time.
- The main purpose of fiscal amnesty is not to complete the budget but to move to legal base in relations between taxpayers and State.
- There must be objective premises for fiscal amnesty. Usually, it is about fiscal system's imperfection during fiscal amnesty.
- Legalization of property for which tax is paid and refusal of state to lawfully persecute offenders.

2.3. Positive and negative aspects of tax amnesty

Analyzing the experience of different countries allows to highlight some positive aspects of fiscal amnesty:

- First of all, an obvious advantage of tax amnesty is to obtain State resources for the State budget from collection of hidden taxes or with expired payment deadline. Also, a certain economy is obtained from funds, which would be spent by public bodies for undertaking fiscal and other control measures related to conduct of investigations, prosecution of lawsuits (Law Book, 2018).

- Secondly, it is the widening of tax base on the account of removing oppressors from the shadow sector of economy into legal economic circuit. It is assumed that by getting the chance to get rid of old debts, taxpayer will not want to buy new ones and will pay taxes correctly and on time (Tax amnesty (c), n. d.).

- Thirdly, if taxpayer obtains the possibility of his assets accumulated outside the country legalizing, under the conditions of amnesty, it is possible to increase the volume of investments on the territory of country on the account of repatriated means (Tax amnesty (c), n. d.).

- Fourthly, we can talk about the prophylactic importance of fiscal amnesty. Given that discovery of tax violations is fully real and subsequent punishment is unavoidable, the forgiving of tax violations in return for debt repayment to State contributes to formation of a favorable business climate in the country and, in particular, to creation of trust relationships between taxpayers and State.

The group of authors led by Tserliukevichi has a separate opinion on the benefits of tax amnesty (Tserliukevichi et al., 2014):

- Rapid increase in budget revenues, as a rule, is the main advantage in short term. However, in longer term, tax amnesty can generate positive effects for fiscal sphere and national economy as a whole.

- If this campaign is successful, we can expect an expansion of tax base in subsequent periods by including part of shadow segment of economy in the perimeter of tax control.

- Tax amnesty can generate an inflow of capital into country, which was derived from it to avoid taxation.

- Tax amnesty can help increase tax discipline by providing horizontal (subjects with the same level of income are subject to the same tax burden) and vertical (the probability of tax evasion does not depend on size of firm's turnover) tax equality. The latter effects are favorable not only for fiscal stability, but also for a competitive environment.

At the same time, the same authors argue that any campaign of fiscal amnesty will inevitably have direct and indirect costs (Tserliukevichi et al., 2014):

- As direct costs, it is appropriate to consider administrative costs of the campaign. Often, this component is ignored, although government spending on development of the campaign itself, its administration and conduct can be very significant.

- As a lost profit, can be considered income that budget would receive in absence of tax amnesty. For example, the revealed tax infringements would cause inflow of incomes on them in the form of penalties, fines, etc. It is logical to omit these costs only if economic authorities without tax amnesty could not provide (as result of compulsory measures to enforce tax legislation) any revenues to budget from unobserved economy.

- As result of tax amnesty can be not only improved tax discipline, but also its deterioration.

But, at the same time, tax amnesties have a number of negative aspects:

- First of all, it basically represents a violation of the main principle of tax equity, expressed through the equality of all before the law and the obligation to pay taxes.

- Secondly, it is the psychological effect expressed by the wrong perception of the situation by taxpayers that the state, exonerating from liability the fraudulent violation of fiscal legislation, has no significant power to ensure tax collection.

In the theoretical literature there is a whole list of channels and mechanisms that can cause deterioration in tax discipline (Tserliukevichi et al., 2014):

- Conscientious taxpayers may have expectations of new amnesties and incentives to evade taxes. Expectations of amnesty can become self-fulfilling, since with mass evasion from taxes, government will increasingly be inclined to a new amnesty;

- Amnesty sends a signal that tax authorities are not able to ensure the collection of taxes;

- Amnesty cannot always affect those who had reasons to evade taxes earlier;

- The injustice of amnesty can affect the attitude of bona fide taxpayers to tax system;

- Undeclared income can often have illegal sources. Often such revenues are not declared in any case, because the amnesty does not provide protection from crime.

Given the availability of both benefits and costs, the final financial result of tax amnesty is appropriate to be considered on a net basis that is as the difference between the inflow of funds as result of favorable effects of tax amnesty and corresponding direct and indirect losses (Tserliukevichi et al., 2014).

3. Experience in the field of fiscal amnesty

3.1. International experience in application of tax amnesties

There is a widespread experience of tax amnesty in the world. Examples include the following (Tax amnesty, c):

- In 2004, Germany organized a fiscal amnesty in connection with tax evasion.

- In 2010, fiscal amnesty for millions of Greek citizens was deployed in Greece by paying only 55% of outstanding debts. In 2011, European Commission asked Greece to

amend its tax legislation, because tax amnesty was considered discriminatory and incompatible with EU treaties.

- Italy organized a tax amnesty in 2001, which became known as Scudo Fiscale and which was prolonged in 2003. In 2009, the object of Italian tax amnesty was repatriated with a 5% single tax. A total of around €80 billion has been declared, resulting in tax revenue of €4 billion. Italian Bank estimated that Italian citizens had about €500 billion in undeclared funds outside the country.

- In 2007, \$130 million was collected in first six months under Russian tax amnesty program. Russian program did not refer to people previously convicted of tax offenses.

- The 1988 Irish tax amnesty is considered one of the most effective, since perceived means accounted for about 2.5% of country's GDP, which was enough to cover the budget deficit of that year.

- In the US, tax amnesty is often organized in some states. Thus, in 1998 they were held in Louisiana and Wisconsin. From 1982 to 1997, various fiscal amnesty programs were implemented in 35 states. Money resources were collected in the amount of USD 2.1 billion and most successful programs increased local budgets by 1-3%.

Successfully achieved success amnesties have been deployed in United States in 2009, 2010, 2011 and 2012. In 2009, fiscal amnesty benefited 14700 people. In 2012, their number exceeded 33,000 people, and budget revenues - \$ 5 billion. (Zaharov, 2014)

Tax amnesties in Brazil have led to fact that taxpayers have strengthened their opinion that it is better not to pay taxes, but wait for the next amnesty. To ensure the flow of funds from amnesties, local authorities greatly increased the number of inspections, which led to a large number of litigation and created a huge burden on judicial system. In addition, amnesties led to cases where companies sued the State to delay the time in anticipation of next amnesty (Tserliukevichi et al., 2014).

As Adrian Lupusor says, "long-term tax and capital amnesty leads to an even greater indebtedness of countries because it creates expectations for population, economic agents about future amnesty. In some countries, firms at a certain point in time, ceased paying taxes, anticipating new amnesties. For example, seven amnesties were organized in Kazakhstan. Argentina, another country thriving in this vicious circle, is at the 21st amnesty" (Moldova Curată, 2018).

3.2. Experience of Republic of Moldova

Republic of Moldova also has the experience of applying tax amnesty.

On April 27, 2007 Parliament of Republic of Moldova adopted the Law no. 111-IV, which foresaw the introduction of amendments and completions in some legislative acts with the aim of liberalizing the economic activity.

This initiative was based on three pillars (Berbeca and Tăbârță, 2016):

- 1) Capital legalization program - State has proposed to support the legalization of capital or value of capital declared through amnesty in exchange for payment to state budget of 5% of this amount.

- 2) Tax amnesty provided for cancellation of arrears reflected in the system of evidence of State Tax Service, National Social Insurance House registered on 1 January 2007. Tax amnesty meant the cancellation of about 4.4 billion lei - 2.16 billion lei basic payments and 2.18 billion lei the amount of increases and fines related to National Public Budget, not paid on 1 January 2007. The argument in favor of these debts cancellation with control suspension of previous periods was claimed that several production assets, economic assets are removed from economic circuit due to existing historical debts, which led to seizure of these assets. In other words, this law provided for the cancellation of all

tax arrears accumulated up to 2007, regardless of whether it might have been possible to collect some of them.

3) Reforming tax system for legal persons. Revenues for enterprise development and reinvestment would be taxed at zero. At the same time, the tax quota was maintained at 15 per cent if income was taken out of production and consumer-oriented production.

In 2007, the biggest stake was tax amnesty, because many economic agents who were actively working and could pay their debts were exempt from debt. In fact, it was an instrument to get these businesses to pay for 2009 election campaign. Tax amnesty was made before 2009 parliamentary elections.

Analyzing statistically reported data at the end of this 2007 amnesty capital move, we find that results are much lower than expected.

According to 2007 management's estimates, estimated legalization was about \$1 billion. In fact, legalized assets and money were in total amount of 360 million lei until 30 December 2008, which constituted about \$35 million at official rate of National Bank of Moldova on 30.12.2008. Respectively, revenues to state budget were about 18 million lei after applying legalization fee (5%).

The "zero" quota on reinvested tax has had a negative impact on revenues of local public authorities that have become dependent on transfers from state budget. The state lost about 4.3 billion lei (revenues projected for the 2007 budget) following the cancellation of debts, the increase of debts and unpaid fines. Much of these arrears were formed by January 1, 2001 - about 2.8 billion lei - but this package approach instead of an individual and rigorous approach canceled debts of state-owned enterprises without creating any incentive the exchange of this generous treatment, these enterprises continued to generate losses caused by inefficiency. The amount of debts in 2010, one year after their cancellation, amounted to about 1.2 billion lei.

On 16 December 2016, Parliament approved in first reading the draft law on capital liberalization and tax incentives which, essentially, was composed of two basic components (E-democracy, 2016).

The first one was to liberalize capital: any natural person (citizen of Republic of Moldova or his legal representative (parent, adopter, guardian, curator) can declare his assets (eg: money means, real estate, shares, securities, road transport) which were hitherto registered with other persons (eg relatives, interleaved persons, etc.) or not registered at all, or could re-evaluate declared assets at a lower value, legal protection being guaranteed (State can not verify the origin of these and not to impose sanctions on public officials for illicit acquisition or non-declaration of such property) in exchange for a 2% tax on the value of assets.

The second component concerned tax incentive: cancellation of all tax penalties of individuals and legal entities in exchange for payment of due amount.

In essence, the draft law provided for an amnesty of capital and a quasi-fiscal amnesty (it only referred to tax penalties, not basic debt).

The nominee draft law was severely criticized by civil society and experts. According to them, the document presents imminent risks for Republic of Moldova, which are to compromise the rule of law and fight corruption, legalize money laundering and tax evasion, further erode the image of banking sector and cool relationships with development partners, according to signatories of the statement (Anticorupție, 2018).

The opinion expressed by representatives of National Anti-Corruption Center on the draft law was particularly hard (Anticorupție, 2018):

- Project regulations on capital liberalization and fiscal stimulation create the risk of liberalization of capital from crimes, reduction of revenues to national public budget, fraudulent take-over of foreign property, proper functioning of Prosecutor's Office,

National Integrity Agency, National Anticorruption Center, Internal Affairs, other authorities with competence in integrating, preventing and combating corruption, preventing and combating money laundering, recovery of criminal assets, including in the process of investigating fraud in financial and banking sector, pose a risk of legalizing assets under seizure and those to whom the court did not order confiscation by a final judgment.

- The promotion of project in the current editorial office is inappropriate due to harmful nature of provisions and effects that will be generated for normative and institutional framework, economic and competitive environment, as well as image and reputation of public authorities and financial and banking sector in front of good citizens from Republic of Moldova, international bodies and other states with which authorities have strategic relations.

According to expert Adrian Lupușor, the nominated draft law has unexpected shortcomings (Moldova Curată, 2018):

- Expectations are being made about future recovery and, in the long run, tax discipline is undermined, because those who are violating legislation are being favored and those who comply.

- Capital amnesty could foster the development of money laundering phenomenon, as it could be used by interleaved persons from Republic of Moldova who declare assets of dubious origin and pay a modest tax of 2 percent. These assets, thus entered into the legal circuit, can also come from abroad and offshore areas.

As a result, the draft law was withdrawn from Parliament.

3.3. Ways to streamline tax amnesties

The international experience allows us to highlight conditions in which tax amnesty can be effective (Tax amnesty, c):

- Serious lack of punishment guarantees;
- Confidentiality of information keeping;
- Applying amnesty once;
- Non-confiscation character;
- Developing a broad campaign of explanation and propaganda.
- Combining amnesty with real threat of punishment in the event of subsequent tax concealment.

The efficiency of fiscal amnesty also largely depends on general situation in economy as well as the state of mind in society.

In order to create real incentives for return of entrepreneurs from shadow to legal, it is important to have a clear tax system and tax burden must be bearable. In addition, an efficient tax service is needed, which is primarily able to detect bad payers and to hold them accountable and secondly to cooperate with honest taxpayers, to ensure them consultation and other assistance instead of creating bureaucratic problems (Tax amnesty, c).

In order to ensure the amnesty of capital, in the opinion of many specialists, this measure must be carried out under certain conditions, such as creating legislation, providing access to banking information, establishing serious liability for non-declaration of funds on bank accounts abroad, increasing investment attractiveness, reducing tax burden combined with compliance with tax equity rules. It is also important for the country's international authority to work with interesting countries for bad payers. (Zaharov, 2014)

Tax amnesties cannot be effective in corrupt countries, where ruling parties control policy enforcement bodies. Many of those who could benefit from the amnesty of capital

will not be afraid of staying away from their properties, because of tradition of taking (more or less aggressively) control of some properties, using blackmail, political and other illicit instruments. (Berbeca, Tăbârță, 2016)

4. Conclusions

Tax amnesty means a complex of measures related to granting to taxpayer the right to pay amounts of taxes, at which the payment terms established by legislation passed.

Tax amnesty is an official proposal of central state administration for contributors to pay their outstanding payments in exchange for the cancellation of penalties to be applied in case of irregularities.

Tax amnesty is not only undertaken to collect budget revenues, but it is more important for state and taxpayers to move to a new level in their relationships when state allows for legalization of income and wealth obtained by circumventing legal rules, and taxpayers recognize the obligation to pay taxes.

It can be undertaken at both state and local levels.

Tax amnesty must be essentially a one-off and limited in its possibilities measure.

The effectiveness of fiscal amnesty is dependent on a number of factors, including the quality of tax legislation, the ability of the tax service to ensure tax collection and the likelihood of tax offenses being punished.

Also, the success of fiscal amnesty is determined by its integration into the overall complex of economic and financial policies promoted within the state, including the efforts of authorities to combat the shadow economy.

Similarly, it is necessary to take into account the costs and possible consequences of fiscal amnesty.

To create real incentives for return of shadow business to legal economy, it is very important to have a simple and clear taxation system and taxes themselves should not be predatory. Otherwise, price of staying in this area may be so great that amnesty will not attract taxpayer to cooperate with State.

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SUSTAINABILITY AND INNOVATION – PREREQUISITES FOR THE ECONOMIC DEVELOPMENT

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Abstract: *The company's sustainability represents the results of investments in modern technology and diversification of activity that lead to productivity growth and increased turnover. Innovation is at the heart of every successful organization, an engine for economic growth and the promotor of company competitiveness. Innovation consists in creating or adapting a product or service and putting it on the market successfully. These will be possible by applying an organizational, managerial and commercial system in order to increase the economic competitiveness of the company. The company's development strategy to expand the customer network, the range of products and services will reduce the financial risks and increase the investment sustainability. Moreover, the development of a new range of products and a marketing strategy to increase the market share will create a favorable image of the company, thus contributing to competitiveness and long-term economic performance.*

Keywords: *sustainability, innovation, business, company, economic development*

Jel Classification: *O3.*

1. Introduction

Sustainability should be integrated into economic development strategies of companies. The company's development strategy aimed at expanding its customer network and range of products and services will reduce financial risks and increase the investments sustainability.

Companies should consider the risks and use these challenges to achieve long-term commercial success.

However, the business environment must contribute to innovations and finding tailored solutions. Productivity and turnover will increase due to investment in modern technology.

2. Sustainability in business

Climate change, sustainability and environmental policies are becoming increasingly important for all organizations and many representatives of the business environment recognize that sustainability influence companies' development. There are companies with high performance team with knowledge and skills that can create new economic opportunities.

More and more companies understand the importance of sustainability issues and their integration into development strategies of the organization.

Globally, sustainability is an important area for companies. Companies worldwide have concerns in this regard, care for the environment, consumer health, climate change, recycling.

Sustainability is a critical issue for emerging markets where companies goal is economic growth, but also we should consider the impact on the environment and the communities in which it operates.

Also, companies are concerned to reduce emissions, consume less raw materials and protect nature. This is also the case of the business environment from Romania which have increased their activities in order to develop more "green" business. Unilever, for example, has several directions included in their sustainability plan. Some of them are concretely related to money. For 13 years, Unilever is the leader in the Dow Jones Sustainability World Indexes among food producers (Business Magazin, 2018).

Sustainability stands today the success of a business and its continuity and exclusive focus on financial performance could lead to losing sight of important issues for the company, but also for society as a whole, as rational management of finite resources of planet. These are some of the key findings of the PwC Business Success Beyond the short term, based on the results of the 17th edition of the survey PwC Global CEO Survey.

Incorporating sustainability in the business model performance is important not only to achieve a competitive advantage for companies, but also to increase efficient and socially responsible.

Companies sustainability means more than using energy saving bulbs and recycle waste, requires more than the activity undertaken by the business units of social responsibility. Sustainability includes also procurement activities, finance, risk management, strategy, technology, relations with investors and the involvement of human resources department (Revista Biz, 2018).

3. Innovation and Economic Development

Innovation is an engine for economic growth and is at the heart of every successful organisation.

