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ON THE HOMO SOCIONOMICUS (HS) MODEL OF RATIONALITY

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Abstract: *The economic behaviour is modelled, logically and quantitatively, on the basis of the assumption of rationality, understood as the means-to-goal suitability, representative of this approach being the famous model of rationality homo œconomicus. Although this model has been adjusted, amended, and reformulated in order to bring it closer to the real man, all these "improvements" have proven to be simple superficial changes, not producing a qualitative leap in shaping the pattern of economic behaviour. The paper aims to start not from an economic perspective on human action, but from a social/sociological one. In this context, the study introduces a series of axioms that focus not on the economic interest, but on the social one, proposing a new rationality model of the individual, respectively of the group, namely the homo socionomicus rationality model. Finally, the study performs a qualitative analysis of proposed axioms demonstrating their consistency, coherence and completeness.*

Key words: *rationality, model, socionomics.*
JEL Classification*: A14, B40, B59.*

1. The fundamental principle

The term *socionomicus* comes from the Latin word *socius* meaning companion, accompanying, and the Greek word *nomos* (*νομός*) which means law, regulation, norm. Thus, the term socionomy means the system of rules governing a social group of people, and *homo socionomicus* refers to the behaviour of such a group of people (which can be of any size and structure, from a family to a nation or to mankind in general). In our opinion, any association of at least two individuals, regardless of purpose, get, *eo ipso*, a social character (I would say, even a political character).

The fundamental principle of the *homo socionomicus* (HS) rationality model is the *principle of compliance*. To be noted that the term incipient and commonly encountered in the literature is that of *homo sociologicus*, but in order to preserve the suggestion of a rationality model (that is, the model containing/imposing rules) we have allowed ourselves to replace the suffix *logicus* with the suffix *nomicus*, especially because the term logicus suggests the idea of theory, while we need the idea of the rule. The proposal also has an aesthetic advantage: the three rationality models treated have the same suffix: *nomicus*. There is even a discipline called *socionomy*, but which aims at studying society as a whole and, above all, the social movement phenomenon. What we mean by the term *socionomicus* refers to the behaviour of the socially conditioned individual (especially at the level of the social group of proximity) and not to the behaviour of society (it seems to us that the difference between socionomicus and socionomy is analogous to the difference between social psychology and sociology) (Kuhn, 2008).

We consider that the following predicates of sufficiency could define the compliance: the criterion of behaviour is the compliance with the common rule:

- the common rule is the norm in force at the given social group level (NB: it is irrelevant how the rule in force at the level of the group is established: a) *authoritatively*, that is, by the most „authorized" individual (or sub-group) (e.g. by holding the power to do); b) *democratically* (by imposing the will of the majority). Consensus is a species of democracy, that is, the species in which the

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majority is identified with unanimity. Obviously, how to establish the common norm in social groups has nothing to do with the issues of freedom, which we are not discussing here);

- the axiology of the common norm (or, more specifically, the establishment of the common norm) only uses *social* utility values (minimizing the *social cost of opportunity*) (NB: minimizing the social cost of opportunity should take into account social preferences (a problem that should be addressed separately because of its complicatedness, on one hand, and its significance that goes beyond the question of economic rationality models, on the other hand);
- compliance to (or failure in) common rules on an individual level is determined also based on minimizing the cost of individual opportunity, but no longer refers, this time, to a lot of alternatives on economic decisions, as model HE does, but only to the two alternatives (compliance, vs. non-compliance with the common rule); this cost is provided in the structure of the common rule in the form of the sanction applicable by the social community in case of breach of the common rule (let's note that the sanction can be formal or informal (in the case of the informal norm, for example, the moral norm). Therefore, in the HS model, the opportunity cost is not purely monetary and even not liable to be „translated" into monetary costs (as in the HE model), but it may have different, imponderable meanings: social prestige, credibility, dignity, honour, etc.). In fact, to highlight the specificity of the social opportunity cost, we will use the negative externality concept associated with the common norm of behaviours.

2. The set of axioms

We consider that the *homo socionomicus* (HS) model of rationality (Nozick, 1995) operates on the basis of the following four axioms, compatible and consistent with the fundamental principle, as well as with each other:

- (HS-A1) the social game is impure and imperfect;
- (HS-A2) the individual decision is taken to minimize the negative externalities associated with the decision taken;
- (HS-A3) the individual has limited capacity to instantly process available information on common behavioural norms;
- (HS-A4) the logical consistency of the calculation of the individual's behavioural decision may be fallible (It should be noted that this axiom does not „prescribe" the failure of the individual's decision-making process, but only the absence of the infallibility of the process. The inference from the premises provided by homo socionomicus is not necessarily invalid, but also it is not necessarily valid (as in the HE model).

Let us briefly characterize each axiom.

- <u>(HS-A1) the social game is impure and imperfect</u>

According to common acceptance, the „pure" feature refers to the character of social actors, their outputs and access to „play", while the „perfect" feature refers to the character of access to information and to information processing. On this basis, the (HS-A1) axiom does not retain, as shown below, the pure character from the HE model, but retains the perfect character of the latter model.

We understand by pure and perfect social game the social game „endowed" with the following predicates of sufficiency:

a. the *atomicity* of the social actors: the social actors face a pre-existing normative system, which they cannot influence individually. They only have to obey this system or, by respecting its rules, change it, but, until the change, the rules are

definitely imposed (unconditionally) (NB: The rules for changing the normative system are, in most cases, democratic rules but, to the limit, they can also be non-democratic ones);

b. *non-homogeneity* of social behaviours: the logical equivalent of the economic product (economic) in the HE model is, in the HS model, the behaviour. Economic/social actors „deliver" behaviours to other economic/social actors, and these behaviours are strongly and necessarily idiosyncratic; How is the non-homogeneity of social behaviours explained in response to the common social norm? The explanation is also used in any generic system: the output of a system is the effect of the action of the transformation function on the input (from formal point of view: y = f (x), where x has entered the system input, with y being noted the output from the system, and with f being noted the transformation or „production" function, i.e. how the input becomes output). As the „transformation function" is an imponderable idiosyncratic trait of every individual or social actor (depending on his axiological data, his economic or social interest, etc.), the social behaviour related to the same norm is usually heterogeneous at the level of the social group. There is, however, a limitation of this heterogeneity (which is, moreover, the logical basis for the possibility of recovering social predictability), namely under the impact of the *situational framework* which, likewise a geodesic, has the effect of uniformizing or homogenizing the social behaviours of individuals who act under the same social norm.

c. *unlimited (unrestricted) access to information*: given the much smaller amount of information on common behavioural norms compared to the amount of information on economic behaviour (production, consumption or saving decisions) in the HE model, the access to specific information (common rules) in HS is much greater facilitated. In principle, this access can be considered as complete without striking too much on the realism of such a thesis;

d. *entry/exit of social groups is restricted*: there are barriers (formal, but especially informal) regarding the access to social groups and, in particular, the change of belonging to a particular social group (Birth places the individual in a social group to which their parents belong, but as the individual evolves (including the acquisition of a particular instruction or intellectual status), he may „request" the change of membership to a social group that provides more chances for realizing their own life program. Although there are no rigidities in the case of castles or general states, certain frictions may arise and, in any case, one cannot presume (or postulate) the full freedom of movement of individuals among social groups (this rigidity is often generated by symbolic reasons).

In essence, this feature, which describes the first axiom of the HS model, says there is no full flexibility regarding the situational framework under which the individual chooses to manifest his social behaviour.

- (HS-A2) the individual decision is taken to minimize the negative externalities associated with the decision taken

First of all, it should be noted that this axiom does not postulate an altruistic behaviour, in the sense that the individual deliberately aims to produce minimal harm (negative externalities) to the other or to all the other participants in the social game. Minimizing negative externality refers to the fact that any violation of the common norm of behaviour is accompanied by the application of a sanction, and the individual is actually considering minimizing this sanction (NB: „charged" with the application of the sanction related to the violation of the common/social norm is, of course, the state/government,

through the social contract). Obviously, here we are considering the codified rules. There are, of course, sanctions for violating the moral norms of behaviour, but, in this case, the sanctioning authority is the community, generically considered.

Secondly, it is necessary to explain what is meant by minimizing the negative externalities created by the decision taken. In order to minimize (i.e. in order to optimize in general), there is a need for at least two alternatives to choose between. There is a common rule in relationship to a given behaviour, so there is no choice between two common rules concerning the same behaviour in order to choose to breach the rule which indicates the slightest sanction for that infringement (and yet this situation is possible, probably in much more cases than it would seem at first glance). Generally, therefore, choosing between alternatives will mean choosing between complying with the rule and not respecting the rule. Obviously, compliance with the rule „minimizes" the negative externalities created by the decision in question. It follows that in the HS model, the general trend of individuals is to be compliant with the common standard of behaviour (NB: We need to make a statement about the negative externality concept that the individual faces when a common rule is infringed. Indeed, the sanction appears to the individual in question as exercised by an „individual" (in this case, the state/government) from outside, so the first condition of the concept of externality is verified. Moreover, the individual who is to be subject to the sanction was not consulted (therefore, he/she did not agree, principled) on the applicability of the sanction in question (from a philosophical point of view, a common rule is opposed to every individual as something external, even if the decision to impose the sanction was taken democratically, that is, internally), so the second condition of the concept of externality is also checked. The fact that it is a negative externality is obviously from the fact that it has the content of a disadvantage (cost) with the individual in case is penalized).

- (HS-A3) the individual has limited capacity to instantly process available information on common behavioural norms

As social actors, individuals belong (formal or informal) to certain categories of social groups (socio-professional, cultural, ethnic, religious, etc. – here we can find as appropriate the suggestion of Pierre Bourdieu to view the social stratification in a topological way), which determines their processing possibilities (comprehension, calculation and evaluation) of social behaviour. Consequently, there is a variability in the degree of processing this information, depending on the concrete social affiliations. This axiom is much more realistic than the (HE-A3) axiom, although information on common norms of social behaviour is much more limited than information on all goods and production conditions of all economic actors in the HE model. Thus, the axiom postulates that individuals are aware of all the common social behaviour norms in force at the time they make their decision, but their ability to understand, evaluate, and therefore make informed decisions is limited. In fact, there is a legal principle that says no one can defend him/her with the lack of knowledge of the law (in the terminology of the present study, the word law will be replaced by the expression *common norm of behaviour*) (Kuhn, 2008). Thus, the legal liability (i.e. the bearing of the sanction, that is to say, the negative externalities associated with the common rule) acts irrespective of whether or not the individual involved in violating the common rule has knowledge about the existence of the rule in question. This principle has the following practical consequence: each individual must be concerned about knowing the rules of behaviour in force, so there is also a certain activism from individuals about knowing the common rules of behaviour.

There is, of course, both a quantitative difference from the (HE-A3) axiom (in the sense of reducing the amount of information needed to be processed) and a qualitative one (individuals have the implicit legal obligation to know the common standard of behaviour), but with however, the social structure of concrete individuals in society prevents the

functioning of an unlimited capacity of instantaneous processing of information of interest in the social behaviour.

- (HS-A4) the logical coherence of the calculation of the individual regarding the social behavioural could be fallible

First of all, the possible failure is due to the limited capacity of information processing of the common behavioural rules, as stated in the (HS-A3) axiom.

Secondly, the possible failure is due to the fact that individuals belong to different social groups, with their own group habitus, which generates „filters" to evaluate the set of common social behaviour rules in force at a given time (NB: The concept of *group habitus* that we introduce here is somehow a middle term between Bourdieu's concept of *habitus* (individual habitus – my note, ED) and our own concept of *situational framework* (Popper, 1981). Therefore, a broad development of behavioural issues within the HS model will include the three levels of habitus: individual habitus - group habitus - situational framework. The situational framework could be called, for reasons of terminological unity, *social habitus* (NB: many philosophers call such a social habitus with the term social structure, but there are some differences between them, firstly from the point of view of the extension: it seems the social structure is larger than the social habitus, because includes also the organizations). These filters generate different „colours" of evaluating the common rules, so different decisions of individuals belonging to different social groups. The idea of building a common benchmark (opposable to all social groups of individuals) of processing and evaluating the common social behaviour rules seems to be an error because it would detract from the realism of concrete (empirical) individuals' behaviour.