There are three main reasons for the low level of Research & Development and Innovation activities in enterprises:

- the public research base is not oriented to the demands of the economy, and in many fields is poorly developed;
- the enterprises hesitate to increase their competitiveness based on research and innovation activities because of high market risks and technological uncertainties, some progress as registered in the last period through the research programmes launched by the Ministry of Education;
- the financial markets are not supportive enough in order to encourage research activities;

In order to determine a significant increase of the volume of Research & Development and Innovation (RDI) activities developed by or for the enterprises, the government policies in the Research & Development (R&D) field pursue the following main directions:

- stimulation of R&D activities achieved in partnership between R&D profile organisations and enterprises;
- the development of the activities and infrastructures specialized for technology transfer and innovation.
- direct support for RDI activities in enterprises;
- investments in public, and private research infrastructures.

The idea of an economic activity is fundamental in creating a business. In selecting the ideas, it is necessary to point out two important points:

- there is a good idea in itself, there is, however, appropriate ideas that can be developed and ideas that remain just an idea. Therefore, we can say that the idea should be linked to a plan to allow its implementation;
- the idea is creative when it is linked to an opportunity because the development of a business aims to satisfy economic needs in terms of efficiency. Therefore, novelty, originality and innovation are not binding points in creating a business, but are necessary for higher benefit of opportunities and for a more profitable activity.

Creating business originates finding economic needs not covered by existing offers, but by the simple idea that may prove to be excellent in terms of initiating a business. If the idea is new, it must be proven its acceptance by future customers. If it leverages an

established business will question the real utility in relation to the existent offer on the market, product features or service in question, utility, performance prescribed, operating principles of the business created.

An important role in formulating the business idea is the creativity that allows the development of new ideas, original, in conjunction with opportunities.

Before you commit time and money to implement the business idea, you must verify the suitability and viability. Thus, there will be a series of investigations to determine the risks and conditions for success, realistic idea and likely outcomes.

It is believed that for a new economic activity, the most important point is the idea. Without this statement to be a certainty, it should be recognized that the idea underlying the business may have a decisive role.

Every good business idea that work, there are a thousand that do not. Therefore, it will save time, hassle and money if the ideas are tested before implementing them. This will acknowledge that the idea is not so good and can lead to saving time and money.

The process of testing new business ideas leads entrepreneurs to consider the main issues that should consider creating a new business concept. Ultimately, these efforts will allow turning ideas into one with real chances of success.

Innovation is the key to increasing competitiveness of European businesses and support economic growth.

Expenses for research and development companies in Europe are considerably lower than in the United States.

There is also a strong correlation between innovation and human resource development. It is noticed the absence of correlation between the needs and the offer in the educational field.

Despite the large number of graduates in science, Europe is facing a shortage of researchers and scientists.

Moreover, European education and training seem unable to provide a workforce with the skills and knowledge to meet the needs of a competitive economy. This mismatch is a serious obstacle to economic growth and innovation. Therefore, at the institutional level, it should be improved the work environment for scientists and researchers in order to make it more attractive to them.

Until recently, innovation policy focus on technology-based research in mostly aimed at the industrial sector. Innovation means creation, adoption or adaptation of a product, new or improved service or process production and its successful market introduction. Therefore, when it comes to innovation, we consider a whole system of organizational, managerial, commercial and educational as a key factor contributing to the economic competitiveness of a company and the regional economy which it belongs. The core innovation is formed by the human and social aspects, creative people whose collective capacity shape the future that they desire.

Foundation to support increasing innovative capacity is the culture on innovation forming and changing young people's attitudes towards education process. Innovation culture, closely related to the entrepreneurship should be included in school curricula, as well as universities and supported by public policy.

Promoting innovation and entrepreneurship is a priority. Europe has a vast innovation potential - but needs to step up its efforts to bring innovation to the real economy. It is essential to stimulate interaction between industry and research institutions if we are to make the most of our entrepreneurial spirit. The industrial sector is a vital source of growth and employment and will continue to play an important role in the knowledge.

Creating the conditions for a much higher percentage of entrepreneurs who start a business to succeed to develop it, will support economic growth and prosperity. It is

therefore vital that all institutions and economic partners to promote a true culture of entrepreneurship.

4. Research and modern technology

Innovation requires an adequate research infrastructure, resource efficiency and new ways of organizing. It is necessary to promote cooperation - both international and interregional cooperation - leading to the development and involvement of SMEs along with large companies. It is also necessary to support regional centers of excellence, bringing together major regional factors important from economic and scientific point of view.

At national level, the following areas of innovation, research and knowledge-based society are the most important: improving conditions for public and private investment in science and research; human resource development in a knowledge-based society and all institutions operating in this field (schools, universities, postgraduate education, health and employment) as a crucial factor underpinning competitiveness; innovation in terms of technology, social and institutional environment etc.

Therefore, it requires major objective for Romania achieving a dynamic and competitive economic environment, able to assimilate and to develop high technology fields and to respond to strategic needs of long-term development in the context of the increase of global knowledge-based economy.

Technology and changing technology has basically nothing to do with initiating the transformation from "good" to "excellent". Technology can accelerate a transformation, but it can not determine a transformation (Collins, 2006, p.25).

From this perspective, Romania is directly interested to develop capacity and increase competitiveness of RDI, which must provide the resources and infrastructure required to:

- securing and developing the internal sources in the field of science and technics as well as the equipment and the cutting-edge technical facilities required for the development of the sectors and specific areas of advanced technologies;

- increasing the uptake, implementation and development of knowledge, services and advanced technologies in the economic and social fields, to cope with technological developments at European and international level, thus ensuring sustainable growth of economic competitiveness.

It is expected that the activities in RDI to have a multisectoral and interdisciplinary approach taking into consideration the market needs. In industry, an important role is due to innovation and its specific activities: marketing technology, knowledge transfer, implementation of business.

In this context, there are envisaged activities in the field of accreditation, certification and testing, metrology and standardization, taking into account European and international requirements and practices aimed at eliminating technical barriers and ensure the free movement of goods. To create an objective picture of market delimitation of interests is necessary to conduct an analysis at micro and macro economic level (Puiu, 2017, p.27).

Increasing competitiveness by improving market access for businesses, especially small and medium enterprises can be achieved by: creating a favorable environment for business funding; development of business infrastructure (supporting incubators, business development centers, development of emerging clusters); increase the competitiveness of Romanian tourism and improving Romania's image by promoting tourism potential (national tourism brand development).

The development of the knowledge-based economy by promoting research and innovation and accelerate the development of information society can be implemented as

follows: encouraging the research&development spending (directly by increasing public expenditure on research and development, indirectly through actions such as: risk funds, fiscal measures, indirect tax, promotional campaigns); strengthening business cooperation with universities and research institutes; encouraging the use of information technology; development and improvement of public services (e-government, e-health); development of a safe and dynamic e-business.

Strengthening cooperation of companies with universities and research institutes is an important factor in terms of business infrastructure development.

The significant increase of the link between policy research, development and innovation with other government policies (infrastructure, rural development, regional development, environment, etc.) as well as support for productive investment (equipment and technologies) and supporting innovative capacity, the companies will allow the adaptation of production to international market requirements, so the development of modern economy. Romania is interested in supporting EU policies on development of small and medium enterprises. The small entrepreneurs want to receive fiscal deductions for their investments and believe that Government should pay more subsidized loans. Effects of innovation result on improving the quality of products or services, increase turnover and thus market share and productivity growth. Most entrepreneurs have used their own resources to launch or improve products or services.

As regards support for innovation, we can say that many SMEs turn to credit for innovation activities and only a small part receive financial support, patents and licenses granted by State. Both SMEs and large companies managers believe that the technologies enhancing the staff productivity are becoming increasingly necessary. Also, they believe that the technologies to remote access to communication networks are critical to efficient business activities. In addition, SMEs managers recognize the fact that business success is closely linked to security and data communications business. Moreover, they claim that, from this point of view, network security is a vital element.

5. Foreign investments in Romania

A prerequisite for economic development in Romania is represented by interest in foreign direct investment (FDI), which has a double motivation: on one hand, the foreign direct investment can play a complementary role that supplements the limited financial resources of the host country and on the other hand, it may play a role in overcoming structural inefficiencies through modern technological flows, management experience, but also facilitates the products access on the foreign market and balances the commercial activities and the payments. Therefore, it is necessary to attract foreign investment in the Romanian economy, as society and economy face a large number of unemployment with a low level of per capita income, many private companies operate with difficulty and there is not enough competitive domestic capital to exploit the material, human and natural resources of Romania.

It was developed a system of facilities for investors. Facilities shall be granted for investments in the fields of: agro-industrial processing activities; top fields of manufacturing; production and supply of electric and thermal energy; production of equipment for energy efficiency and the use of renewable energy resources; encourage the use of renewable energy resources for the production of electricity and/or heat; protect and improve the environment; water supply, sewerage, waste management; IT and communication; RDI and development of new products; services for the workforce.

If an investor intends to make an investment in Romania, in order to obtain certain facilities, it must submit its investment project together with the application for facilities to

the relevant authorities at central or local level. This application must be submitted prior to the implementation of the investment project.

Through foreign investment, there can be achieved the technology transfer and the innovation activity achieved using licenses and acquiring new technology. The problem is how to make access to technology, because sometimes outdated technology is provided. On the other hand, not always there are local human resources capable to operate the new technology and to make profit. Access to technology and advanced knowledge is more important than the amount invested and the import of technology mostly determine a research activity for adaptation to the host country conditions.

From the technological side, foreign direct investments contribute to the introduction of new technology that determines the production and marketing of a new product or reducing the price of an existent good, introduction and development of new skills to work with new technology in case the foreign direct investment involve flows of technology, as well. This advantage is very important for local firms because they use old and outdated equipment and technologies which lead to lower quality products and reduced performance.

6. Conclusions

An important role in increasing the competitiveness of industrial products and services are the development and optimize of the infrastructure for conformity assessment in industrial sectors in accordance with the principles and practices of the European Union.

The concerns for sustainability and innovation in business can contribute to create or adapt and introduce the new products or services on the market.

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THE PUBLIC AUTHORITY AND THE PUBLIC INSTITUTION

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Abstract: According to art. 2, paragraph 1, letter b) of the Law no.554 / 2004, public authority - any state body or administrative-territorial units acting in a public power regime for the fulfillment of a public legitimate interest; are considered to be public authorities within the meaning of the present law private legal entities which, according to the law, have acquired public utility status or are authorized to provide a public service under a public power regime. According to Article 2, paragraph 30 of the Law no.500 / 2002, public institutions - a generic name that includes the Parliament, the Presidential Administration, the ministries, the other specialized bodies of the public administration, other public authorities, the autonomous public institutions, as well as the subordinated institutions / their coordination, financed from the budgets stipulated in art. 1 par. (2). The notion of "public authority", as defined by art. 2 par. (1) lit. b) of the Law of administrative contentious no. 554/2004, is not similar to the "public institution", as provided by art. 2 par. (1) point 39 of the Law no. 273/2006 on local finances.

Key words: public authority, institution, administration, public power.

JEL Clasification: KO1.

Public power organized on the territory of the state is exercised by it in three forms: legislative, executive and judicial. The state exercises these powers, or "functions" as some theoreticians call them, through certain organizational structures created, called "public authorities" or "organs", which exercise these functions from the state's empowerment.

The legislative (legislative drafting) function is exercised by the Parliament, the executive (executing and executing law) functions are exercised by the public administration authorities, organized at central and local level, the judicial or judicial function, as defined reputed Professor Tudor Drăganu (Drăganu, 1998) (Conflict Resolution) is exercised through the courts, organized both at central and local level. All these organizational structures represent, internally and externally, the state, as an organized public power of the whole society, being themselves endowed with state power, which each exercises within the limits of the competences with which they have been invested by the state.

What distinguishes, however, the state as a form of organization of society, from the other organizational structures that exercise one or other of the "functions" of the state, is the scope of their attributions. This sphere, in the case of organizational structures created by the state, is limited to the function (power) it exercises, while the sphere of state attributions is wider, including practically the competences of all the organizational structures created by the state. Both the state and its public authorities have several functions:

- those concerning the organization and leadership of society, its governance;
- others, to ensure the necessary living, working and living conditions for the members of society.

Transposed in legal terms, the first category of attributions is defined by the literature as "public law attributions" or "public power" and gives the state and the organizational structures created by it the right to adopt acts of authority, and the other category attributions are "private law duties" and give these structures the right and duty to administer national wealth in the interests of those who have entrusted their power.

Through the structures that the state creates at central and local level, it exercises all three of its functions.

From this point of view, a particular feature concerns the exercise of the legislative function. The Romanian state, for example, reserved the exercise of this function only for the public authorities representing it at central level, the Parliament. The development of laws, ie primary legal rules (regulating for the first time a problem or a field) is not within the competence of any public authority at county or local level. The state did not create legislative authorities at these levels.

Instead, for the exercise of the other two functions (powers), the state has created a network of public authorities, specific to each, executive power authorities (more precisely the public administration) and authorities of the judiciary - the courts.

If we only refer to the authorities of the public administration, which are also the special object of our scientific research, we can deduce the following traits that characterize them, regarding the notion of "public authority" (Vrabie, pp.52-63) and individualize them with the other state authorities:

- they are established by law or on the basis of the law and endowed with state power, which gives them the right to use the public power of the state for the accomplishment of their own tasks;

- so that their activity does not exceed the limits of the powers with which they were invested;

- the legal acts which they issue are subject to the legality control exercised through the public authorities created by the state in the sphere of another power;

- the courts;

- they are organized both at the central and local level and endowed with specialized human resources (civil servants), material and financial, which they administer in the name of the legal entity they represent;

- state, county, commune, city;

- and to which I give him an account of how he handled them;

- the activity of these public authorities exclusively concerns a general interest, which is the state or, as the case may be, the collectivity in the administrative-territorial unit in which they are organized and operating (Apostol-Tofan, 1999, pp.37-42).

The essentials of any scientific research require that the notions with which they value have a precise delimitation, excluding the use of different notions but with the same content. The same requirement is for the legislator, and we have emphasized, especially for him, whose "order" must be clearly and precisely formulated for those who are obliged to execute them.

Keeping us in the field of exercising the executive function of the state, our attempt is to outline the main landmarks that lead us to a better understanding and delimitation of the notions of "state organ" and "public authority" or, in the sphere of preoccupations our "organs of public administration" and "authorities of public administration" respectively, all the more so since both the specialized literature and the legislation, even at the constitutional level, use when the notion of "organ state", when the "public authority", although it refers to the same organizational structure of the state (Iorgovan, 1996, p.351; Vrabie, 1999).

In order to clarify this issue, it is necessary to consider the constitutional provisions that use both notions. Thus, the Romanian Parliament is "the supreme representative body of the Romanian people" and the "sole legislator of the country", according to Article 58 (1); The Legislative Council "is Parliament's specialized consultative body" under Rule 79 (1).

The Government and ministries may also establish specialized bodies under their authority, which is recognized by Article 116 (1).

Provisions that use both the notions of "authorities" and "organs" also meet in organic, ordinary laws, as well as government decisions or ordinances.

The use of the two notions is not accidental but with enough scientific rigor as follows:

- both concepts are used with regard to organizational structures within the three powers;

- the notion of "public authority" has a wider sphere than the "organ".

Thus, in Title III of the Constitution is called "public authorities", which includes provisions regarding both state organizational structures Parliament, Government, President, ministries, courts and non-state organizational structures (local councils, mayors, county councils) representing local communities who have chosen and achieved their interests; - the notion of "organ" is also used in connection with some of the "public authorities" such as the Parliament, the government and the ministries are public authorities being included in Title III of the Constitution.

Although they are not expressly defined as organs, we appreciate that they are organs because they have the competence to organize subordinate organs of competence, or such a competence can not have if they do not themselves have the quality of organ. In the field of public administration, other structures are also organized, which the Constitution no longer qualifies as "organs" but as "authorities". Such structures are set up by their choice, as is the case with local councils, county councils and mayors, or through the authority of the law, according to Article 116 (3) of the Constitution. What characterizes these authorities, which do not have the quality of organs, is that they are organized mainly on the principle of autonomy, and therefore of hierarchical unsubsordination.

A similar situation is also in the sphere of the judiciary, where the courts do not subordinate to the hierarchy, which is why the Constitution defines them as "judicial authority" not as "judicial body". Concluding, we can say that the notion of "organ of public administration" is specific to the organizational structures established in the system based on hierarchical subordination, not on autonomy.

Thus, any "organ" of public administration is also an "authority" of the public administration, but not any "authority" of the public administration is also an "organ" of public administration (Iorgovan, 1996, pp.351-353). That is why we find it improper to use the notion of "public administration body" when referring to local councils, county and primary councils, or to autonomous administrative organizational structures, such as the Court of Accounts, the Supreme Council of Country Defense, the Romanian Intelligence Service and other such authorities. It is correctly used when referring to public administration authorities organized in the system and hierarchically subordinate, such as: Government, ministries and other specialized bodies organized under the subordination of the Government and the ministries. We can make the following points: - in the sphere of legislative power, although the Parliament of Romania is not organized in a system without distinct organizational structures, subordinated to central or local level, it still has the quality of an organ as it is expressly provided for in the Constitution¹;

- in the sphere of executive power, the President of Romania, which by its nature is a unipersonal institution, not organized in a system on the principle of hierarchical subordination, has the quality only of public authority, not of organ; - the other organizational structures in the sphere of executive power (Government, ministries,

¹ Article 58 (1) qualifies the Parliament using both concepts, respectively as the supreme representative body of the Romanian people and as the sole legislative authority of the country.

decentralized services, prefects) being organized in a hierarchical subordination system have both the quality of public authorities and the authority, the Government and ministries having the right to set up other organs in their subordination;

- the organizational structures in the sphere of this power as provided by art. 116 (3) of the Constitution can be established by organic law, being autonomous, therefore unorganized in the system on the principle of hierarchical subordination, have only the quality of public authorities, not organs. The same is true of the chosen structures - local councils, county councils, mayors - who have only the quality of public administration authorities.