Therefore, a purely symbolic correspondence between the axioms of the HE model and the HS model could be as follows (Table no. 3):

Table no. 3. Comparative peculiarities of HE's and HS's axioms

	AXIOMS			
	A1	**A2**	**A3**	**A4**
HE	pure and perfect	optimizing	un-restricted	infallibility
HS	impure and imperfect	optimizing	restricted	fallibility

Source: author

3. Qualitative analysis of the set of axioms

(a) the consistency

- (HS-A1/HS-A2) impurity and imperfection of the „social market" is not contradictory to the choice based on the minimization of the negative externalities associated with the common norm of behaviour. Indeed, the optimization of the decision (whether or not to comply with the common social norm) is not hindered by the unlimited access to information on the common rule in question;
- (HS-A1/HS-A3) impurity and imperfection of the „social market" is not contradictory to the limited ability to instantly get and process information related to common rules of social behaviours;
- (HS-A1/HS-A4) impurity and imperfection of the „social market" is not contradictory with the (non-necessary) inferential fallibility of the individual;
- (HS-A2/HS-A3) minimizing the negative externalities associated with the common behaviour norm is not contradictory to the limited capacity of instantaneous processing of information related to common social behaviour norms;

- (HS-A2/HS-A4) the minimization of the negative externalities associated with the common norm of behaviour seems to be, however, contradictory to the potential inferential fallibility of the individual. Thus, if inference can be faulty, this means that there may be cases where the decision to choose between alternatives (in the standard case, the choice between respecting or not the common rule) is so as not to minimize the negative externalities associated with the common rule concerned. However, a closer analysis will reveal that this risk does not exist: indeed, at least in the standard case, it is obvious that the minimization of the negative externalities associated with a common rule of behaviour is only achieved if that rule is verified, that is, only when there is a compliance with the norm;
- (HS-A3/HS-A4) the limited ability to instantly process information related to common rules of social behaviour is not contradictory with the potential for inferential failure.

(b) the convergence

- the axioms (HS-A1) and (HS-A2) are convergent in that the minimization of negative externalities in the decision to comply with the common standard of social behaviour is not hindered by the impure and imperfect conditions of the social environment („the social market"); the reverse relationship is also obvious;
- the (HS-A3) and (HS-A4) axioms are in turn convergent with one another in making a social behavioural decision regarding compliance with the common rule in force (imperfect instantaneous processing of information and the potential failure of the inferences made are obviously convergent);
- as in the case of the HE model, we consider that between the two groups of axioms (the first two and the last two) we can accept a convergence relationship.

(c) completeness

1. independence (non-redundancy) of axioms:

- (HS-A1/HS-A2) from the impure and imperfect nature of the social game cannot be deduced the possibility of taking the decision by minimizing the negative externalities associated with the common norm of social behaviour; also, making decisions by minimizing the negative externalities associated with the common norm of social behaviour is possible under other conditions than those provided by the impulse of imperfect social game;
- (HS-A1/HS-A3) from the impure and imperfect character of social game cannot be deduced the possibility of limited capacity of instant information processing; the limited ability to instantly process information does not lead to the conditions of impure and imperfect social game;
- (HS-A1/HS-A4) from the impure and imperfect nature of social game cannot be deduced the possibility of inferential failure; at the same time, the possibility of inferential failure does not logically lead to conditions of impure and imperfect social game;
- (HS-A2/HS-A3) from the minimization of the negative externalities associated with the common social behavioural norm cannot be deduced the limited capacity of the instantaneous processing of the information; from the limited instantaneous processing capacity of information cannot be inferred the minimization of negative externalities associated with the common social behaviour norm;
- (HS-A2/HS-A4) from the minimization of negative externalities associated with the common social behavioural norm, the possibility of inferential failure cannot be deduced; from the possibility of inferential failure cannot be inferred the minimization of the negative externalities associated with the common norm of social behaviour;

- (HS-A3/HS-A4) from the limited capacity of instantaneous processing of information cannot be deduced the possibility of inferential failure; the limited ability to process information cannot be inferred from the possibility of inferential failure.

We conclude that the set of axioms proposed for HS contains only primitive axioms (none of the axioms is a theorem of other or of the others).

2. the functionality of the decision-making system:

- the *institutional criterion* (HS-A1): the impure and imperfect nature of the social game represents the institutional framework of HS model operation. As we have seen above, this axiom encompasses, in its turn, four institutional conditions in which the social decision is made and the social game unfolds (Quine, 2003);
- the *decision (behaviour) criterion* (HS-A2): the axiom of decision-making based on the negative externalities associated with the common rule of conduct (Sen, 1988), integrates the rationality criterion of the HS model (by integrating its fundamental principle - compliance principle); therefore, the rational decisions taken in this model will check this axiom, otherwise they will be considered irrational in relation to the HS model in question;
- *performance competence* (HS-A3): the axiom of limited instantaneous computation capacity (instantaneous processing of information) refers to the competence of the social individual within the HS rationality model; through competence (analogous to the case of language) is understood the ability of an individual to carry out specific and sufficient actions in a performative model (Mises, von, 2018), in our case the ability to execute specific and sufficient calculations to substantiate the decision made on the basis of the (HS-A2) axiom;
- *quality control of the decision* (HS-A4): the axiom referring to the inferential failure is the „control unit" of the HS rationality model; this axiom characterizes the fact that in the HS rationality model, the calculation made by the social individual may be incorrect, in the sense that it may be logically invalid (though not necessarily invalid).

We conclude that the set of axioms proposed for HS is operable, i.e. it has the minimum structure required to work.

Based on the two previous conclusions, we draw the final conclusion that the HS model's axiom set is a complete system.

4. Some logical consequences of the set of HS axioms

- the *homo socionomicus optimizes too*, but not in relation to the economic decision itself, but in relation to the common rule governing decision making, namely the execution (or non-execution) of the successive act of making that decision;
- the *optimal decision is unique*: as with the HE model, choosing an alternative (in the case of HS model, compliance or non-compliance with the prescriptions of the common social behaviour norm) is unique;
- *there is a unique theoretical HS model*: the theoretical HS model is the model in which the axioms are checked as they are formulated above; as in the HE model, relaxations of axioms are possible because, theoretically, they are formulated at their maximum qualitative level (this includes the atomicity of the social actors, namely the unlimited access to information on common social behavioural norms, the content of the (HS-A1) axiom, and the (HS-A2) axiom, respectively). By relaxing these axioms, practicable „versions" of the HS model are obtained, as in the HE model;
- the *fundamental principle of the HS model* (compliance principle) is *integrated into the (HS-A2) axiom*: minimizing the negative externalities associated with the common social behaviour norm. Indeed, this minimization reveals the compliance or non-compliance of the social individual with the rules (common rules of social behaviour).