Therefore, as in organizational terms, not every public authority has the quality of organ, so also on the level of the activities carried out by them, not all administrative activities are also executive activities.

Moreover, some of the administrative activities are being carried out, as we have shown, by the organizational structures that have neither the quality of authority nor the authority of public authority. The notion of public authority "defined by the Law on administrative contentious is not similar to that of a public institution" provided by art.2 paragraph 1 point 39 of the Local Finance Act. The Complaints Board, the High Court of Cassation and Justice, pursuant to art. 519 of the Code of Civil Procedure, with a view to rendering a preliminary ruling, which would resolve in principle the following issues of law:

- in the interpretation of art. 2 par. (1) lit. b) of the Law of administrative contentious no. 554/2004, it can be considered that the provider of the public water and sewerage service, as defined by the Water Supply and Sewerage Service Act no. 241/2006, and the Law on Community Utilities Services no. 51/2006 is a public authority? - the notion of "public authority", as defined by art. 2 par. (1) lit. b) of Law no. 554/2004, is similar to that of "public institution", as provided by Art. 2 par. (1) point 30 of the Law no. 500/2002 on public finances, and art. 2 par. (1) point 39 of the Law no. 273/2006 on local finances? "

According to art. 2 letter a) of the Law no.544 / 2001 regarding the free access to information of public interest, by public authority or institution is meant any public authority or institution which uses or manages public financial resources, any autonomous administration, Company Law no. 31/1990, under the authority or, as the case may be, in the coordination or subordination of a central or local public authority and to which the Romanian state or, as the case may be, a territorial-administrative unit is a sole or majority shareholder, as well as any operator or operator regional, as defined in the Community Public Utilities Act no. 51/2006.

The political parties, sports federations and non-governmental public utility organizations that benefit from public money are also subject to the provisions of the present law. b) public authority - any state body or administrative-territorial units acting in a public power regime in order to satisfy a public legitimate interest; are considered to be public authorities within the meaning of the present law private legal entities which, according to the law, have acquired public utility status or are authorized to provide a public service under a public power regime¹ (Romanian Academy, 1998, p.75).

According to art. 2, paragraph 1, point 39 of the Law no. 273/2006, local public institutions - the generic name, including the communes, the cities, the municipalities, the Bucharest municipalities, the counties, the Bucharest municipality, the public institutions

¹ Authority, authorities, s.f. - body of the state authority competent to take action and issue binding provisions; representative of such a body of state power.

and services subordinated to them legal personality, irrespective of how their activity is financed¹ (Romanian Academy, 1998, p.868).

A. The first question:

"In interpreting art. 2 par. (1) lit. b) of Law no. 554/2004 it can be considered that the supplier of the public water and sewerage service, as defined by Law no. 241/2006 and Law no. 51/2006 is a public authority? " The definition of "public authority" in art. 2 par. (1) lit. b) of Law no. 554/2004 is important and necessary for the purpose of qualifying an entity as the issuer of the contested administrative act or the unjustified refusal to deal with an application. In order to have passive legal status in disputes based on the provisions of Law no. 554/2004, the defendant/defendant must be the issuer/issuer of the act, according to art. 13 - "Citation of the parties, relations", of the aforementioned law. The subject-matter of the main action is the refusal of the central tax authority to comply with the applicant's request, a joint stock company and the owner of the contract for the delegation of the Public Water Supply and Sewerage Services Management in T. County, requesting the payment in stag the debts it has to the budget, without the provision of guarantees, under art. 9 par. (12) lit. a) of the Government Emergency Ordinance no. 29/2011. These legal provisions provide for an exception to the rule of providing a guarantee, showing that public institutions, as defined by Law no. 500/2002, as well as by Law no. 273/2006, as the case may be, are not guarantees.

The litigation between the commercial company and the tax authority is based on the provisions of the Government Ordinance no. 92/2003 on the Fiscal Procedure Code. In the substantive litigation, no consideration has been given to the request of the taxpayer commercial company from the point of view of its classification in the notion of assimilated public authority and the acts issued or concluded by a public service water and sewerage service provider because it can act both as a civil legal person, and as a person of administrative law. From this perspective, it is clear that the acts concluded by the water and sewerage service provider constituted in a joint stock company are not always administrative acts, although it can be said that it is a public authority assimilated according to art. 2 par. (1) lit. b) of Law no. 554/2004.

The fact that a company may be assimilated to a public authority is devoid of any practical consequences in the dispute which the referring court has to deal with because it does not clarify the question of the taxpayer's classification in the exception provided for in Art. 9 par. (12) lit. a) of the Government Emergency Ordinance no. 29/2011. From that perspective, it follows that the first question is inadmissible, since the notification on that point is to be dismissed as such, for failing to fulfill the condition relating to the existence of a relationship of dependence between the substance of the pending case and the clarification of the alleged question of law.

B. The second question:

"The notion of" public authority ", as defined by art. 2 par. (1) lit. b) of Law no. 554/2004, is similar to that of "public institution", as provided by Art. 2 par. (1) point 30 of the Law no. 500/2002 and art. 2 par. (1) point 39 of the Law no. 273/2006? " The provisions of art. 2 par. (1) lit. b) of Law no. 554/2004 defines "public authority" as any state body or administrative-territorial units acting under a public power regime for the satisfaction of a public interest and assimilates the notion, including those of private law who have been authorized to provide a public service. On the other hand, art. 9 par. (12) lit.

¹ Public, adj. - which belongs to a human collectivity or comes from such a collectivity; which looks at everyone, with everyone involved; - state, state; which concerns the whole people; laid the saddle for everyone.

a) of the Government Emergency Ordinance no. 29/2011 exempts the provision of a guarantee from public institutions, as defined by Law no. 500/2002 and Law no. 273/2006.

The provisions of Law no. 500/2002 are not related to the case brought to the court, defining the central public institutions, namely the Parliament, the Presidential Administration, the ministries, the other specialized bodies of the public administration, other public authorities, the autonomous public institutions, regardless of their financing, which reference to this normative act is to be removed from the content of the question. Analyzing the provisions of art. 2 par. (1) point 39 of the Law no. 273/2006, incidents of the case, it is established that they state that they are local public institutions: "the communes, the towns, the municipalities, the sectors of the Bucharest municipality, the counties, the city of Bucharest, the institutions and the public services subordinated to them, with legal personality, financing their activity".

If from the perspective of the provisions of art. 2 par. (1) lit. b) of Law no. 554/2004, the public authorities, irrespective of their rank, including the assimilated ones, are to act under a regime of public power, in order to satisfy a public interest, Law no. 273/2006 includes in the generic category of "public institutions" only certain entities, ie the administrative-territorial units, the institutions and the public services subordinated to them.

For the category of public services, Law no. 273/2006 introduced a special condition, namely, the subordination to the administrative-territorial units: communes, towns, municipalities, the Bucharest sector, the counties, the municipality of Bucharest. From the content of these legal provisions it follows that the notion of "public authority" in the Law no. 554/2004 is not similar to the "public institution" in Law no. 273/2006.

Law no. 273/2006 introduced an autonomous notion, having the support of the public services it speaks about and Law no. 554/2004, but not under any conditions, but only if they are subordinated to the administrative-territorial units. The answer to the second question by the complainant is, therefore, naturally, negatively, the notions being similar. In relation to the above, the issue that can lead to the dismissal of the case is whether the supplier of the public water and sewerage service, constituted in a joint stock company, is a public institution within the meaning of Art. 2 par. (1) point 39 of the Law no. 273/2006, in conjunction with Art. 9 par. (12) lit. a) of the Government Emergency Ordinance no. 29/2011, and if they are subordinated to the administrative-territorial units that have set up the company.

However, the analysis of the existence / non-existence of subordination can only be done by the panel which resolves the appeal on the basis of the evidence administered and is not a matter of law requiring a preliminary ruling. By Decision no. 28/2017, the HCCJ (Complete DCD / CAF) admitted, in part, the appeal filed by the High Court of Cassation and Justice - the Administrative and Tax Appeal Section, by the end of November 3, 2016, in File no. 391/36/2014, on the issue of a prior decision, and consequently states that: The notion of "public authority", as defined by art. 2 par. (1) lit. b) of the Law of administrative contentious no. 554/2004, is not similar to the "public institution", as provided by art. 2 par. (1) point 39 of the Law no. 273/2006 on local finances (The Official Gazette of Romania, 2017).

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BANK MARKETING ENVIRONMENT. PEST ANALYSIS FOR THE ROMANIAN BANK SYSTEM

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***Abstract:** The marketing environment of a company is identified in the multitude of actors and forces exterior to marketing that have an impact on the ability of marketing managers to establish and maintain successful relationships with their target group clients. This provides favourable occasions but it also poses threats. Each organisation functions under the conditions offered by its external environment. In this respect, the results of its activities greatly depend on the extent of being familiar with the physiognomy and functioning mechanism of the environment and on the possibilities and ability of the organisation to make use of the possibilities and to avoid distresses posed by it.*

***Keywords:** marketing, marketing micro-environment, marketing macro-environment, market relations, bank system.*

***JEL Classification:** M31, M37.*

1. The marketing environment of an organisation

The marketing environment where an organisation performs its activities comprises several factors which are economic, demographical, social, cultural, legal, political in nature. The entire marketing activity of an organisation is marked by a system of relationships established between the organisation and its external environment. This system may be characterised as evolutionist, open, capable of improvement through a process of continuous adaptation. In this type of system the main role is played by the environment. The environment that an organisation functions in is the starting point for the objectives of that institution – organisation, entries (stimuli) into to the system, answers (outputs) from the system, control.

2. Marketing macro-environment

A series of economic development factors play an important role in bank activities. They form the macro-environment and they are grouped according to the following: economic factors, political factors, social and demographic factors, demographic factors, cultural factors.

The marketing macro-environment includes the external forces that act upon the institution and its micro-environment, stimulating or braking its activity. These forces are grouped into:

- Demographic environment,
- Economic environment,
- Technological environment,
- Political and legal environment,
- Social and cultural environment,
- Natural environment.

These factors have a permanent influence on the activity of institutions and they are constantly changing. The components of the marketing macro-environment are described in the following.

The economic environment is made up of factors that influence purchasing power and how consumers spend their money. The monitoring of economic changes is very important for the bank system as consumer purchasing power also affects how banks may

operate on the market. Bank activities may also be affected by economic growth, inflation, unemployment level or consumer incomes.

The demographich environment may be defined according to population age, changes in family profiles, population movements to other geographical areas and an increase in the urbanisation level of the population.

The technological environment influences very much bank activities, where the administration and exploitation of data is important. IT instruments shall allow the design and carrying out of activities that facilitate services and products both in favour of the bank and the clients.

The reduction of response times and a rapid exchange of information are indispensable in bank IT systems. Thanks to the new IT systems, client-bank relationships have evolved a lot, meaning that they have become closer. For example, call centres, online banking, sms banking have appeared.

The political-legal (legislative) environment is made up of the political and legal environment. The political environment comprises the political forces, the social structures of the society and the relationships between them. The legal environment includes the legal rules and legal acts that regulate the commercial activity of an institution.

The social and cultural environment includes the organisations and factors that define a society, forming an own system of values, traditions, norms and customs that entail an ethical, moral and cultural behaviour for all the members.

The natural environment is part of the general framework in which an enterprise carries out its activity, exercising certain constraints upon it or offering certain opportunities.

Interactive marketing has in view the ability of the staff to provide services to buyers who evaluate their quality both from a technical and functional point of view. The concept of interactive marketing consists of product delivery, bank services, meetings with the clients within agreeable ambiental conditions, the existence of equipment and contact personnel (Cetină and Odobescu, 2007).

3. PEST analysis for the Romanian bank system

The marketig macro-environment for Bank X is the same as that of the entire Romanian bank system and it is characterised as follows by the PEST analysis:

a) *political factors*

- adaptation of the company to local laws;
- adaptation to employment laws that differ from country to country;
- general rules for banks that operate with natural and legal persons;
- regulations on bank activities and supervision;
- rules on profit and loss accounts;
- rules on bank managers and staff, as well as professional secrecy.

b) *economic factors*

- consumer purchasing power;
- consumer spending modalities;
- the evolution of the country's economy – the nation's economic well-being;
- economic growth;
- inflation;
- interest rate fluctuation;
- unemployment level;
- consumer incomes.

c) *technological factors*

- the administration of specific information and making use of it;
- the need for a rapid exchange of information;
- reduction of response times.

d) *social factors*

- increase in the level of education;
- habits;
- traditiona;
- lifestyle modifications.

The number of these macro-environmental factors is practically unlimited and, moreover, they are not interdependent, but they reciprocally influence each other. At the same time, we may admit – at least theoretically – that any element from the macro-environment of a company may exert some influence on its strategy although the company cannot identify and control all these influences.

4. Components of the micro-environment

A secure relationships with the external environment requires a thorough analysis of the elements and their interactions and impact on the market and on the activity or the organisation.

Factors do not act with the same intensity and to the same extent upon the activity of an organisation. Organisations enter into direct relationships with some of them and as a rule the influence is reciprocal. These form the micro-environment of an organisation.

The elements of the micro-environment may be grouped into: Supplier, Client, Competition, Public bodies.

The suppliers may be entities (companies) or natural persons. They are the first important group that banks enter into specific market relationships with, they ensure – based on sales and purchase relationships – the necessary resources for the achievement of the objectives of organisations. Suppliers may be grouped into three categories:

- *Suppliers of goods* (equipment, raw materials) – they ensure the basic elements for the achievement of the products of an organisation with the aim of satisfying customer needs;
- *Service providers* – they ensure a whole range of services that are necessary for the achievement of the objectives of an activity (marketing consultancy, bank services);
- *Workforce suppliers* (educational units, recruitment and employment companies) – are very important elements due to the influence of the human factor in work processes.

Clients represent the most precious element of the micro-environment of an organisation. Client needs greatly influence the marketing objectives of an organisation. The identification of these needs may be considered the starting point for the foundation of marketing objectives.

Depending on the nature of requests and their status, clients may be grouped into two groups:

a) *Final consumers* of products – they ensure product markets for the commodities of an organisation. They may be: natural persons, consumers, industrial users, educational, cultural institutions, governmental agencies.

b) *Intermediaries* – they help organisations to sell their products to final consumers. Intermediaries are used in areas where products cannot be distributed within own networks. Intermediaries may be grouped into the following categories:

- Traders – they are grouped into two categories: intermediation agents (they negotiate agreements in exchange for a fee, but they do not market the products) and commercial companies (those that purchase and resell products);
- Physical distribution enterprises – organisations specialised in product depositing and transport;
- Enterprises that carry out marketing services – organisations that offer marketing analyses, specialty consultancy, advertisement, relationships with mediators;
- Financial intermediaries – banks, insurance houses, investment funds that finance the organisations. The policies of financial intermediaries have an important influence on the performances of organisations.

The clients of an organisation may be in one of the following markets:

- ✓ Consumer market – persons and households that buy products and services for their own consumption,
- ✓ Industrial user market – enterprises that buy products and services in order to process them within production activities,
- ✓ Distributor market – traders who buy in order to resell,
- ✓ Governmental market – state institutions that buy products and services in order to offer public services (public order, health, defence),
- ✓ NGO market – not-for-profit organisations that buy products in order to propose them to those who need them.

Being familiar with the needs and preferences of clients from different categories is the most important task of marketing specialists. The launching of any product or service shall be guided by marketing specialists who have to take into account the opinions of clients.

Competition represents a basic element of the micro-environment of organisations; they may be differentiated according to the role they play in their relationships with clients, their behaviour in relation to novelty, market changes, the means of advertisement they use.

Competition may be defined as the totality of economic operators and natural persons that offer the same products and services for common clients.

Knowing the competition is a permanent and constant task for each marketing specialist.

Market analysis results in a competitive strategy, of the relationship between supply and demand, a combination of aims and means for their achievement. Competitive fight has the following objectives: profit, sales, innovation, social responsibility. They shall be expressed in a precise, logically hierarchised and precisely measured manner.

The means of competitive fight are the following: target market, marketing, sales, distribution, research and development, workforce qualification, supply, technology, finances, range of products. These are the spokes of the wheel: if one breaks, the wheel does not function anymore. (Manolescu, Sirbea Diaconescu, 2001)

Public bodies may influence the activity of an organisation only in certain situations and under certain conditions. The main components of public bodies are the following: Financial organisations, Local public bodies, Civic organisations, Mass-media. These are more special components of the micro-environment.

5. Market – micro-environment relationships

The presence of an organisation on the market triggers a continuous contact with its micro-environment. Organisations enter into the totality of relationships which helps them design and implement their economic activity. It is about the acquisition of goods and

services, about granting the necessary financial funds, human resources and materials and about the marketing of its products to the target public.

As for their role and content, the relationships between a unit (company) and the components of its micro-environment are called market relationships. These may be collaboration relationships established between an enterprise and its suppliers or clients. Organisations are also in competitive relationships with other enterprises within their micro-environment. The main objective of the market relationships of an organisation is to sell and purchase goods, to raise additional financial resources and to employ persons who are able to work.

These relationships of an organisation aim the following three market components:

- the product market – where organisations have a double status, of both buyer and seller,
- the stock market – where organisations have the status of applicants,
- the workforce market – where organisations appear as buyers, as applicant for work possibilities necessary to organise and carry out their activities.

The particularities of the market relationships of an organisation depend on the following conditions: general and specific, objective or subjective, internal or external. The market relationships of an organisation are not homogeneous. The type of market relationships may be determined by the object of market relationships, their level of concentration and their frequency (Olteanu, 2003).

According to the object of the relationships established by an organisation with elements of its micro-environment, there are two types of relationships: sales and purchase relationships and relationships for the transmission and reception of information.

Sales and purchase relationships may take the following forms: delivery of goods, consultancy, service provision, intermediation, leasing, loans. In the process of their establishment and operation, these relationships may take the following forms:

- a. Pre-contractual relationships
- b. Contractual relationships
- c. Post-contractual relationships.

Different specific instruments may be used for these forms.

- a. Pre-contractual relationships are carried out by means of the instruments listed below: negotiation, order, call for tender, firm offer.
- b. The main instruments of contractual relationships are contracts and a series of activities related to them, such as: invoicing, delivery, transport, reception, settlement.
- c. Post-contractual relationships are born during the warranty period and the main activities are: complaints, arbitration.

The relationships for the transmission and reception of information may, in turn, take particular forms. They may appear in the context of sales and purchase relationships with the aim of sustaining and implementing them or they may aim the creation of a favourable attitude for the organisation and its product. They may be: permanent, periodical, occasional.

For the classification of the relationships of organisations with their micro-environments, the following criteria may be used: the configuration of market agents, the nature of the market.

Competitive relationships are established between these and other market participants and they may have a different intensity according to the number and economic capacity of competitors, the consumer needs satisfied and the position of an organisation on the market.

Competition may take two different forms: direct competition (competitive relationships between organisations that addresses the same needs with similar products) and indirect competition (competitive relationships between organisations that address potential consumers who have different demands).

The conclusion is that we may not assert that there is no competition at the level of a certain market.

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CRYPTOCURRENCIES. TECHNICAL AND FUNCTIONAL ASPECTS

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***Abstract:** Nearly a decade after the appearance of cryptocurrencies, they have grown, both in number and in market, being a reality of our day, and in the last year the media has constantly written about them. Yet they continue to be a mystery. Normal, on the one hand, because not all of us are computer scientists, many are just computer users, but few are the ones who are good at cryptography. Unfortunately, so too few of the founders and users of cryptocurrencies are good at the economy. Maybe that's why they exaggerate when they call their crypto "coins" creations. These creations are not and probably will not be coin for a long time. Cryptocurrency there is something that few are good at, but many want it, because it brings them some wealth. Cryptocurrency and their evolution in the past year have enriched their founders and, being unregulated, we should count the days until we are impoverished. Cryptocurrencies have emerged and developed as a result of a sense of frustration among many who believe that people in the leadership of states and authorities live on their backs, banks steal them, states discriminate against them, judges and lawyers are not right. It is the world of the Internet, the world where people are free and have no bosses and no laws. Cryptocurrencies also mean many personal pride, but also the right to opinion and a social democracy. Or maybe anarchy. How could we justify more than 1500 such assets in less than 10 years.*

***Keywords:** bitcoin, litecoin, ripple, ethereum.*

***JEL Classification:** G12.*

1. Introduction

Bitcoin was launched in early 2009, the first cryptocurrency, which, for some, meant a real revolution in the system of payments, but also of speculative investments, and for others, another incomprehensible thing that added more and more technology to everyday life. At the same time, the authorities' responses to the new "currency" have gone from indifference, caution to investors and the unseen public, and recently to some bans, sporadic in relation to the dynamics of the phenomenon. I believe that bitcoin, and all that followed, can be seen from two different points of view: on the one hand, the bitcoin and the other so-called cryptocurrencies, another variety of assets offered to the market, and on the other hand the technology itself, the blockchain, which stands behind them.

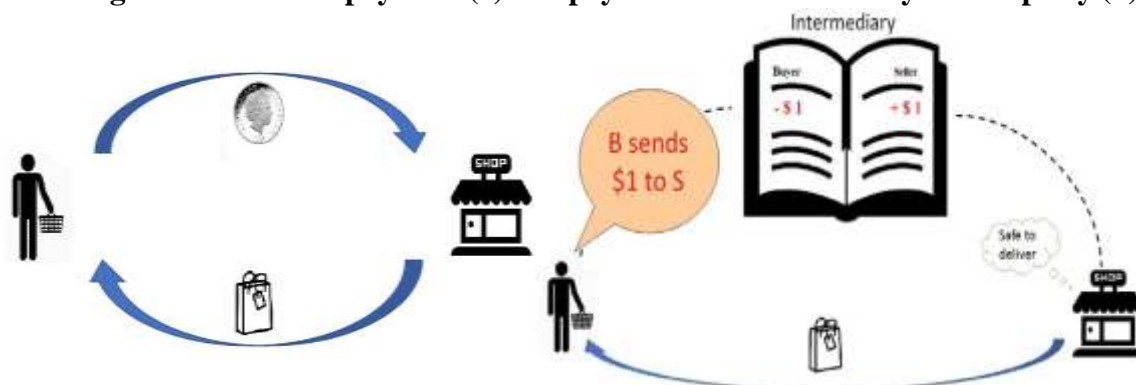
2. Blockchain technology

To understand blockchain technology, we compare the traditional payment system, and payments that involve the use of blockchain technology (Chiu and Koepl, 2017).

For more than a few thousand years, physical assets (e.g. shells, gold, coins, banknotes) have been used as a means of payment. In this context, a direct exchange of goods between the seller and the buyer is settled by counterparty's delivery of the money-giving asset (e.g. shells, gold, coins, banknotes) (Figure no. 1.a). This option is unavailable when the two parties are not present in the same location (for example, in the case of e-commerce), requiring the use of other assets (such as digital ones) to conclude the transaction. In a digital monetary system, the means of payment is simply a string of bits. The issue is preventing the buyer from reusing the same bit string again for a new transaction. This is called "the problem of double-spending". This problem can easily be solved when there is a trusted third party (for example, a traditional bank, or PayPal for electronic payments) that manages a centralized account and transfers balances by crediting the seller's account and debiting the buyer's account (Figure no. 1.b). For the system to work, it is necessary that the public trust banks or Paypal, and that these do not

cheat.

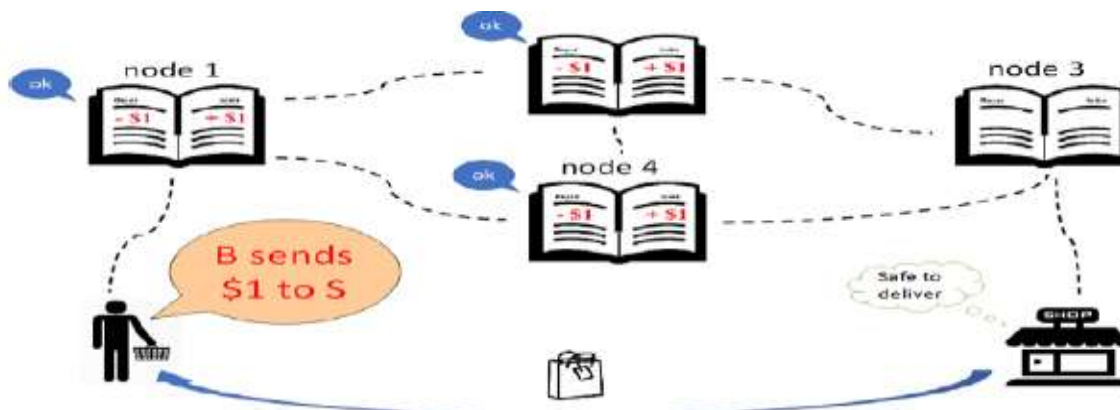
Figure no. 1. Direct payment (a) and payment intermediated by a third party (b)



Source: Chiu, J. and Koepl, T., 2017. *The Economics of Cryptocurrencies. Bitcoin and Beyond*. Bank of Canada, Victoria University of Wellington, Queen's University.

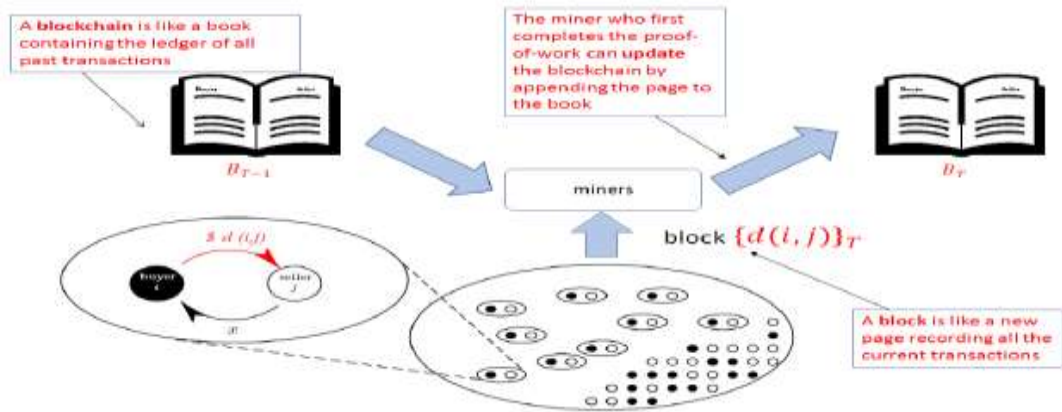
But if users do not trust the intermediary, the third party, because of its behavior, because of the fact that it favors some to the detriment of others, an abusive behavior due to the imposition of high costs etc.? A perfectly feasible solution is that the log, in which all transactions are recorded, of all participants, regardless of whether they are part of the transaction or not, is decentralized, held by all/to appear on the computers of all members of the network (Figure no. 2, where nodes are network participants/network computers).

Figure no. 2. Payment in which the log is kept by all members of the network



Source: Chiu, J. and Koepl, T., 2017. *The Economics of Cryptocurrencies. Bitcoin and Beyond*. Bank of Canada, Victoria University of Wellington, Queen's University.

Figure no. 3. Validation of Transactions/Mining Process

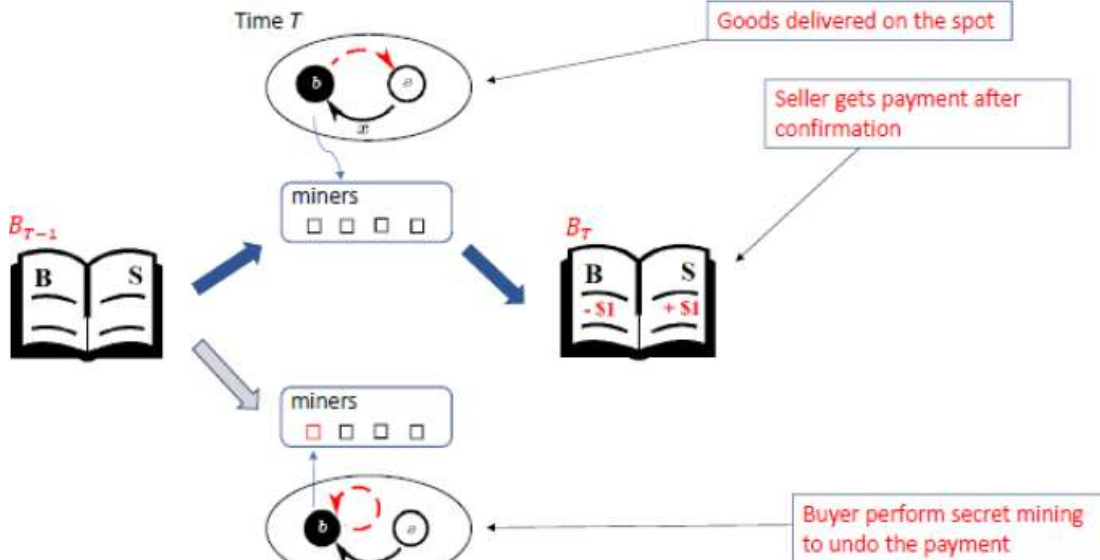


Source: Chiu, J. and Koepl, T., 2017. *The Economics of Cryptocurrencies. Bitcoin and Beyond*. Bank of Canada, Victoria University of Wellington, Queen's University.

So blockchain technology is a distributed network in which the third party, the trusted person, is absent. Validation of transactions, a process called mining, is performed by network members, miners (who are transaction validators) who compete to solve a costly computational problem (the term used is proof-of-work) and enter this transaction into a new block presenting the current account balances of participants in that network. The winning miner - the one who validates the transaction as soon as possible - receives a reward for their work, consisting of, on the one hand, the creation of new cryptocurrency issued by the network mined, and on the other hand, a transaction fee (Figure no. 3).

Blockchain is therefore a chain formed from all blocks that contain the history of previous transactions, and allow the formation of a public log whose records contain the user's balance.

Figure no. 4. Impossibility of validating transactions



Source: Chiu, J. and Koepl, T., 2017. *The Economics of Cryptocurrencies. Bitcoin and Beyond*. Bank of Canada, Victoria University of Wellington, Queen's University.

If a user wishes to cancel a past transaction (in fact, to use the same asset previously used for a new payment), this is impossible because: (a) the validation of transactions will not be done by him, but by the other miners, (b) would require rewriting a previous block,

over which other blocks have been placed (it is virtually impossible to enter the block archive, and even if it were, all subsequent blocks would also have to be rewritten, resulting in costly transaction fees that would make the process undesirable) (c) all rewards granted to miners for the validation of past transactions, and cryptocurrencies already produced, would have to be cancelled (Figure no. 4).

Blockchain, also called the "new internet", operates on a peer-to-peer basis. In IT terms, peer-to-peer means a direct connection between computers in the same network, transmitting information to each other without the need for a server computer to manage the exchange of information between them. Also, often the software behind the blockchain is open source, it can be downloaded and used for free, and can be further improved by users.

This makes blockchain technology suitable for recording events, medical records, managing people's identities, processing transactions, documenting the provenance of goods and services, tracking the food trade route, or even polling systems.

Currently, the term "blockchain 2.0" is used, which refers to the new applications of distributed (block) databases. "Blockchain 2.0" technologies outperform transactions, and allow value exchanges, without powerful intermediaries acting as "money and information referees". "Blockchain 2.0" technologies are expected to allow "excluded people to enter the global economy, to protect the privacy of participants," allow people to "generate money from their own information," and provide "the ability to ensure creators are rewarded for their intellectual property". It is also said that "blockchain 2.0" technologies make it possible to preserve a digital identity and provide a way to help solve the problem of social inequality through "the potential change in the way wealth is distributed" (Follow My Vote, 2017).

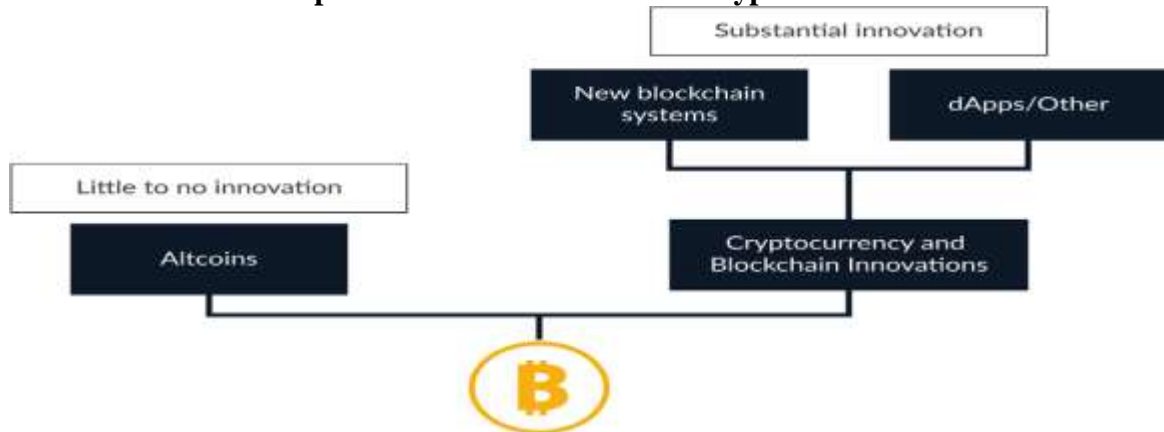
3. Cryptocurrencies

Cryptocurrencies are the result of a combination of achievements in various sciences, such as networking, peer-to-peer, cryptography (hash functions, digital signatures) and economics (game theory).

Cryptocurrency is a digital asset/token that exists in a specific cryptographic system and which generally consists of a P2P network, a consensus/trust mechanism, and a public and private key infrastructure. There is no central authority to govern the system. Instead, all network participants (also known as "nodes") apply the rules governing the system (for example, defining what constitutes a valid transaction, providing the asset/token and its issuance scheme, etc.).

The entire history of all transactions can be verified independently from each node, because everyone has a copy of the log, which is shared. This common log, which is generally based on a chain of transaction blocks ("blockchain"), is constantly updated through a process called "mining", which creates new blocks for new transactions, but new units of the native digital asset/token (i.e. cryptocurrencies) as well, which rewards the participants who validate the transactions. Everyone is free to join and leave the system at any time, and there are no nominal identities attached to the users, but cryptographic identities.

Graph no. 1. Differences between cryptocurrencies



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Bitcoin (BTC) began operating in January 2009, and was the first cryptocurrency. The second cryptocurrency was namecoin, appearing two years later, in April 2011. Today there are about a thousand cryptocurrencies, which are traded and grow their market value daily. Common to most cryptocurrencies is the public log ("blockchain"), which is shared between the network participants, and the digital native asset/token (i.e. cryptocurrency) as a way to stimulate participants to run the network without a central authority. However, there are significant differences between cryptocurrencies in the displayed innovation level (Graph no. 1).