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REFORMS OF ROMANIAN BANKS, AFTER 10 YEARS FROM THE FINANCIAL CRISIS

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Abstract: *Ten years after the financial crisis, which began in 2008, although the Romanian banking system lost about 10% of its size (the share of assets in GDP), it continues to be the main component of the Romanian financial system, with a share of three quarters. In regards to bank resources, we note a decrease in Romanian banks' dependence on the external environment, better financial autonomy of banks towards non-financial creditors, but also a shift of banking risk to the population and enterprises, which have increased their contribution to financing of banks' operations. The developments in Romanian banks' assets field indicate a decrease in banks' interest in Romania's real economy, probably due to the increase in its risk. Also, Romanian banks preferred to obtain lower but risk-free incomes offered by the state to investments made for public debt financing and focused on placements outside Romania. Last but not least, a decrease in the liquidity of our banks due to the decrease in the claims on the NBR.*

Keywords: *banks, loans, deposits, capital.*
JEL Classification: *G21.*

1. Introduction

The financial crisis, which has made its debut in Romania since the end of 2009, originated, in Romania, from both external factors and a series of internal imbalances and marked the final point of a stage of economic development, but also the beginning of a period different from the previous. The crisis, in Romania, did not have the effects of bank failures, takeovers of insolvent banks, nor did the state implement rescue programs for financial conglomerates, but, because banks had been one of the engines of growth before crisis, it has affected them both individually and globally, as a system. The present paper aims to analyse the changes that the Romanian banking system has suffered ten years after the beginning of the crisis, the structural mutations that have taken place within them, their importance in the economy, for enterprises or the population. This analysis is important because, on the one hand, we are at the end of an economic cycle, and on the other hand, financial developments seem to alter the role of banks in the economy.

Developments in banks, and their role in triggering the 2007-2009 financial crisis are quite common in literature, and the most recent of them hone in on structural bank changes in the decade since that time.

A recent study (2018) by the Committee on the Global Financial System on structural changes in the banking system after the 2008 recession states that its onset has ended a period of strong bank asset growth in many advanced economies and that, after that point, there was a decline in the banking sector relative to economic activity in the countries directly affected by the crisis. This adjustment of the banking sectors was due to the reduction in business volume, not firms leaving the banking sector. Another conclusion of this study is that European and American banks have become more selective and have focused on international banking activities, and credit has declined significantly.

Leo de Haan and Jan Kakes (2018) note that the losses incurred by banks after the 2007-2008 recession first affected the large banks that were oriented towards the global financial market and less so the small banks oriented towards retail, but in following years, this was reversed, and retail-oriented banks were the most affected, with the latter suffering a lot of losses, as state aid and systemic risk-mitigation measures mainly targeted large banks.

The European department of International Monetary Fund, in a study (2018) on the evolution of European bank profits over the last financial cycle, notes that banks that have

been successful in protecting profits were those who have seen a less pronounced deterioration in credit quality and an improvement in cost efficiency. These banks have aggressively reduced their assets, especially during the crisis, and have reduced their dependence on wholesale funding after the crisis. The study also notes that banks' high returns were associated with interest margins that remained generally stable throughout the financial cycle, including during the post-crisis period, but found no clear arguments for the existence of commissions and high fees charged to customers being associated with a better return after the crisis.

Finally, in another study on banking market trends and strategic options of European banks, the ZEB financial advisory firm (2018) notes that the improvement in bank returns recorded over the past few years cannot be replicated, because if this growth was recorded on the basis of non-litigious operations and the reduction of extraordinary costs, but the present and future is that of non-bank financial intermediaries ("shadow banks" and financial institutions), pension insurance companies. The study concludes that a decade after the financial crisis, the banking industry urgently needs product specialization, participation in financial platforms and mergers and acquisitions.

Finally, Bernanke (2018) believes that credit market developments deserve increased attention from economists not only to analyse the economic effects of financial crises but also to study business cycles, and that the financial crisis in 2008 was due to the panic of financial markets, which has disrupted the provision of credit.

2. Mutations in the Romanian banking system, between 2008 and 2018

The Romanian banking system, though having lost about 10% as a share of the assets in GDP, continues to be the main component of the Romanian banking system, representing three quarters. If we also add non-bank financial institutions, together with banks they represent four fifths of the financial system, in decline, considering that 10 years ago they represented more than 90% of the financial system. In fact, the resizing of the Romanian banking system can be explained mainly by the increase of private pension funds in the Romanian financial system, which ten years ago entered the financial market, only to now represent more than 7% of the Romanian financial system.

Table no. 1. Distribution of assets within the Romanian financial sector

Year	Credit institutions	Non-bank financial institutions	Insurance companies	Private pension funds	Investment funds
Dec.08*	82.8	11.18	3.95	0.24	-
Dec.09*	89.8	9.95	4.46	0.7	-
Dec.10	81.8	7.6	3.5	1	6.1
Dec.11	81.9	6.9	3.6	1.4	6.2
Dec.12	81.1	6.6	3.8	2.1	6.4
Dec.13	79.8	6.4	3.6	2.9	7.4
Dec.14	78.7	6	3.4	3.9	8
Dec.15	77.6	5.8	3.9	4.8	8
Dec.16	76.3	5.9	4.2	5.9	7.7
Dec.17	75.6	6	4.1	6.8	7.4
Mar.18	75.5	5.9	4.2	7.2	7.2
2018-2008	-7.3	-5.28	0.25	6.96	1.1

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; *) author's calculations

Hence, the first major consequence is that, in the absence of the transparency of other financial components, banks are the main financier of the economy, and any punitive

measures against them are equivalent to sanctioning the real economy, the latter lacking in funding alternatives.

A second consequence is that banks, being dominant in the financial system, will have an oligopolistic behaviour, their behaviour being relatively discretionary in relation to customers and fixing prices (interest rates on credit and deposits) to their own advantage. Hence a series of public grievances or anti-system political initiatives (in contradiction with classical economic logic), but which have affected the credibility of the Romanian banking system.

Table no. 2. Dynamics of bank assets and credit to the private sector

Year	Bank assets		Credit to the private sector		GDP	%	% credit
	Billion lei (RON)	Indicators (2008=100%	Billion lei (RON)	Indicators (2008=100%	**Billion lei (RON)**	**bank assets /GDP**	**To the private sector /GDP**
2001	30,1	9	11,8	6	116,7	25.8	10.1
2002	47,8	14	17,8	9	152,0	31.4	11.7
2003	61,7	18	30,3	15	197,4	31.3	15.3
2004	91,4	27	41	21	247,4	36.9	16.6
2005	130,3	38	59,8	30	288,9	45.1	20.7
2006	175,5	52	92,4	47	344,7	50.9	26.8
2007	260,1	77	148,2	75	416,0	62.5	35.6
2008	339,5	100	198,1	100	514,7	66.0	38.5
2009	364,5	107	199,9	101	501,1	72.7	39.9
2010	385,2	113	209,3	106	533,9	72.1	39.2
2011	392,8	116	223	113	565,1	69.5	39.5
2012	404,9	119	225,8	114	596,7	67.9	37.8
2013	408,7	120	218,5	110	637,6	64.1	34.3
2014	405,3	119	211,1	107	666,6	60.8	31.7
2015	417,1	123	217,4	110	712,6	58.5	30.5
2016	429,0	126	220,1	111	765,1	56.1	28.8
2017	460,0	135	232,6	117	856,6	53.7	27.2
2018	486,1	143	251,1	127	940,6	51.7	26.7

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

In terms of volume, the Romanian banking system has continued to grow. We can speak of an explosive growth, even. In fact, I believe that Romania is concluding its strongest growth in the size of its banking system. Thus, bank assets grew, from 2000 to the end of 2016, 18 times, from 30 billion lei to almost 500 billion lei. The growth of domestic credit to private sector in the same period is even more pronounced, 26 times, from 11 billion lei to 251 billion lei. Evidently, everything started from very low, almost insignificant, values, made by a banking system in transition and after hyperinflation in the 1990s, which had strongly depreciated bank assets. However, explosive growth was a feature of the first decade of the 2000s, because the recession, which has affected Romania since the end of 2008, has significantly calmed dynamics. Thus, after 2000 (and up to the present), banking assets grew by only 43%, while domestic credit to private sector was only 27%. Thus, in fact, the financial cycle in Romania, after 2000, has two periods, one explosive, until the crisis, and a second, after the crisis leading up to the present, reduced, under the growth of the real economy (GDP).

Table no. 3. Evolution of bank liabilities - billions lei

Indicator	dec.08	dec.09	dec.10	dec.11	dec.12	dec.13	dec.14	dec.15	dec.16	sep.17
Population deposits	82,9	97,3	104,1	112,7	122,2	129,7	138,0	146,8	163,5	171,2
Company deposits	68,5	70,4	73,3	74,5	75,1	85,9	95,3	106,6	110,8	115,2
Capital and reserves	36,1	43,8	54,8	63,5	72,7	79,3	72,8	72,6	67,5	69,1
External liabilities	104,1	96,1	103,2	104,2	93,8	83,6	71,7	64,5	50,4	45,9
Other liabilities	47,9	56,8	49,8	37,8	41,2	30,1	27,4	26,6	36,7	39,4
Total	339,5	364,5	385,2	392,8	405,0	408,7	405,3	417,0	428,9	440,8

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

Thus, if we compare the values of banking assets and domestic credit to private sector with Romania's GDP, we see that the two indicators had the highest values in 2009 (73% share of bank assets to GDP and 40% share of domestic credit to private sector to GDP), after which the values of the two GDP indicators drop (Table 2), share of banking assets to GDP reaching 52%, and the share of domestic credit to GDP, 27%. By comparison, indicators of European countries in Western Europe are almost double compared to GDP, and advanced economies in Eastern Europe have reached values equal to GDP (around 100%) for the two economic indicators.

The ten years that have passed since the financial crisis that began in Romania in 2008 also marked a change in the way banks are financed. Thus, the resources mobilized by Romanian banks increased by 30%, from 340 billion lei to 440 billion lei. The rise stems mainly from the increase in population and company deposits, bringing in 290 billion of the banks' resources, compared to only 150 billion lei, 10 years ago. The largest increases are recorded in population deposits, where the growth is more than double, and somewhat lower in the case of company deposits, where growth is approaching a doubling. The relative contribution of deposits to the formation of banks' resources, although important, is slightly more modest in relation to absolute changes. Thus, if in 2008, deposits contributed by approx. 40% of bank resources, currently they contribute more than 60%.

Table no. 4. Structure of bank liabilities (%)

Indicator	dec.08	dec.09	dec.10	dec.11	dec.12	dec.13	dec.14	dec.15	dec.16	sep.17	dec.08
Deposits contributed by individuals	24.4	26.7	27.0	28.7	30.2	31.7	34.1	35.2	38.1	38.9	39.2
Deposits contributed by companies	17.5	15.9	16.2	15.9	15.1	17.3	23.5	25.6	25.8	23.1	22.2
Capital	10.6	12.0	14.2	16.2	18.0	19.4	18.0	17.4	15.7	14.5	14.9
External liabilities	30.7	26.4	26.8	26.5	23.2	20.5	17.7	15.5	11.7	10.0	10.0
Other liabilities	16.8	19.0	15.8	12.7	13.6	11.1	6.8	6.4	8.6	13.6	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

The bank's own capital also doubled its contribution to bank resources, approx. 70 billion lei, an increase from 10% to approx. 15%.

The element that recorded a significant decrease was external liabilities, which have dropped from approx. 100 billion lei to 45 billion lei, meaning a decrease from about 30% of total bank liabilities to just 10%.

Beyond the aforementioned figures, we note an increase in the autonomy of Romanian banks, in relation to the external environment, a slight increase in the financial autonomy of banks towards non-financial creditors, but also a shift of the banking risk towards the population and companies, which have increased their contribution financing the operations of banks.

Table no. 5. Evolution of bank assets – billions lei

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018T1
Total assets	339,5	366,3	388,7	396,6	405,0	409,1	405,4	417,1	429,0	459,5	465,5
Credits to the population	99,3	100,7	102,9	105,1	104,5	103,4	102,2	108	113,3	121,9	124,8
Credits to companies	94,5	96,7	105,6	116,6	118,7	112,4	105,4	104,7	101,7	104	105,2
Claims on NBR	74,1	57,9	55,2	54,3	48,2	52,7	47	48,4	45,5	49,7	45,6
Claims on the government sector	17	46,5	61	70,2	79	80,5	85,5	89,7	93,1	98	99,2
External assets	6,8	12,5	12,4	9,1	11,3	12,3	19,1	20	24	29,4	34
Other assets	47,9	52	51,7	41,2	43,3	47,8	46,2	46,3	51,5	56,6	56,8

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

Banking assets rose by more than a third, from 340 billion lei to over 460 billion lei. Though the credits granted by banks increased as absolute values by more than 35 billion lei, in reality the banks were much more cautious. The main argument is that the share of credits in total bank assets is down from 57% to just 49%. The decrease is 5% for corporate credits, and less than 3% for credits to the population.

Table no. 6. Structure of bank assets (%)

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018T1
Credits to the population	29.2	27.5	26.5	26.5	25.8	25.3	25.2	25.9	26.4	26.5	26.8
Credits to non-financial corporations	27.8	26.4	27.2	29.4	29.3	27.5	26.0	25.1	23.7	22.6	22.6
Claims on NBR	21.8	15.8	14.2	13.7	11.9	12.9	11.6	11.6	10.6	10.8	9.8
Claims on the government sector	5.0	12.7	15.7	17.7	19.5	19.7	21.1	21.5	21.7	21.3	21.3
External assets	2.0	3.4	3.2	2.3	2.8	3.0	4.7	4.8	5.6	6.4	7.3
Other assets	14.1	14.2	13.3	10.4	10.7	11.7	11.4	11.1	12.0	12.3	12.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

In the 10 year analysed, the credit dynamics is not uniform (only an increase or decrease), that is, an evolution towards an end of the financial cycle. Thus, we can note the end of the credit growth cycle for the population in 2011, with a nominal maximum size of 105 billion lei or, in 2009, with a relative maximum of 29%. After that there are decreases by 2014 - both nominal and relative - after which growth is resumed. The corporate credit financial cycle peaks in 2011-2012, the downward trend seems to have been completed in 2017, and is three years longer than in the case of credit to the population.