Most cryptocurrencies are bitcoin clones or, in the case of others, the difference refers to parameter values (e.g., different block time, currency offer, and issuance scheme). All these cryptocurrencies, because they do not show too much innovation, are called "altcoins" (Hileman and Rauchs, 2017).

From a theoretical point of view, ground zero of the birth of Bitcoin was the publishing, at the end of 2008, of the work of Satoshi Nakamoto "Bitcoin: an electronic cashless peer-to-peer", but Bitcoin was born in January 2009.

The paper suggested creating a "peer-to-peer" or "P2P" network ("system") using a form of online cash ("electronic") that does not require a financial intermediary. The proposal envisaged a form of private currency, which would have been different from national currencies, but which would have similar characteristics and, moreover, would have brought with it the benefits of anonymity for payer and beneficiary and their private lives. Satoshi Nakamoto proposed that the new currency be based on cryptographic evidence instead of a trusted third party, such as a central bank or other institution, to verify transactions. Confidence and transaction validation would be achieved through a public report (blocks) that would track and record all transactions that all members of the system could read and confirm.

Economists and other specialists studying this new category of coins have proposed different denominations for them (Schuhy and Shyz, 2016):

- The European Central Bank, in 2012, proposed the term "**virtual currency**";
- The Bank for International Settlements, in a 2015 report, used the term "**digital money**", having found **similarities** with "**electronic**" currency;
- A more accurate term appears to be the **cryptographic coin** for this type of currency, based on the reality of the cryptographic security underlying it, but

- not all new virtual or digital coins are based on cryptography;
- The ECB's classification in 2012 was interesting, highlighting the unregulated nature of the new currencies, in relation to national currencies that are regulated, although many of the new currencies have internal rules regulating their creation;
 - Additionally, it should be kept in mind that **national currencies are public**, whereas **these new currencies are private**, being used only in their own networks;
 - Finally, consider the **sovereignty of national currencies**, and the **consensual, social, private, decentralized, democratic character of the new currencies**.

Since every coin should have at least three utilities: a means of exchange, a standard value, and a treasury function, my opinion is that the “currency” should not be used to refer to these new creations. Their exchange is rare, too few people and too few transactions are being made with these new currencies for them to be considered a means of exchange (even those who declare that they accept them in payment, use them sporadically, and those who own them use them for speculation rather than exchange). Nor can it be said that the new currencies are of standard value, given that prices are expressed in national currencies, and then converted into the new currencies (nor would it be a reliable solution to the volatility observed by “pseudo-currencies” lately). Perhaps the treasury function is better represented, but let us not forget that we are talking about minorities. Based on this last point, I believe that the term virtual or cryptoactive asset would better describe them, especially given that in many countries the supervisors focused on them have been the ones regulating the securities markets.

4. Creation of cryptocurrencies

A person can become the owner of cryptocurrency either by participating in their creation, a process that is called mining, or following a transaction/investment process.

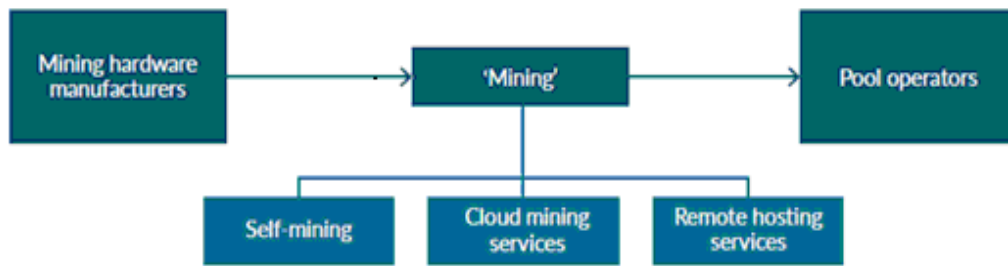
Mining is the process through which new cryptocurrency is created, though it should be noted that not all cryptocurrencies are minable. In fact, mining is the process of validating new transactions, i.e. transferring encrypted data from one person to another by creating new blocks containing new transactions, and finally adding that new block to the blockchain (the public log where all transactions with that cryptocurrency are saved). When the miner's computer validates a new block, that computer and therefore its owner will receive a quantity of encryption. For example, in the case of bitcoin, the validation of a new block will provide the miner with 12.5 BTC, after it was halved in 2016 (until then the operation yielded 25 BTC; this remuneration, in the case of bitcoin, but not only, was reduced over time, with a decrease of 0.5 approximately every four years).

The issue of mining (Bitcoin, 2017) is a computer and cryptographic issue. During mining, the computer performs a cryptographic function called hash (for example, for bitcoin, two rounds of an encryption algorithm called SHA256 are executed), on what is called a block header. For each new hash, the mining software will use a different number as the block header's random number, and this number is called nonce. Depending on nonce and what information remains in the block, the cryptographic function will produce a hash (a code, a cipher), which is a string of digits and letters that look like this:

821de96a53a9a93ef6f358fbb998c60802496863052290d4c63735b7fe5bdaac

It is a hexadecimal number, i.e. letters A-F are numbers 10-15. To make mining difficult, there is something called the difficulty target. To create a valid block, the miner must find a code that is below the difficulty target. So if, for example, the target of difficulty is:

Graph no. 2. Types of mining



Source: Garrick Hileman, Michel Rauchs, Global Cryptocurrency Benchmarking Study, University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance, 2017.

In the second case, of a transaction, a person may come to possess cryptocurrency either by accepting it as a means of payment in selling a good or service, or by investing/speculating the price variations of cryptocurrency (in fact, by buying it), though the various websites that promote cryptocurrencies also indicate other ways (performing various tasks for sites that accept or promote, lend, receive salary in cryptocurrencies etc.).

Regardless of its source – be it mining or transactions/investments - it is necessary for the owner to have a wallet in which to store them. So, acquiring a wallet precedes cryptocurrency ownership.

Cryptocurrency wallets contain not the coin units, but private keys required to access the address where these are found, and to sign transactions when cryptocurrency is spent. Cryptocurrency wallets are available in the following forms:

- Desktop wallets (in fact, software installed on the computer; some secured, some even anonymous);
- Mobile wallets (a smartphone app). A difference between desktop and mobile wallets is that, while the former can contain the entire blockchain, the latter contain only a small part of the blockchain, relying instead on other nodes in the cryptocurrency's network;
- Web wallets store online private keys on a server connected to the internet and controlled by someone else, the advantage being that they can be accessed anywhere, but are also at risk;
- Hardware wallets are specially designed to keep electronic keys and facilitate payments;
- Off-line wallets (software not connected to the Internet);
- Paper wallets (enable the transformation of private keys into QR codes, that can be printed and stored outside of a computer).

5. Public and private keys

Cryptocurrency transactions and ownership rely on two elements: the public key/address and the private key/address, sometimes called the key pair. These two keys are actually two strings of characters, the public key being generated by the private key. When someone makes a cryptocurrency transaction, they will generate the key pair; the public key is the one that will appear in the blockchain (Figure no. 5), viewable by any member of the network, and the private key, generated at the same time as the public one, intended for the recipient of the cryptocurrency to be able to access/use cryptocurrency. Anyone can send cryptocurrency to the public key/address, but that amount can only be accessed by the owner of the private key, generated at the time of the cryptocurrency's handover. Disclosure of the private key is synonymous with the loss of one's cryptocurrency.

Cryptographers propose that private key generation be made using either a random character set that cannot be guessed, or an easy to memorize authentication phrase.

In fact, when someone, a payer, sends cryptocurrency to its beneficiary, the payer will use the private key to sign a payment message, which contains the payer information, the payment amount (in bitcoin, the source of transactions whose value is used for payment) , and the address of the beneficiary. The payment message will leave the payee's cryptocurrency wallet to the network that manages the cryptocurrency. From there, network miners check the transaction by placing it in a transaction block and, eventually, validating/decrypting it to place it in the blockchain. The recipient will have to wait until the miners decrypt (validate) the transaction. For example, in case of bitcoin, each block takes 10 minutes to mine. So if the payment is the extinction of a purchase of goods or services, the payee seller lets you wait until the block in which the transaction was placed is validated by the miners.

But it's possible that some vendors - cryptocurrency recipients do not wait for the transaction's validation, trusting that you will not attempt to spend the same cryptocurrency elsewhere before the transaction is confirmed (in the case of low-value payments).

It is noteworthy that the difference between some cryptocurrencies lies in their bookkeeping. In bitcoins, everyone's balance is unknown. Owned bitcoins are transaction parts, not balances, as in other cryptocurrencies. So, when making a bitcoin payment, the transactions from which the payment amount is due must be chosen, and the value of these transactions cannot be shared. This means that enough transactions will be made to cover the amount of the payment. If the previous transaction, from which the payment amount is due, is higher than the latter, the payer will make two payments, the normal one to the beneficiary, and the remainder to himself.

Figure no. 5. Blockchain and public keys

Date	Description	Amount	Balance
2012-02-14 16:11	lol	-0.101	173.3849276
2012-02-13 17:22	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.11	173.4859276
2012-02-10 13:39	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.1	173.5959276
2012-02-10 11:54	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.1	173.6959276
2012-02-10 11:41	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.1	173.7959276
2012-02-10 11:10	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.1	173.8959276
2012-02-08 16:30	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.101	173.9959276
2012-02-07 17:49	to: 16825vLBRJK3fLcjoxXajJsRV8P1bPK8MJ	-0.101	174.0969276
2012-02-03 17:52	at: 18dhDHYhuVJrMSZ9VDmdWxY4zeS1BHM6ew	+53.1	174.1979276
2012-02-03 17:35	to: 15kfzDMX2Gr7hXrwRQQGkxrd5eBveKH777	-50.001	121.0979276
2012-01-30 09:41	to: 12XS5gQ9Z4xFLByWRkwqk9BqhRNidCSPG	-1.4270994	171.0989276
2012-01-20 17:11	to: 1RiDe2GJTzQgdWHliDgtSpKb41cTPkXPR	-5.441	172.526027
2012-01-15 12:04	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.101	177.967027
2012-01-12 13:53	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.101	178.068027
2012-01-11 18:54	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.101	178.169027
2012-01-11 18:50	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.101	178.270027
2012-01-11 18:38	to: 19mP9FKrXqL46Si58pHdhGKow88SUPy1V8	-0.101	178.371027

Balance: 173.3849276

Source: Bitcoin, 2017. *Home*. [online] Available at: < <https://bitcoinx.ro/>> [Accessed 18 December 2017].

Any part of a transaction that is not taken over by the recipient or returned as change is considered a commission. It goes to the miner who was able to validate/decrypt the

transaction block as an extra reward, in addition to the cryptocurrency creation. Miners opt for high-value transactions, because rewards are high.

6. Other cryptocurrencies

So far, the example used has been the bitcoin. However, the cryptocurrency market currently has nearly 1,000 such currencies. Considering the volume of cryptocurrency transactions in 2017, bitcoin, ethereum, ripple and liteco come out on top, treated as different cryptocurrencies and excluding bifurcations.

Litcoin (LTC) is a bitcoin fork, created in 2011 (three years after bitcoin), that has double the value of bitcoin (25LTC / block), but which, like bitcoin, is halved every four years, the time per block is 2.5 minutes (one quarter of bitcoin's), a maximum of litecoins four times the number of bitcoins (84 million units), and a different encryption system.

Ripple (XRP). The Ripple company, which founded this cryptocurrency, originally a real-time remittances and exchange system, decided in 2012 to also issue an account unit like cryptocurrencies which, besides financial transactions, also sought to introduce tokens. It should be noted that the system is decentralized and can operate without the parent company, and among its validators is the Massachusetts Institute of Technology. The Ripple network allows transactions in both conventional currencies (which is why it is accepted by a number of financial institutions, which have themselves integrated the network into their own internal systems) and in its unit of account, ripple. The system is slightly different from networks that emit bitcoin or other cryptocurrencies, because the two-party transactions are based on trust. Users must specify which other users they trust and with what quantity. Thus, when a non-XRP payment is made between two users who have mutual trust, the credit line balance is adjusted within the limits set by each user. To send money between users who have not established a trust relationship directly, the system tries to find a path between the two users through others in the system so that each link is between two users who have a trust relationship. The resulting balances along the path between the two users without a relationship are then simultaneously adjusted to "atomic". This payment mechanism through a trustworthy network of participants is called "rippling". The network accepts currency deposits from users, records the balances from the transfers in the Ripple distributed registry, and redeems account balances when withdrawing deposits. Users need to place trust in the Ripple network. This creation of trust-based lines indicates to the Ripple that the user is "trustworthy". In addition, the user must also set a quantitative limit on this confidence level and create a similar limit for each coin they put on the network.

Ripple is based on a shared registry, which is a distributed database that stores information on all Ripple accounts. It is managed by a network of independent validation servers that regularly compare transaction logs. Servers can belong to anyone, including banks. A new registry is created every few seconds, and the last closed registry is a perfect record of all Ripple accounts as determined by the server network. A transaction can be any modification proposed in the registry, and can be entered by any server in the network. The servers are trying to reach a consensus on the transactions to be included in the registry, creating a new "last closed registry". The consensus process that validates the new registry is distributed; the goal of the consensus is for each server to include the same set of transactions in the current registry. Servers are constantly receiving transactions on the network, and their validation is agreed upon by a "super-majority" of network participants. If "super-majority" is not in consensus, "this means that the volume of transactions was too high or the latency of the network too high for the consensus process to produce consistent proposals," and the nodes retry the consensus process. Each round of consensus reduces disagreement until "super-majority" is achieved. The intentional result of this process is

that the disputed transactions are removed from the proposals, while widely accepted transactions are included in the registries/blocks.

The Ripple cryptocurrency cannot be mined, and at its genesis, 100 billion XRPs were created. Of these, 20 billion were retained by the creators (the founders of Ripple Labs), about 80% of the total were intended to stimulate market creation activity, to increase Ripple liquidity and to strengthen the overall health of Ripple markets, while a sum of 0.2% of the total Ripple was awarded to charitable organizations. The system introduces up to 1 billion Ripple to the market on a monthly basis for various projects. Another feature is that, in order to engage in transactions, each Ripple account must have a small margin of 20 XRP, and pays a trading fee, which increases if the user performs numerous transactions.

Table no. 1. Comparison between major cryptocurrencies

Cryptocurrency	Bitcoins	Litecoin	Ripples	Ether/ Ethereum
Type	Blockchain, Cryptocurrency	Blockchain, Cryptocurrency	Real-time gross settlement, currency exchange, remittance	Decentralized computing, Blockchain, Cryptocurrency
Symbol	BTC, XBT	LTC	XRP	ETH
Subunits				
$\frac{1}{1000}$	millibitcoin	lites		
$\frac{1}{1000000}$	bit	photons		Gwei (10 ⁻⁹)
$\frac{1}{100000000}$	satoshi	litoshis		Wei (10 ⁻¹⁸)
Original creator	Satoshi Nakamoto	Charlie Lee	Arthur Britto, David Schwartz, Ryan Fugger	Vitalik Buterin, Mihai Alisie, Anthony Di Iorio, and Charles Hoskinson
Launch date	9 January 2009	7 October 2011	2012	30 July 2015
Remuneration graph	Proof-of-work	Proof-of-work		Proof-of-work
Encryption function	SHA-256	scrypt		Keccak
Programming language		C++	C++	Go, C++, Rust
Operating system		Windows, OS X, Linux, Android	GNU/Linux (RHEL, CentOS, Ubuntu), Windows, OS X	Linux, Windows, macOS, POSIX, Raspbian
Remuneration per block	12,5 BTC	25 LTC		3 ETH
Creation time per block	10 minut	2,5 minut		14-15 seconde
Units in circulation	16.858.762	55.558.418	39.009.215.838	97.762.514
Unit creation limit	21.000.000	84.000.000	100.000.000.000	

Ethereum is a distributed open-source, public, block-based platform that also emits an Ethereum/Ether cryptocurrency. Ether, like bitcoin, is mined and can be transferred between accounts and used to reward the participating mining nodes to validate transactions. Ethereum was proposed at the end of 2013 and was launched on July 30, 2015, with 11.9 million pre-emptive currencies. In 2016, due to the collapse of the DAO project (the disappearance of \$50 million, contributions to a smart contract), Ethereum was divided into two separate blocks - the new separate version became Ethereum (ETH), and the original continued as Ethereum Classic.

Ethereum/Ether is different from Bitcoin in several aspects:

- it operates using accounts and balances in a way called "state" transactions. The State is the current balance of all accounts and is not stored on the block, but on a separate tree called "Merkle Patricia Tree". Ether accounts are pseudonyms because they are not linked to individuals but rather to one or more specific addresses;
- block time is 14-15 seconds, compared to bitcoins' 10 minutes;
- mining Ether generates new cryptocurrency at a usually consistent rate (3 ETH/block), whereas bitcoin production rate is halved every 4 years;
- transaction fees vary according to complexity, which is calculated according to used bandwidth and storage needs (in a system known as GAS), while for

bitcoin transactions, tax is competitive and determined by transaction size measured in bytes;

- Ethereum GAS units each have a price that can be specified in a transaction, and are usually measured in Gwei (an Ethereum subdivision equal to 10^9), while Bitcoin's operations are taxed in Satoshis per byte;
- transaction fees are generally considerably lower for ether than bitcoin. For example, in December 2017, the transaction fee for ether was \$0.33, while bitcoin ranged from \$1 to \$55;
- Ethereum uses an account system where transactions in Wei (another Ethereum subdivision equal to 10^{18}) are debited in some accounts and credited to others, unlike the BitTorrent UTXO system, which records the transactions, the amounts spent and the amounts received, respectively (money transfer and reception of a benefit or good in exchange).