Comparing corporate and population credit growth, it is noticeable that at the end of the analysed period, as at the beginning of the period, credit to the population is mostly in the banks' portfolio, while in the middle of the interval the credit to companies was the majority.

Another element decreasing in the 10 years since the beginning of the crisis is the claims on NBR, mainly the minimum required reserves, the value of which has fallen

significantly. Thus, the assets held at NBR are down to about 30 billion lei, reaching less than 10%, as a share of total bank assets, compared to about 22% at the beginning of the analysed period.

The release of funds, due to the decrease in claims on NBR, but also the surplus of resources attracted by commercial banks has found a profitable placement in claims on the state. Thus, government claims rose from 17 billion lei in 2008 to about 100 lei billion in 2018, that is, an increase of approx. 6 times. Romanian banks immobilized 21% of their assets in government claims in 2018, compared to 5% in 2008.

Another sector that has consolidated its position in bank placements is foreign assets, with a 5-fold increase, from less than 7 billion lei in 2008 to over 45 billion lei in 2018, 7% of bank assets.

Previous developments indicate a decrease in banks' interest in Romania's real economy, probably due to the increase in its risk. Also, Romanian banks preferred lower, but risk-free, state-funded investments for public debt financing and focused on placements outside Romania. Last but not least, the decrease in the liquidity of our banks due to the decrease in the claims on NBR must also be noted.

We can also create an overview of the active banks in Romania after the operations they are involved in. As such:

- Credit to the population is preferred by large and medium-sized banks, and corporate credit is preferred by medium-sized banks and foreign bank branches;
- Claims on the state are more common for large banks and small banks;
- Medium banks and branches of foreign banks have the most NBR liquidities;
- The majority of deposits from the population are in large banks and small banks;
- Enterprise deposits are preferred by large banks and branches of foreign banks;
- Large and medium-sized banks are the best capitalized;
- Medium banks and branches of foreign banks have the largest external operations, both in terms of resources and placements.

Table no. 7. Structure of bank assets and liabilities by bank categories (IX 2017)

Indicator	Bank sector	Of which			
		Large banks	Medium banks	Small banks	Branches of foreign banks
Credit, population	27,2	28,0	29,7	19,6	21,6
Credit, non-financial corporations	24,1	22,2	28,3	25,1	27,3
Claims on public administration	22,1	26,4	14,4	24,2	9,6
Claims on NBR	6,8	6,3	8,0	6,9	7,7
External assets	7,2	5,8	7,9	2,4	15,4
Other assets	12,6	11,3	11,7	21,8	18,4
Deposits, population	38,8	42,6	29,3	52,2	28,7
Deposits, companies	22,5	22,9	19,1	10,7	29,4
Capital and reserves	15,7	16,9	15,9	15,1	9,2
External liabilities	10,4	7,0	19,2	10,3	15,3
Other liabilities	12,6	10,6	16,5	11,7	17,4

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

If the banking system is the main component of the Romanian financial system, we should also see whether banks and the loans granted by them have an impact on financing the wealth of the population or occupy an important place in financing companies.

Thus, if we compare the bank credit to the population with the net wealth of the population, we will observe a continuous increase in the share of credit, but with all the growth, they are only able to finance 17% of the population's wealth.

Table no. 8. Importance of bank credit for net wealth of the population

Year	Net financial assets	Real estate assets	Net wealth of the population	Bank credit to the population	Credit to the population/net wealth (%)	Credit to the population/financial assets (%)	Credit for real estate investment to the population	Credit to the population/ net financial assets (%)
2002	50,1	219,6	663,5	2,1	0.3	4.2	-	-
2003	60,3	375,6	844,6	7,5	0.9	12.4	-	-
2004	88,6	536,4	929,4	11,9	1.3	13.4	-	-
2005	121,8	772,3	1.080,4	21,4	2.0	17.5	-	-
2006	177,9	1.007,0	1.223,2	40,2	3.3	22.6	7,9	0.8
2007	252,3	1.572,4	1.550,3	71,5	4.6	28.3	14,2	0.9
2008	187,7	1.859,6	1.367,9	99,2	7.3	52.9	20,9	1.1
2009	126,0	1.360,9	965,1	100,2	10.4	79.5	24,2	1.8
2010	139,5	1.206,1	889,0	102,1	11.5	73.2	28,9	2.4
2011	155,2	1.118,6	835,7	104,3	12.5	67.2	33,4	3.0
2012	207,3	1.249,1	919,8	104,5	11.4	50.4	37,1	3.0
2013	295,8	1.196,3	914,0	103,2	11.3	34.9	40,8	3.4
2014	332,0	1.181,4	885,6	102,1	11.5	30.8	44,6	3.8
2015	362,7	1.219,3	844,9	108,0	12.8	29.8	52,0	4.3
2016	386,9	1.295,4	795,2	113,0	14.2	29.2	58,4	4.5
2017	415,4	1.427,7	746,1	121,8	16.3	29.3	66,2	4.6
2018T2	424,2	1.504,5	732,0	129,1	17.6	30.4	70,3	4.7

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

If we compare the real estate assets with the credit for real estate investment to the population, we will notice that their share is less than 5% due to the increase of credit for this purpose granted to individuals. Finally, from comparing bank credit to the population with the financial assets owned by the population, we see an increase in the ratio to almost 80% in 2009, after which the ratio falls to 30%, against the much higher dynamic of net assets against bank credit to the population.