The cryptocurrencies market currently has about 1,000 such coins, and the most important one, depending on the US dollar capitalization, is shown in Table no. 2.

Table no. 2. Top 50 cryptocurrencies following March 7, 2018 market cap

	Name	Symbol	Cap (mil. USD)	Price (USD)		Name	Symbol	Cap (mil. USD)	Price (USD)
1	Bitcoin	BTC	166.644	9.857,2	26	BitShares	BTS	458	0,2
2	Ethereum	ETH	72.715	741,7	27	Decred	DCR	429	62,2
3	Ripple	XRP	33.657	0,9	28	Komodo	KMD	353	3,4
4	Bitcoin Cash	BCH	18.384	1.081,1	29	Electroneum	ETN	349	0,1
5	Litecoin	LTC	10.078	181,5	30	Ardor	ARDR	343	0,3
6	Cardano	ADA	6.380	0,2	31	Ark	ARK	335	3,3
7	NEO	NEO	6.269	96,5	32	Syscoin	SYS	304	0,6
8	Stellar	XLM	5.795	0,3	33	Cryptonex	CNX	301	6,7
9	Monero	XMR	5.187	328,3	34	Hshare	HSR	283	6,6
10	Dash	DASH	4.049	510,4	35	PIVX	PIVX	276	5,0
11	IOTA	MIOTA	4.041	1,5	36	DigiByte	DGB	271	0,0
12	NEM	XEM	2.633	0,3	37	MonaCoin	MONA	257	4,4
13	Ethereum Classic	ETC	2.160	21,5	38	Byteball	GBYTE	237	366,6
14	Qtum	QTUM	1.597	21,6	39	Factom	FCT	236	27,0
15	Lisk	LSK	1.552	15,1	40	Particl	PART	228	25,7
16	Bitcoin Gold	BTG	1.533	90,9	41	ReddCoin	RDD	198	0,0
17	Nano	NANO	1.527	11,5	42	GXShares	GXS	195	3,3
18	Zcash	ZEC	1.174	342,3	43	ZCoin	XZC	185	43,3
19	Steem	STEEM	685	2,7	44	Nexus	NXS	183	3,3
20	Bytecoin	BCN	647	0,0	45	Blocknet	BLOCK	176	34,9
21	Stratis	STRAT	617	6,2	46	Nxt	NXT	174	0,2
22	Verge	XVG	610	0,0	47	Neblio	NEBL	163	12,7
23	Waves	WAVES	584	5,8	48	Emercoin	EMC	154	3,7
24	Siacoin	SC	496	0,0	49	SmartCash	SMART	132	0,2
25	Dogecoin	DOGE	470	0,0	50	Vertcoin	VTC	130	3,0

Source: CoinMarketCap, 2017. *Home*. [online] Available at: <<https://coinmarketcap.com>> [Accessed 18 December 2017].

Table no. 2 shows the market situation on March 7, 2017. Note that although we only list 50 of the approximately 1,000 cryptocurrencies, the fiftieth currency has a capitalization of \$130 million. But the market is a diverse one; investors can find almost anything on the market. Any idea can find its equal on the cryptocurrency market. Here's a demonstration in Table no. 3.

An important problem is the bifurcation frequency of the original cryptocurrencies, due not only to attempts to improve technical problems in use or disunity in the distribution mode

(the original creators possessing important encrypted portfolios, while the last entrants need to be content with crumbs, or paying high prices for placements), but also the personal pride of miners or users, who are trying to find new free winning tracks. For example, in the case of bitcoin, there were 17 coins with the name of bitcoin, excluding the 15 listed in 2017, but only three seemed to be more important. For litcoin, we count 8 varieties, none of which are important. In Ethereum, the bifurcations were lower, with only three varieties, and Ripple did not record any bifurcation, probably because of the different system.

Table no. 3. Cryptocurrency – curiosity on March 7, 2017

Position	Name	Symbol	Market Cap (mil. USD)	Price (USD)
173	PinkCoin	PINK	9,66	0,025295
194	EuropeCoin	ERC	6,71	0,66967
215	CannabisCoin	CANN	4,88	0,063164
316	PetroDollar	XPD	1,33	0,020821
333	Deutsche eMark	DEM	1,03	0,029113
352	Happycoin	HPC	0,72	0,052164
356	TrumpCoin	TRUMP	0,70	0,105857
386	MACRON	MCRN	0,45	0,00112
389	Phantomx	PNX	0,42	0,027344
405	Philosopher Stones	PHS	0,32	0,053671
408	Mao Zedong	MAO	0,30	0,047903
431	Honey	HONEY	0,20	0,444662
433	Eurocoin	EUC	0,19	0,015282
435	Theresa May Coin	MAY	0,18	0,005277
478	HarmonyCoin	HMC	0,00	0,006701
636	Marijuanacoin	MAR	0,11	0,065598
710	PizzaCoin	PIZZA	0,00	0,002053
762	LePen	LEPEN	nn	0,000391
834	KlondikeCoin	KDC	nn	0,018575
840	CoffeeCoin	CFC	nn	0,002542
842	Happy Creator Coin	HCC	nn	0,000098
844	Halloween Coin	HALLO	nn	0,000293
866	GAY Money	GAY	nn	0,029035
888	SportsCoin	SPORT	nn	0,001466

Source: CoinMarketCap, 2017. *Home*. [online] Available at: <<https://coinmarketcap.com>> [Accessed 18 December 2017].

Table no. 4. Bitcoin, litcoin and ethereum bifurcations before 2017

Position	Name	Market cap (mil. \$)	Price (\$)	Position	Name	Market cap (mil. \$)	Price (\$)
1	Bitcoin	166.643,7	9.857,19	2	Ethereum	72.714,8	741,66
4	Bitcoin Cash	18.384,4	1.081,12	13	Ethereum Classic	2.159,7	21,52
16	Bitcoin Gold	1.533,4	90,91	414	Ethereum Dark	0,3	0,19
53	BitcoinDark	118,1	91,63				
183	BitcoinZ	8,2	0,01				
195	Bitcoin Plus	6,7	63,01				
332	Bitcoin Script	1,0	0,06	5	Litecoin	10.078,5	181,51
412	Bitcoin Fast	0,3	0,03	270	LiteDoge	2,7	0,00
529	BTCtalkcoin	0,6	0,01	370	Litecoin Plus	0,5	0,46
593	Bitcoin 21	0,2	0,24	432	LiteBitcoin	0,2	0,01
600	Bitcoin Planet	0,2	0,03	458	LiteCoin Ultra	0,1	0,07
629	AntiBitcoin	0,1	0,01	645	Litecred	0,1	0,00
716	Bitcoin Diamond	?	4,70	700	Antilitecoin	0,0	0,00
722	BitcoinX	?	0,01	732	Litecoin Cash	?	0,48
729	Super Bitcoin	?	15,13				
777	Bitcoin God	?	30,45				
782	Bitcoin Atom	?	13,89				

Source: CoinMarketCap, 2017. *Home*. [online] Available at: <<https://coinmarketcap.com>> [Accessed 18 December 2017].

7. Initial coin offerings

Now, in the years of cryptocurrencies, even start-ups are revising their funding techniques. Thus, some start-ups no longer resort to venture capital, crowdfunding, business angels, and instead access blockchain technology and so-called smart contracts.

Initial coin offerings (ICO) and initial token offerings (ITO), named after initial public offering (IPO), are one of the methods through which start-ups found financing using the blockchain and cryptocurrencies.

If, through an IPO, a company issues, in a legal and regulated manner, securities to investors via ICO or ITO, a start-up issues to investors, using blockchain technology, virtual assets (called digital tokens) or the start-up's proprietary cryptocurrency and receives cryptocurrency from investors, especially ether or, more rarely, bitcoin. It should be noted that in an ICO, new virtual assets (digital tokens) are premeditated (their number is known from the beginning) and usually have a pre-launch price, theoretically lower (to attract investors) in relation to how much they are estimated to be worth later. Another difference is that, to ensure a certain level of security for investors, money amounts resulting from ICO do not go directly into start-up accounts, but are kept in some sort of escrow accounts, open to a third party (usually the ICO platform, such as Ethereum), which will give it to the issuer after a predetermined protocol (although there are some loopholes to justify the withdrawal of money, in spite of protocol interdictions).

These protocols (called smart contracts) are computer programs that can automatically execute the terms of a contract. That is, the software executes the elements of the contract if certain conditions are met or they are not executed if the conditions are not present. Intelligent contracts are implemented in the blockchain, and their promoters consider eliminating impartial lawyers and judges from between the contracting parties.

Investors are informed about ICOs through online channels (forums and sites dedicated to cryptocurrencies), which also mention the purpose of collecting funds: developing information technology products or services through use, in many cases, of the blockchain.

Virtual assets (so-called digital tokens) or start-ups' proprietary cryptocurrency issued within an ICO may be used: (a) either as voting rights and/or as rights to a portion of future start-up incomes (b) either accessing or purchasing the product/service that the issuing start-up will develop, (c) either they may be exchanged for national or virtual currencies (Ștețiu, 2017).

The launch of an ICO requires the start-up to publish a brief, unregulated, and unapproved prospectus, called "white paper", which describes the start-up's objective, the purpose for which the assets (digital tokens) are produced, some details about the business and its market, how the ICO funds will be used, etc.

Being uncontrolled, these white papers do not provide too much security to investors. It is mentioned that investors take risks such as: abandoning the project, the platform on which the ICO will be launched refusing to issue the token and, last but not least, the token issuer to lie about the stage at which the project finds itself (Iacob, 2018).

Although not generally regulated, the ICO explosion of 2017 has made regulators pay closer attention to this market. Thus, in the United States, the US Securities and Exchange Commission (SEC) began to regard them as securities and to request their issue through the required prospectus for the other securities, and this approach will likely be reproduced by similar authorities in financially developed countries. It should be noted that in September 2017, China banned ICO.

8. Conclusion

Nearly a decade after the appearance of cryptocurrencies, they have grown in both number and market, becoming a reality of everyday life, and in the last year, the media has constantly written about them. Yet they continue to be a mystery. Understandable, on the one hand, as not all of us are computer scientists, but simply computer users, with only a few who are good at cryptography. Unfortunately, just as few of the founders and users of cryptocurrencies are economists. Perhaps that is why they exaggerate when they call their creations "currency". These creations are not and probably never will be currencies for a long time. Cryptocurrencies are something that few are good at, but many want, because it brings them some wealth. Cryptocurrencies and their evolution over the past year have enriched their founders and, being unregulated, will impoverish the many before long. Cryptocurrencies have emerged and developed as a result of the frustration experienced by many who believe that the heads of states and authorities exploit them: banks rob them, states discriminate against them, judges and lawyers are not fair. It is the world of the Internet, a world where people are free without bosses or laws. Cryptocurrencies also mean many personal egos, but also the right to opinion and a social democracy. Or maybe anarchy. How could we justify over 1500 such assets in less than 10 years.

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SUGGESTING SOME INDICATORS FOR A BETTER MEASUREMENT OF PUBLIC DEBT SUSTAINABILITY

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Abstract: Ensuring the sustainability of public debt is an extremely important element in the context of instability and the conjectural or structural vulnerability of the economies of the world and of our country. The article proposes a theoretical and applicative analysis on the improvement of public debt sustainability analysis tools, through a series of indicators, for countries with unrestricted access to international capital markets, starting from the framework developed by the International Monetary Fund. These indicators aim at completing the image of the public debt sustainability analysis based on the International Monetary Fund model and implicitly the International Monetary Fund indicators. Without claiming to provide a perfect picture, the proposed indicators are meant to improve the content and usefulness of the public debt sustainability analysis of countries with unrestricted access to international capital markets (including Romania) as a desirable complement to the International Monetary Fund methodology.

Key words: public debt, sustainability, indicators, Romania.

JEL Classification: H63, O23, E63.

1. Introduction

According to the International Monetary Fund (IMF) analysis of the debt sustainability framework reformulated in 2011, when debt service issues arise (eg. maturity issues, volatility of the interest rate or the denomination of debt), it is realizing an analysis of the impact of these issues (eg. through stress tests and forecasts of government financing needs, baseline scenarios, alternative scenarios, etc.) and attempts to stabilize public debt. However, the analysis of public debt sustainability is a delicate issue that involves, in addition to analyzing indicators of public debt (example, a strong standardized analysis) also qualitative aspects regarding: the economic, political and institutional characteristics of the country under review, the economic and regional policy context, fiscal or monetary policy to be adopted by the government or the monetary authority etc. The article aims to treat the sustainability of public debt only in countries, according to IMF criteria, identified as "market-access" (MACs), more exactly, with unrestricted access to international capital markets, as opposed to countries that mainly receive external financing, from concession sources (low income countries - LICs).

According to the IMF, the debt sustainability analysis is looking at the analysis of a country's ability to finance its macroeconomic policy objectives under the condition that public debt management is carried out without major adjustments.

By deepening the issue of public debt sustainability, the article aims to contribute to improving the coordination of macroeconomic policies (especially fiscal-budgetary policy) and to the best possible respect for the short, medium and long-term commitments assumed by MACs (including Romania) on public debt financing. Thus, the article attempts to make a series of proposals and suggestions for widening the area of tools for analyzing the sustainability of public debt.

According to the IMF framework, debt sustainability analysis in MAC and LIC countries combines a series of solvency and sustainability indicators. It also takes into account the trajectory, debt level and financing needs according to scenarios (standardized but also individualized according to the characteristics of the analyzed economy). For MACs, the IMF debt sentiment analysis takes into account both the realism of the formulated hypotheses and the market perception of the state as well as the risks arising from the debt profile. But the framework also takes into account the specific features of a

country and the debt-specific elements, the history of the evolution of public debt, as well as the changes in the economic and financial environment of the country, the region and the world as a whole. It should be noted that, according to the IMF, for the MAC countries, public debt covers only the public debt without the guaranteed public debt. At the same time, it is worth mentioning that in the context of increasingly advanced globalization, which "exports" and mixes realities, but also the acute need for modernization, it can be considered that the IMF should flatter as much as possible the differentiated assessments between the MAC countries and the LIC, but also between advanced and emerging economies, using rather common indicators and thresholds.

According to the framework formulated, the IMF aims: to assess the current public debt position, maturity, structure and possible indexing of the debt, to pursue the status of exchange rate regime (floating or fixed), to identify vulnerabilities related to the public debt structure and prevent possible payment difficulties, and if payment difficulties appear, to make alternative scenarios of debt stabilization. Therefore, the analysis starts with a baseline scenario and with macroeconomic variables and projections that incorporate government policy targets, with clearly established assumptions and factors, including alternative scenarios, then to apply some sensitivity tests to the baseline scenario, providing a higher margin for debt dynamics. In the case of alternative scenarios, there are taking into consideration either the assumption of a steady primary balance or historical developments, or the hypothesis of shocks on contingent liabilities. Also, in the case of stress tests, it is being analyzed the evolution of the gross nominal government debt to the shock of increasing: real economic growth or the real exchange rate or the real interest rate or all of these elements combined.

The directions of government debt ratios, both under the baseline scenario and the stress tests, can provide valuable insights on a country's vulnerabilities to a possible payment crisis.

However, in addition to liquidity risks and debt roll-over risks reflected by debt ratios such as the gross financing needs-to-GDP ratios and indicators that reflect the vulnerability of the debt profile, other indicators could be considered necessary in order to facilitate some conclusions drawing and ease decision-making process. For example, it could prove useful the indicators that may relate to the evolution of the public budget balance (which is relatively limited in IMF analysis), such as indebtedness, financial stability, financial autonomy, global solvency, patrimonial solvency, etc. These indicators could complete or at least can contribute to the image of public debt sustainability.

2. Literature review

The most important part of the profile literature deals with the effects of the leverage on economic growth, for example Krugman (1988) states that a high indebtedness reduces the supply of new credits to the economy and acts as a marginal tax on investment, creating fear that (public) debt growth will be reflected in higher corporate taxes. Also, the state, in order to diminish the debt service, will significantly reduce its government investment. Also, regarding the impact of debt on the economy, according to Borio and Disyatat (2011) and Rey (2015), the capital flows from which the debt is constituted are more likely to generate spectacular credit growth than other types of flows.

If we think in reverse, on the implications of economic growth and other macroeconomic variables on debt, most studies deals with determinants of debt crises depending on income, being analyzed mainly samples of middle-income countries (MIC), composite samples made of medium and low income countries (MIC and LIC), and very few studies focus only on low income countries (LIC), as in Kraay and Nehru (2006). Equally, the literature shows that the probability of a debt crisis is positively associated

with high levels of total debt, with a higher share of borrowing on short term and is negatively correlated with the rate of GDP growth (especially in countries low income LIC, example in the studies of Pattillo, Poirson and Ricci, 2002) and with the level of international reserves. From the perspective of structural variables, the default of debt is related to persistent fluctuations in production, income inequality, a discouraging business climate, a limited trade opening, weak institutions, unclear regulations and history on the unpaid debt. According to Easterly (2001), the collapse of economic growth plays an important role in triggering the debt crisis in LIC countries.

In order to develop an optimal debt policy, the composition of debt is extremely important. According to Drazen (1998), the manner in which debt is expressed (the composition of debt) can be an important element of debt stimulation / blocking, for example whether internal or external indebtedness can have serious implications for probability of default. Also, according to De Groot, Holm-Hadulla and Leiner-Killinger (2015), when government spending is higher than the government's expectations, the payment of interest on the debt should be structured to such an extent that it is kept at a lower level. In addition, the higher interest rate on external borrowing, especially for emerging economies, may be a serious source of financial stress (Eichengreen and Hausmann, 2002). Therefore, reducing debt service costs can be seen as an important factor in minimizing vulnerabilities and financial risks (Debrun and Kinda, 2016).

In many studies (such as Allen et al., 2002 and Abbas et al., 2014), the sovereign debt structure is interpreted in a holistic manner in which maturity and currency composition of debt are important elements (early warning indicators) to prevent the occurrence of crisis.

Thus, the currency in which the external public debt is expressed can have a considerable impact on the economy that is borrowing. The US dollar plays a predominant role in financing world economies. Thus, according to Bruno and Shin (2015), a depreciation / appreciation of the US dollar against a national currency may lead to ease / tightening financial conditions in the borrowed country. At the same time, in order to improve the structure of indebtedness instruments and macroeconomic shocks, Pienkowski (2017) notes that in low-income countries a beneficial factor may be the issuance of local currency debt (to save the economy from a series of direct potential effects of the of high exchange rate volatility), while in advanced economies the debt limit can be increased by bond issuance that allows an indexing according to GDP developments, implicitly stabilizing the debt-to-GDP ratio. In this respect, for a better debt management, a number of authors (e.g. Barro, 1995, Chamon and Mauro, 2005 and Benford et al., 2016) recognize the benefits of linking bonds with GDP developments, especially for advanced economies, in which public debt is high, interest rates are extremely low, and prospects for more dynamic economic growth are low. However, as Pienkowski (2017) points out, countries within a monetary union can control to a lesser extent the nominal GDP developments, due to the single monetary policy and to the limited fiscal framework, which makes it less attractive to link bonds of GDP developments for better sovereign debt management.

Equally, the external public debt maturity can have a considerable impact on the economy in the sense that lower maturity favours lenders and less borrowers (the inability of rolling the credit), while longer maturities are more beneficial to borrowers (Gruić, Hattori and Wooldridge, 2014), and the latter can mitigate the impact of external shocks, but can also create the possibility of accumulation of imbalances over time (Blanchard and Missale, 1994).

Regarding the analysis of the sustainability of public debt, Cottarelli, C. and Moghadam, R. (2011) emphasize the need to update the fiscal policy analysis framework and public debt sustainability in the context of recent crises, highlighting those areas that

require methodological improvements, proposing a basic analysis, especially for discerning the risks.

According to the World Bank, the debt sustainability analysis is a tool used by the World Bank and the IMF to assist countries (especially low income countries - LICs) and focuses in particular on vulnerabilities caused by political, institutional and external shocks over a horizon the 20-year forecast of the debt burden. The European Commission works (2017) also discusses a series of challenges to the sustainability of public debt for all EU countries, alongside a synthesis of public debt sustainability and a series of fiscal sustainability indicators in order to achieve a horizontal perspective on the sustainability of debt.

A more focused approach on indebtedness indicators is found in the work of the International Organization of Supreme Audit Institutions (INTOSAI, 2010), which details three types of indicators: debt vulnerability, debt sustainability and financial indebtedness. In this paper, between the sustainability indicators can be highlighted: Fiscal Sustainability Indicators with Long-Term Restrictions (Bagnai, 2003), Sustainable fiscal position indicator (Croce and Juan-Ramón, 2003) Fiscal Consistency Indicator (Blanchard, 1990), Macro-adjusted primary deficit indicator (Talvi and Végh, 2000), Short term primary gap indicator, Buiters' Indicator (Buiters, 1985), but also Currency availability indicators (Calvo, Izquierdo and Talvi, 2003).

3. Methodology

The article starts in analysis from the use of the IMF conceptual framework, as well as from the use of data, studies and reports of: the European Commission, the World Bank, the National Bank of Romania, the National Institute of Statistics (INS), the Ministry of Public Finance of Romania, but also of the "Victor Slăvescu" Centre for Financial and Monetary Research. In order to complete the IMF methodology on the analysis of public debt sustainability, I have proposed and used a series of indicators such as: Overall Public Debt Rate (%) (OPDR), Public Financial Debt Rate (%) (PFDR), Financial Stability Indicator of the state depending on the outcome of the year or fiscal balance and debt (FSI), Global financial autonomy in relation to the fiscal balance (GFA), Long-term financial autonomy in relation to the fiscal balance (%) (LTFA), Financial leverage in relation to the fiscal balance (FL), Interest Rate Coverage (IRC), Overall public solvency (%) (OPS), Public Patrimony Solvency of the fiscal balance (%) (PPS), Gross public debt per capita (GPDcapita), Elasticity of Gross public debt in relation to the unemployment rate (Egpdur), Elasticity of Gross public debt in relation to state social insurance budget expenditures (Egpdssibe), Elasticity of Gross public debt in relation to unemployment insurance budget expenditures (Egpdhife), Elasticity of Gross public debt in relation to the Health Insurance Fund expenditures (Egpdhife).

Through the empirical approach, applying some of these indicators to the case of Romania, I was able to extract a series of important conclusions on the sustainability of public debt (also these results could be extrapolated, as far as there are available data, to other countries with unrestricted access to international capital markets - MACs).

4. Results

According to the IMF, for MAC countries, debt sustainability analysis (DSA) is grounded on a risk-based approach, with countries divided into two categories of analysis: *lower scrutiny and higher scrutiny*, thus ranked on the basis of access to funds and a set of indicators, including those of indebtedness. It is recalled that debt indicators, according to the IMF, are considered liquidity ratios and solvency indicators. For example, the stock of debt to repayment is considered as a solvency indicator, while debt service rate and gross

financing needs reflect potential liquidity problems. In general, with differentiated thresholds if they belong to emerging or advanced economies, or to the lower scrutiny or higher scrutiny frameworks, the indicators used in the DSA under the IMF framework are: Public debt level (% of GDP), Public gross financing needs (% of GDP), Three year cumulative primary balance adjustment (% of GDP), Coefficient of variation of growth, Bond yield spreads (base points), External financing requirement (% of GDP), Public debt held by non-residents (share of total), Public debt in foreign currency (share of total), Annual change in the share of short-term debt at original maturity.

It is worth mentioning that also the European Commission (EC) in its "Debt Sustainability Monitor" it carries out an assessment of fiscal sustainability, namely an analysis of the sustainability of public debt along with a series of fiscal sustainability indicators. In the view of this institution, the framework allows for a consistent horizontal but also in time (on short, medium and long-term) assessments of the challenges to fiscal sustainability. To capture short-term risks, the European Commission uses an S0 indicator that is a composite indicator based on 25 tax and financial variables that have proven useful on the basis of earlier developments in detecting tensions or stresses of a fiscal nature. In order to detect the medium-term challenges, the European Commission also uses, as the IMF, a public debt sustainability analysis (DSA), but also an S1 indicator to reveal the necessary additional adjustments to the public primary balance so that the public debt / GDP ratio (%) to reach 60% by 2031, including debt financing in order to cover the problem of aging. For example, according to the EC assessment, Romania has an analysis of the sustainability of the public debt which falls under a low risk, but the S1 indicator (and, within it, the initial budgetary position) places it at the level of the average risk among the European economies. Equally, the EC assesses long-term sustainability through an S2 indicator. This indicator reveals the initial primary balance adjustment to stabilize the debt / GDP ratio on an infinite horizon (also taking into account the aging of the population). One of the weaknesses of this indicator may be to indicate the stabilization of public debt at relatively high levels, undesirable in the situation of countries that already have a high indebtedness in relation to the Stability and Growth Pact (SGP). According to the Commission, regarding the S2 indicator, Romania can be assessed as registering a medium risk. At the same time, the EC, like the IMF, complements the analysis of public debt sustainability by analyzing the public debt structure (maturity, contracting currency and holders), public assets and contingent liabilities related to the banking sector. Without attempting to imitate the analysis of the European Commission and the IMF, I propose a series of indicators of public debt sustainability with regard to MAC countries, in order to complement the IMF methodology (Table no.1).

Table no. 1. Indicators of public indebtedness that could supplement the image of a DSA

Indicators	Formula
Overall Public Debt Rate (%) (OPDR)	Overall Public Debt Rate = Gross public debt *100/Total State Assets under the Consolidated Balance Sheet of Public Administration =GPD*100 /TA
Public Financial Debt Rate (%) (PFDR)	Public Financial Debt Rate = Gross public debt *100/Financial assets of the state according to the consolidated balance sheet of the public administration PFDR=GPD*100/FA
Financial Stability Indicator of the state depending on the outcome of the year or fiscal balance and debt (FSI)	Financial Stability Indicator = Long-term public debt *100/Fiscal balance and loans FSI=LTPD*100/(FB+L)

Global financial autonomy in relation to the fiscal balance (GFA)	Global financial autonomy = Public Debt/Fiscal Balance $GFA = PD/FB$
Long-term financial autonomy in relation to the fiscal balance (%) (LTFA)	Long-term financial autonomy = Long-term public debt *100/Fiscal Balance $LTFA = LTPD * 100 / FB$
Financial leverage in relation to the fiscal balance (FL)	Financial leverage in relation to the fiscal balance = Total State Assets /Fiscal Balance $FL = TA / FB$
Interest Rate Coverage (IRC)	Interest Rate Coverage = (Fiscal Balance + interest expense)/interest expense $IRC = (FB + IE) / IE$
Overall public solvency (%) (OPS)	Overall public solvency = Total State Assets under the Consolidated Balance Sheet of Public Administration*100/ Gross public debt $OPS = TA * 100 / GPD$
Public Patrimony Solvency of the fiscal balance (%) (PPS)	Public Patrimony Solvency = Fiscal Balance*100/ Total State Assets $PPS = FB * 100 / TA$
Gross public debt per capita (GPDcapita)	Gross public debt per capita = Gross public debt / number of inhabitants $GPDcapita = GPD / NI$
Elasticity of Gross public debt in relation to the unemployment rate (Egpdur)	Elasticity of Gross public debt in relation to the unemployment rate = the change in gross government debt to gross government debt in the first year of analysis divided by the change in the unemployment rate relative to the unemployment rate in the first year of analysis $Egpdur = (\Delta GPD / GPD_0) / (\Delta UR / UR_0)$
Elasticity of Gross public debt in relation to state social insurance budget expenditures (Egpdssibe)	Elasticity of Gross public debt in relation to state social insurance budget expenditures = the change in gross public debt relative to the gross public debt in the first year of analysis divided by the change in the state social insurance budget expenditures related to the social insurance budget expenditures in the first year of analysis $Egpdchbass = (\Delta GPD / GPD_0) / (\Delta SSIBE / SSIBE_0)$
Elasticity of Gross public debt in relation to unemployment insurance budget expenditures (Egpdube)	Elasticity of Gross public debt in relation to unemployment insurance budget expenditures = the change in gross government debt to gross government debt in the first year of analysis divided by the change in the unemployment insurance budget expenditures relative to the unemployment insurance budget expenditures in the first year of analysis $Egpdchbass = (\Delta GPD / GPD_0) / (\Delta UIBE / UIBE_0)$
Elasticity of Gross public debt in relation to the Health Insurance Fund expenditures (Egpdhife)	Elasticity of Gross public debt in relation to the Health Insurance Fund expenditures = the change in gross government debt on a gross public debt in the first year of analysis divided by the change in the health insurance budget expenditures relative to the health insurance budget expenditures in the first year of analysis $Egpdchfass = (\Delta GPD / GPD_0) / (\Delta HIBE / HIBE_0)$

Source: author's conception

Note: OPDR - expresses the extent to which state assets can contribute to public debt financing. An indicator of over 70% could indicate a higher vulnerability situation related to over-reliance on credit. PFDR - Expresses the extent to which state financial assets can contribute to public debt financing. FSI - Shows the long-term debt ratio in the fiscal balance or the difference between state revenues and expenditures (budget deficit or surplus) plus the bond issue. The indicator shows how to finance the primary balance from attracted sources or own sources. GFA - highlights the proportion of total public debt financing through the fiscal balance, a decrease in the indicator reflects a strengthening of the self-financing capacity. LTFA - highlights the proportion of long-term public debt financing in the fiscal balance. FL - expresses the correlation between the financial structure and the fiscal balance. It is preferable to have the ratio between the two elements as high as possible. IRC - Expresses the potential ability of the state to cover interest charges. OPS - is the inverse of the public debt ratio and expresses the possibility of covering the gross public debt with assets. PPS - is the inverse of the financial leverage and expresses the possibility of

covering the fiscal balance by the total of the sources of financing. GDPcapita - may be an indicator of appreciation of the quality of life (especially in the medium and long term) in order to identify the importance of debt per capita. Egpdur - Expresses how much public debt is affected by the change in the unemployment rate. The report is analyzed in module, and if the absolute value of the elasticity is above 1, it is considered an elastic public debt. Egpdsibe - is a relationship between the change in gross public debt and the change in the state social insurance budget. Expresses how much public debt is affected by the change in state insurance budget expenditures. The report is analyzed in module, and if the absolute value of the elasticity is above 1, it is considered an elastic public debt. Egpduibe - expresses how much public debt is affected by the change in unemployment insurance budget expenditures. The report is analyzed in module, and if the absolute value of elasticity is above 1, it is considered an elastic public debt. Egpdhife - is a relationship between the percentage change in gross public debt and the percentage change in the health insurance fund's expenditure. Explain how much public debt is affected by the change in health insurance fund expenses. The report is analyzed in module, and if the absolute value of the elasticity is above 1, it is considered an elastic public debt.

We exemplify part of the indicators proposed for completing the ASD analysis on the case of Romania during the period (2011-2015 / 2016) (Table no. 2).

Table no. 2. Indicators of public indebtedness that could supplement the image of a DSA for Romania

	2011	2012	2013	2014	2015	2016
Overall Public Debt Rate (%) (OPDR)	26.0	29.1	30.4	31.7	31.2	-
Public Financial Debt Rate (%) (PFDR)	124.5	130.8	144.9	144.2	146.8	-
Global financial autonomy in relation to the fiscal balance (GFA)	-8.1	-15.2	-15.7	-21.6	-27.0	-16.3
Financial leverage in relation to the fiscal balance (FL)	-31.1	-52.1	-51.6	-68.3	-86.6	
Interest Rate Coverage (IRC)	-1.2	-0.4	-0.5	-0.2	-0.1	-0.8
Overall public solvency (%) (OPS)	384.7	343.3	328.9	315.6	320.3	-
Public Patrimony Solvency of the fiscal balance (%) (PPS)	-3.2	-1.9	-1.9	-1.5	-1.2	-
Gross public debt per capita (GPDcapita) (mil lei/mil persons)	9.5	11.1	12.4	13.6	14.1	15.1
Gross public debt elasticity in relation to the unemployment rate (Edpsom)	-	3.3	2.4	2.2	24.7	1.0
Elasticity of Gross public debt in relation to state social insurance budget expenditures (Egpdsibe)	-	12.7	3.9	2.1	0.7	1.4
Elasticity of Gross public debt in relation to unemployment insurance budget expenditures (Egpduibe)	-	0.9	4.2	0.7	0.2	0.3
Elasticity of Gross public debt in relation to the Health Insurance Fund expenditures (Egpdhife)	-	1.8	0.6	10.6	1.4	0.6

Source: author's conception and calculations, IMF data, Ministry of Finance and Internal Affairs (Financial Stance, 2016 edition).

5. Conclusions

The analysis of public debt sustainability is a delicate issue that involves, in addition to the analysis of public debt indicators also a series of qualitative analyzes to capture the peculiarities of the economies under review, but the IMF, through its analysis framework, provides an important milestone from the methodological point of view. The article aims, without detailed IMF methodology, to treat the sustainability of public debt only in countries identified as "market-access" (MACs) (according to IMF criteria), including Romania. The article proposes a series of indicators that do not repeat the IMF indicators but represent a step of deepening and supplementing IMF analysis.

Analyzing the results of the proposed indicators for Romania, we can find that:

- The overall public debt rate reflects a rather reserved public policy on recourse to credit, however, the tendency to increase the indicator without a real restructuring of the economy can not be interpreted positively;

- The public financial debt rate expresses the increasingly limited extent in which state financial assets can contribute to public debt financing during the review period, with an important increase in the indicator;

- The financial leverage in relation to the fiscal balance reflects the fact that the fiscal balance is in a permanent imbalance (giving the negative sign to the financial leverage), however the increase of the indicator can be positively interpreted by increasing the total assets of the state;

- Interest Rate Coverage also reflects the negative fiscal balance and expresses the potentially smaller capacity of the state to cover interest expenses;

- The overall public solvency expresses the relatively satisfactory possibility of covering gross debt with assets, but this indicator is also on a downward trend in 2011-2014;

- The public patrimony solvency of the fiscal balance expresses the possibility of covering the fiscal balance by the total of the sources of financing, the negative sign reflects the constantly unfavorable difference between state revenues and expenditures, but the reduction of the indicator shows the improvement of the situation, either by lowering the fiscal deficit or by increasing the state assets;

- Gross public debt per capita (GPDcapita) (mil lei/mil persons) shows an increase in indebtedness during the analysis period, which is all the more worrying as the number of inhabitants of Romania is forecast to decrease year-on-year;

- The elasticity of the gross public debt in relation to the unemployment rate proves over the analysis period to be above the unit value (expressed in module), a similar fact also found for the Elasticity of Gross public debt in relation to state social insurance budget expenditures, elements that call for an increased attention from the governors for the improvement of unemployment and of the state and state social insurance budget, as the values of the indicators show an influence of these elements on the evolution of the gross public debt.