Table no. 9. The importance of bank credit for companies

Indicators	2016	2017	2016	2017
	Billion lei		%	
Capital (does not include advance earnings)	402,1	453,3	30,4	32,2
Provisions and advance earnings	95,2	95,5	7,2	6,8
Short-term external financial debt	3,5	2,6	0,3	0,2
Medium and long-term external financial debt	33,5	28,9	2,5	2,1
Domestic credit in lei (banks and nonbank financial institutions)	52,1	57,5	3,9	4,1
Domestic credit in foreign currency (banks and nonbank financial institutions)	57,6	57,8	4,4	4,1
Other debts, of which	679,8	710,4	51,4	50,5
Commercial debt	248,6	273,3	18,8	19,4
Debt to employees	8,2	16,6	0,6	1,2
Debt to state	61,3	61,9	4,6	4,4
Debts to affiliated entities	50,9	58,3	3,8	4,1
Debt to shareholders	115,5	121,4	8,7	8,6
Other debts	195,3	178,9	14,7	12,7
Total liabilities	1.323,9	1.405,8	100,0	100,0

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

The significance of these values is that (1) bank credit in general and for real estate investment have a modest contribution to the formation of the assets held by the population, few possessions of the population originated in the credit granted by banks, (2) bank credit is used only by a small sample of individuals, having a modest magnitude in population financing, (3) the population possesses sufficient real estate or other assets to secure bank credit, and (4) population exposures per banks, globally, can be quickly quenched through the scope of their financial assets.

If the population is not an important client of banks in terms of the loans provided by the latter, neither do companies consider Romanian banks a partner. Thus, if we refer to the contribution of the bank credit granted by Romanian banks to companies, we will see that it represents only 8% of the enterprises' resources. In fact, financing from professionals in the financial system is not a necessity, proof that financing from external private sources does not contribute significantly to the financing of Romanian enterprises, the latter accounting for less than 3%. The reason why Romanian companies do not need bank financing is that they do not pay their current debts, to suppliers, to public budgets, employees, they postpone payment terms or finance their businesses under more lenient conditions or borrow from other entities with which they have connections. All these debts contribute more than half to the financing companies. Last but not least, it should be noted that this financial structure, with many unpaid debts to third parties and a reduced capitalization (of only 30%), makes many of the Romanian companies not even be accepted by banks as potential clients.

Recent years indicate a re-launch of the credit process, focused on credit to the population, and, given how this represented one of the channels through which the financial crisis of 2008 entered Romania, analyses that investigate the similarities between past and present developments are justified. An analysis of the dynamic of new credit provided by Romanian banks to the population indeed indicates a recovery in terms of credit to the population, values being close to those recorded in 2008 for consumer loans and exceeding those of 2008 for mortgage loans. It is best to observe this by studying the monthly rate at which the two types of credit are granted. Thus, in the case of consumer loans, the monthly rate is 20% lower than in 2008, and in the case of real estate investment loans, the past rate is exceeded by almost a third. At the same time, if the analysis considers the monthly volumes of new loans granted by banks, we note that the value in 2008 has been reached in September 2018. While it is true that this pace does not necessarily mean a crisis, it does indicate an overheating of the economy.

Table no. 10. Dynamics of new credit and loan stocks to the population

Year	New credit to the population (billion lei)			Monthly averages of new credit for the population (billions lei)			GDP (billions lei, current prices)	New credit/ GDP (%)	Credit balance for the population		credit balance/ new credit to the population
	consumer	mortgage	Total	consumer	mortgage	Total			Billion lei	% GDP	
2008	190,7	107,5	298,2	15,9	9,0	24,9	514,7	57,9	99,2	19,3	33,3
2009	109,7	64,3	174,0	9,1	5,4	14,5	501,1	34,7	100,2	20,0	57,6
2010	69,5	67,6	137,0	5,8	5,6	11,4	533,9	25,7	102,1	19,1	74,5
2011	97,2	66,6	163,7	8,1	5,5	13,6	565,1	29	104,3	18,5	63,7
2012	80,5	75,8	156,3	6,7	6,3	13,0	596,7	26,2	104,5	17,5	66,9
2013	62,0	80,5	142,5	5,2	6,7	11,9	637,6	22,3	103,2	16,2	72,4
2014	88,0	76,1	164,1	7,3	6,3	13,7	666,6	24,6	102,1	15,3	62,2
2015	96,3	94,6	190,9	8,0	7,9	15,9	712,6	26,8	108	15,2	56,6
2016	114,9	121,8	236,7	9,6	10,1	19,7	765,1	30,9	113	14,8	47,7

2017	135,0	125,5	260,4	11,2	10,5	21,7	856,6	30,4	121,8	14,2	46,8
2018IX	109,0	112,6	221,6	12,1	12,5	24,6	659,7	33,6	129,1	19,6	58,3

Source: NBR, Financial Stability Reports 2008-2018, sec. Statistics / Data section; author's calculations

Apart from the changing percentage of the two types of credit, consumer and mortgage, respectively, between 2008 and 2018, we can also see an increase in the credit granting period. Thus, if in 2008 only 33 of the credits were still in the balance at the end of the year, in 2018 this ratio would be closer to 60% (obviously the first years after 2008 must be omitted, when the crisis began, when banks retired many short-term credits and thus the ratio between the credit stock and new loans increased).

3. Conclusion

Banks in Romania, in the absence of the transparency of other financial components, are the main financier of the economy, and any punitive measures against them are equivalent to sanctioning the real economy, the latter lacking in funding alternatives. A second consequence is that banks, being dominant in the financial system, will have an oligopolistic behaviour, their behaviour being relatively discretionary in relation to customers and fixing prices (interest rates on credit and deposits) to their own advantage. Hence a series of public grievances or anti-system political initiatives (in contradiction with classical economic logic), but which have affected the credibility of the Romanian banking system.

Explosive growth was a feature of the first decade of the 2000s, because the recession, which has affected Romania since the end of 2008, has significantly calmed dynamics. In fact, the financial cycle in Romania, after 2000, has two periods, one explosive, until the crisis, and a second, after the crisis leading up to the present, reduced, under the growth of the real economy (GDP).

Development in regards to the financing of banks shows an increase in the autonomy of Romanian banks, in relation to the external environment, a slight increase in the financial autonomy of banks towards non-financial creditors, but also a shift of the banking risk towards the population and companies, which have increased their contribution financing the operations of banks.

Active operation dynamics indicate a decrease in banks' interest in Romania's real economy, probably due to the increase in its risk. Also, Romanian banks preferred lower, but risk-free, state-funded investments for public debt financing and focused on placements outside Romania. Last but not least, the decrease in the liquidity of our banks due to the decrease in the claims on NBR must also be noted.

If the population is not an important client of banks in terms of the loans provided by the latter, neither do companies consider Romanian banks a partner, resorting to their financing in modest proportions.

Apart from the changing percentage of the two types of credit, consumer and mortgage, respectively, between 2008 and 2018, we can also see an increase in the credit granting period. Thus, if in 2008 only 33 of the credits were still in the balance at the end of the year, in 2018 this ratio would be closer to 60%.