In conclusion, Romania's public debt situation does not present elements that could cause significant concerns in the near future, but the IMF and European Commission (European Commission, 2017) forecasts an increase in public debt, including in relative terms (in terms of GDP) which requires a careful approach to the structural elements of public debt, as well as fiscal-budgetary policy.

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THE ASPECT OF KNOWLEDGE MANAGEMENT

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Abstract: *Knowledge management categorically differs from the management of an economic activity. Knowledge management is an unprecedented activity in time and space. However different the knowledge is, they need to be embedded in a system, need to be upgraded, expanded. For anyone knowledge is a social "support"; for companies, firms knowledge of staff is the rating, their ability to overcome difficult situations.*

Key words: *knowledge, information, data, management.*

JEL Classification: *M10, D83.*

Knowledge is the resource without length, width, height, weight, odor e.t.c. but they are and will still be the most demanded by human society and will therefore cost more and more expensive.

During his life, man was preparing for life developing his muscles, preparing for manual labor. At present physical work increasingly became "history", man is already preparing for intellectual work. In other words, contemporary man prefers to develop his "intellectual muscles". This development takes place in four stages:

- (1) - initiating knowledge;
- (2) - the accumulation of knowledge;
- (3) - knowing the knowledge;
- (4) - generating knowledge.

Contemporaneity still has a specific. In former times Galois, at an age of 18 years, was the author of a new theory in mathematics. History knows many Newtonians, Pascalians, Einsteinians e.t.c. At present, theories, new basic knowledge are the products of collective intellectual efforts, which are equipped with the necessary infrastructure for research, experiments, simulations, with means of communication, exchange of opinions, ideas. Additionally, ideas generators are usually motivated financially, socially. These (generators) can develop a creative intellectual force if they are a "critical" number. The proverb: A flower does not make a spring. A second aspect, intellectual products, ideas, and knowledge necessarily generated must be required. Knowledge helps to develop, for example, technologies and vice versa - these (technologies) can contribute to the further development of knowledge. The existence of only primitive technologies leaves no room for new ideas, effective technologies for two reasons: (1) - lack of qualified staff; (2) - lack of finance for organizing serial production of the respective equipment. In this way (perhaps) it is explained that the most and the greatest successes in the field of innovation are the highly developed industrial countries (the 7 countries). Countries that solve their financial problems from exports of natural resources, oil, natural gas, as a rule, do not place the "emphasis" on science, as a consequence, technologies are at best imported or old and morally obsolete. The availability of oil resources, natural gas, unreasonably high prices to them, have transformed countries exporting oil, natural gas, except the USA, Norway, Australia, to countries importing goods imported from outside. Reducing, or more precisely, collapsing oil prices will "respect" parasitic countries. It is known that about 70% of oil resources are consumed by cars with internal combustion engines based on gasoline, gas, diesel. Replacing internal combustion engines with electric motors will help reduce demand for oil resources considerably and thus reduce prices. Exporters of oil resources will be in difficult situations. Science can not be developed overnight, there are

needed 2-3 generations of scientific collaborators to create an "incubator" of ideas, technologies, and generator of ideas.

However, the problem is also complicated by the lack of the necessary scientific infrastructure in these countries for the most diverse experiences, analyzes, tests etc. Another issue will be created by highly developed industrialized countries, where the motivation of the work of knowledge generators is clearly superior to that of "oil" countries, and therefore scientific figures will be "lured" into technologically and scientifically developed countries. The question of "Knowledge Management" is: but who is the manager? Our answer: manager is the market, the demand for knowledge of the producers of goods and services. This (demand) appears not always, as a rule, with delay. That is why the first knowledge manager must be the state.

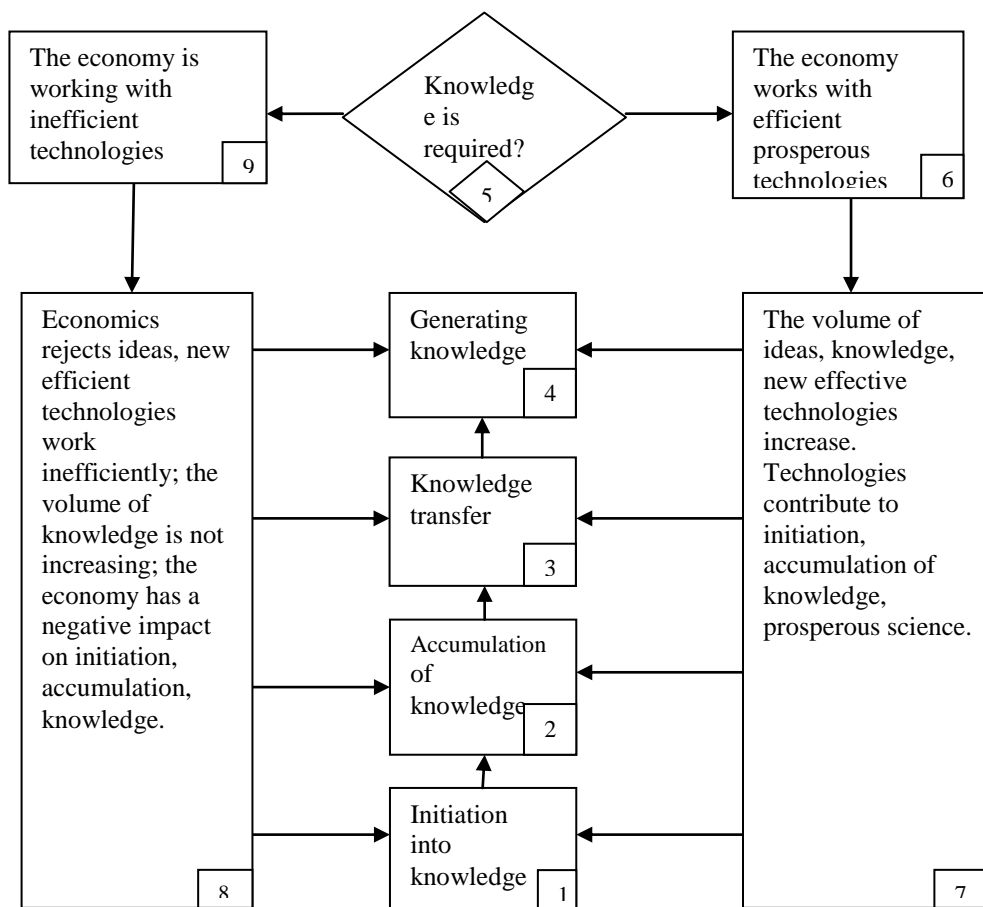


Figure no. 1 Block diagram "The Evolution of knowledge"

If we will speak about knowledge management, it is probably necessary to define or correctly say to interpret the notion of knowledge. Some authors (Wiig, 1995) consider that knowledge can provide useful information. In such cases it is necessary to define the notion of information. The notions in our case, knowledge, information, more correctly, are not to define them but to interpret them. The information is constituted:

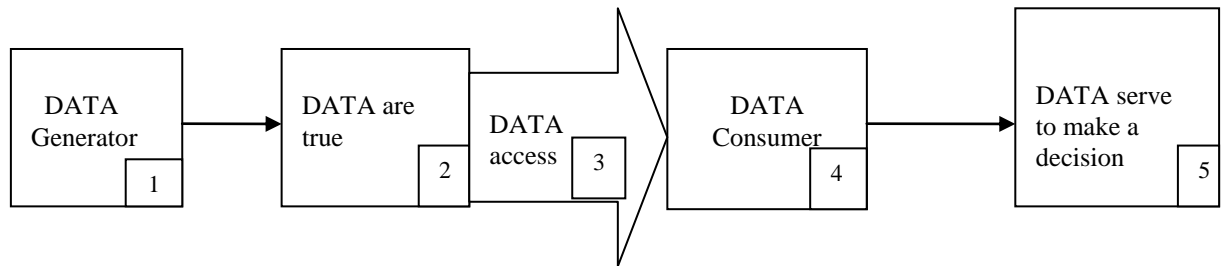


Figure no. 2 Schematic block "INFORMATION"

(1) - Dates, its must be true; the dates consumer is required; he (the consumer) must have access to reliable data; data become informative only if they (dates) are the basis of a decision. The definitions of knowledge by the presence or lack of information is highly questionable. In this case it can be said that knowledge are the products of the data generator. At our point of view knowledge are the capacities of a person or a group of people to generate ideas. Ideas are not identical to knowledge, they are just the product of capabilities. Knowledge management could be identified with managing the evolution of people's capacities to generate ideas, innovations. Knowledge are invisible assets, are intellectual "muscles", are capacities that in some cases can manifest themselves, others are not required.

Knowledge may be general, may be specifically required in the internal activities of companies, firms, ministries etc. The general knowledge of all kinds in the Republic of Moldova is coordinated by the state, they are part of an education system, which is in constant modernization. The system contains: (1) - educational institutions by types; (2) - teaching staff by type of institution; (3) - records of students, students by types of institutions; (4) - number of pupils, students by type of education per 10 thousand inhabitants; (5) - the number of graduates by type of institution; (6) - the number of graduates by type of institution per 10 thousand inhabitants; (7) - the number and promotion of doctoral candidates; (8) - the number and promotion of postdoctoral students (Tables 7-8). Reducing the number of the population, increasing the number of emigrants in the country generated negative trends in the number of educational institutions by types (Table 1). Compared to the academic year 2012-2013, namely in 4 years, the number of schools, gymnasiums, lyceums decreased by 5% in the 2015-2016 year of study; secondary vocational technical education institutions by 30%; of post-secondary technical vocational education institutions by 4%; of higher education institutions by 9%. There is no explanation for a 30% reduction in the number of institutions preparing workers. On average, in 4 years (2012-2016), the number of educational institutions has decreased by about 12%, with all the negative consequences that society will suffer. In this context, it is natural to reduce the teaching staff by types of institutions. Compared to 2012 (the year is taken arbitrarily), the teaching staff in schools, gymnasiums, lyceums decreased by 13%; in the secondary vocational technical education institutions decreased by 14%; in the post-secondary technical vocational education institutions - by 8%; in the higher education institutions by 12%. In the meanwhile 12% of the teaching staff, who are likely to re-qualify, will emigrate. Negative trends, the reduction of the number of education

institutions, teachers are the consequence of reducing the number of students (Table 3). During these 4 years the number of pupils in schools, gymnasiums, lyceums decreased by 9%; of the secondary technical vocational schools - by 18%; of the post-secondary ones - by 11%, from universities - by 20%.

Table no. 1. Educational institutions by types (a. 2012-2013-100%)

		2012-2013	2013-2014	2014-2015	2015-2016
1	Schools, gymnasiums, high schools	1	0,98	0,96	0,95
2	Secondary technical vocational education institutions	1	1	0,91	0,7
3	Post-Secondary technical education institutions	1	0,96	0,96	0,96
4	Higher education institutions	1	0,94	0,91	0,91

Table no. 2. Teaching staff by type of institution (a. 2012-2013-100%)

		2012-2013	2013-2014	2014-2015	2015-2016
1	Schools, gymnasiums, high schools	1	0,94	0,9	0,87
2	Secondary technical vocational education institutions	1	0,95	0,95	0,86
3	Post-Secondary technical education institutions	1	0,96	0,92	0,92
4	Higher education institutions	1	0,95	0,9	0,88

Table no. 3. Students by type of institution (a. 2012-2013-100%)

		2012-2013	2013-2014	2014-2015	2015-2016
1	Schools, gymnasiums, high schools	1	0,96	0,93	0,91
2	Secondary technical vocational education institutions	1	0,93	0,89	0,82
3	Post-Secondary technical education institutions	1	0,95	0,97	0,99
4	Higher education institutions	1	0,95	0,87	0,8

Table no. 4. Pupils, students by type of institutions at 10 thousand (a. 2012-2013-100%)

		2012-2013	2013-2014	2014-2015	2015-2016
1	Schools, gymnasiums, high schools	1	0,96	0,93	0,91
2	Secondary technical vocational education institutions	1	0,93	0,89	0,82
3	Post-Secondary technical education institutions	1	0,95	0,98	1
4	Higher education institutions	1	0,95	0,88	0,8

Table no. 5. Graduates by type of institutions (2013-100%)

		2013	2014	2015	2016
1	Schools, gymnasiums, high schools	1	0,94	0,87	0,78
2	Secondary technical vocational education institutions	1	1	0,93	0,88
3	Post-Secondary technical education institutions	1	1	0,88	0,85
4	Higher education institutions	1	0,93	0,91	0,88

Table no. 6. Graduates by type of institutions at 10.000 places. (2013-100% year)

		2013	2014	2015	2016
1	Schools, gymnasiums, high schools	1	0,94	0,87	0,78
2	Secondary technical vocational education institutions	1	1	0,93	0,9
3	Post-Secondary technical education institutions	1	1	0,86	0,86
4	Higher education institutions	1	0,93	0,91	0,89

Table no. 7. Number and promotion of doctoral candidates (2012-100%)

		2012	2013	2014	2015
1	Number of institutions with doctorate activity	1	1,04	1,06	0,91
2	Number of PhD students	1	1,02	1,1	1,18
3	PhD graduates	1	0,92	0,97	0,92

Table no. 8. Number and promotion of postdoctoral students (2012-100%)

		2012	2013	2014	2015
1	Number of institutions with doctorate activity	1	1,11	1,06	1
2	Number of PhD students	1	0,9	1,05	1,2
3	PhD graduates	1	1,12	1,06	0,82

On average, the number of students dropped by 12% in 4 years. The same trends were maintained for the number of pupils, students to 10.000 inhabitants. On average, their number decreased by 12% (Table 4). The number of graduates, schools, gymnasiums, lyceums in 4 years (2012-2016) decreased by 22%; secondary technical education institutions - by 12%; of post-secondary technical professional institutions - by 15%. The educational capacities and the number of graduates in all educational institutions decreased by about 13% in 4 years.

Another trend can be observed in the field of PhD students' training. In 2013, compared to 2012, the number of doctoral students in the Republic of Moldova increased by 11%; have graduated 13% more. The quality of general knowledge in the profile of all institutions is now "identified" by a "hard" control system equipped with video cameras, audio, with the "relocation" of the graduates in places different from those where they was studing e.t.c. The rating system may be successful, but it is certainly expensive. Only cameras and outside assistants require finance that could be used to develop the infrastructure of educational institutions. An alternative, in our view, would be: each institution estimates the knowledge of the graduates at their own discretion. The graduate,

in the continuation of his or her career, either continues his studies or commits to work, is obliged to confirm additionally through the admission system. In this system, the student, the student endeavors, the educators help him to succeed in the next stage of his career. The system could also be supported by drainers, economic, social mechanisms, stimulating pedagogical groups to increase their quality of work. The necessity of estimating the knowledge of graduates, not by "controllers" from the outside, but by the "natal" institution, where the student has made his studies, can be interpreted metaphorically: no painter, no musician, no sportsman e.t.c. they did not become a painter, musician, sportsman (champion) etc., because they had the grade 10 at the institutions where they did their studies, but because they confirmed the grade 10. Admission examinations, traditional as they were 20 years ago, contributed to the increase of the quality of knowledge, the teaching was required for classes of meditation, for additional intellectual work. The enrollment of high school graduates, at university-based grades, has considerably reduced the quality of knowledge. In this context: for graduates who do not continue their studies but are arranged for work, periods of 5-6 months of internship are required, when the graduate has succeeded in confirming the studies, the quality of the knowledge. The experience of highly developed industrial countries: anyone who is a specialist in the field of employment in another country is obliged to confirm his medical knowledge.

Knowledge management categorically differs from the management of an economic activity. Knowledge Management (MC) is an unprecedented activity in time and space. Intangible assets (knowledge) can not always be quantified. Salaries of staff, as a rule, do not reflect the price of their knowledge (staff). Knowledge can be "procured" (paid studies), can be "appropriated", can be "passed" to other people. This flow occurs only in cases when staff are motivated to acquire, transmit. Intellectual work, unlike the physical one, is the "creature" of man and not of nature. That's why intellectual work requires emotional, psychic efforts.

Knowledge at the abstract level is created by mankind. In the last decades, the emergence of information technologies, the Internet that allows for the most varied ideas changes, technologies e.t.c. have contributed to the evolution of knowledge, to the need of retraining the staff, to the improvement of the study programs e.t.c. The knowledge of the staff is the intellectual chapter of the company, the company, the country. The most effective investments for everyone are investing in intellect, developing creative capacity, increasing the amount of knowledge. Knowledge management is a new, new field with new concepts, with new methods, with new technologies, with new structures e.t.c. Additionally, man accumulates knowledge, some of which will not be applied in later activities. In this case it can not be said that some knowledge (the unsolicited of life) were in addition. All knowledge, including unused ones, generates two effects: (1) - develops how to think, analyze, create; (2) - are useful in subsequent activities. Knowledge Management is a new domain set up by Wiig, 1993, 1994, 1995 (Wiig, 1995). However different the knowledge is, they need to be embedded in a system, need to be upgraded, expanded. For anyone knowledge is a social "support"; for companies, firms knowledge of staff is the rating, their ability to overcome difficult situations.

Conclusion

Everybody needs knowledge. In the Republic of Moldova, however, it is difficult to meet a company that would finance the processes of knowledge accumulation by its own staff. In principle, it is necessary for companies, firms to develop or use outsourcing services to develop methodological guidelines. Staff, annually or twice a year, must be required to undergo exams to know the methodological guidelines. Such exams are also

necessary for technical, technological, organizational considerations. The employee must have a profound knowledge of the profile of his / her duties.

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