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REGIONAL ASPECT OF LABOUR MARKET: THE CASE OF MOLDOVA

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Abstract: *The problem of population economic activity in the Republic of Moldova is actual in the conditions of population decline, population ageing and labour migration processes. The economic activity rate of work age population decreased by 2.1 percentage points(p.p.), and the employment rate, respectively, by 2.0 p.p., while the number of employed population decreased by 43.5 thousand people. At the same time, it should be noted that the share of employed population in economically active has practically not changed and amounts to 96%, that is, the average unemployment rate for this period varied between 4-5%. However, if we analyze the involvement of work age population in the regional aspect, then there are differences in these indicators, which is associated with the possibility of being employed, the existing socio-economic infrastructure, age-sex structure of population and other factors. Therefore, the evaluation of demo-socio-economic processes impact on labour market formation has of scientific and practical importance for determining the main strategic directions of stable long-term development of the country, which determines the actuality of topic. The purpose of research is to analyze the regional characteristics of labour market in conditions of changes in age-sex structure of labour market, the motives for the presence of non-working population that is not involved in labour market for any reason, including the youth of NEET, employment in urban-rural aspect, including the tendencies in labour market changes mun. Chisinau in regional aspect (mun. Chisinau, Center, South, North). Such methods as analysis, synthesis, induction, deduction, grouping, and a systematic approach will be used in the process of research. As a result of research, recommendations have been made to improve the efficiency of employment policies of work age population, which can be used by public officials, as well as students, doctoral students, and scientific researchers.*

Keywords: *labour market, employment, work age and economically active population, indicators of population participation in economic activity (15 years and more), underutilization of labour force.*
JEL Classification: *J21, O18.*

1. Introduction

One of the high-priority objective in any state is economic growth stimulating and maintaining a stable and optimal level necessary for the socio-economic development of the country. Economic growth implies quantitative and qualitative changes associated with production, including the functioning and development of a competitive labour market both in the country as a whole and in its individual regions. At the same time, the imbalance in economic and social development of regions impacts on formation and functioning of both local and national labour markets. Despite the fact that mun. Chisinau is a key center characterized by a higher level of economic development, social infrastructure, capital investments; the existence of professional personnel and workplaces compared to other territories, nevertheless this does not exclude the presence of serious problems in labour force applying and labour market development. Changes in economic and social life of cities and urban centers of the country, the destruction of socio-economic infrastructure as a result of structural reforms, the impact of economic crises and other external and internal factors, led to the deformation of local labour force markets, which affected on labour market mun. Chisinau. It is confirmed by data from the analysis of main indicators characterizing the presence and use of working population in labour market.

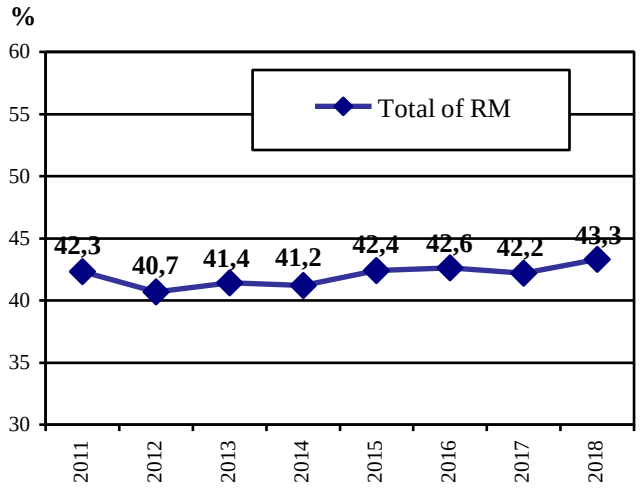
2. Data and methodology

The research approach was based on date of National Bureau of Statistics of the Republic of Moldova for the period 2011-2018.

3. Results

Effective using of working-age population in labour market is one of indicators of competitiveness of a country's economy and the opportunities for its innovative development. One of the common indicators in this area is the economic activity rate with differs by regional aspect (Fig. no. 1).

a) total of RM



b) by region

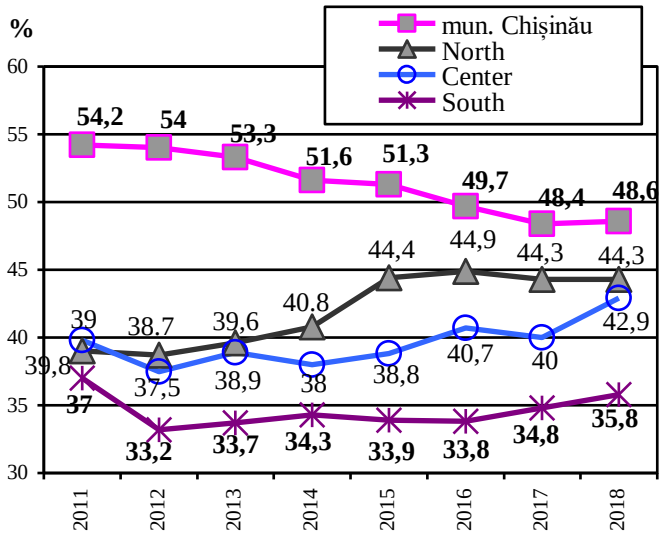


Figure 1. Economic activity rate of population (15+) total, by region, 2011-2018, %
Source: elaborated by the authors on the basis of NBS RM data, www.statistica.md

The analysis of economic activity rate shows that in 2018 this indicator tended to increase compared to the previous year both in the Republic of Moldova as a whole (by 1.1 pp) and in regions, with the highest growth recorded in Central Region (by 2.9 pp), but in the Central and Southern regions the values of the above indicator are lower than the national average. The economic activity rate by gender is presented in Table no. 1.

Table 1. The economic activity rate of population (15 years +) by region, by gender, 2011-2018, %

	2011	2012	2013	2014	2015	2016	2017	2018
Male								
Total	45.6	43.5	44.5	44.1	45.1	45.4	45.3	45.8
Mun. Chișinău	63.3	62.3	62.3	59.5	58.9	58.6	55.9	55.1
North	40.7	39.6	41.4	42.8	45.6	46.0	46.3	45.1
Center	42.2	39.0	41.0	40.3	41.0	42.7	42.3	44.8
South	38.9	35.4	34.6	35.1	35.6	34.3	36.7	38.0
Female								
Total	39.3	38.2	38.6	38.6	39.9	40.1	39.4	41.0
Mun. Chișinău	46.8	46.9	45.9	45.1	45.3	42.6	42.5	43.3
North	37.6	37.9	37.9	39.1	43.3	44.0	42.4	43.7
Center	37.7	37.6	36.1	36.9	35.9	36.7	38.7	37.9
South	35.1	31.0	32.9	33.6	32.3	33.2	33.0	33.7

Source: elaborated by the authors on the basis of NBS RM data, www.statistica.md

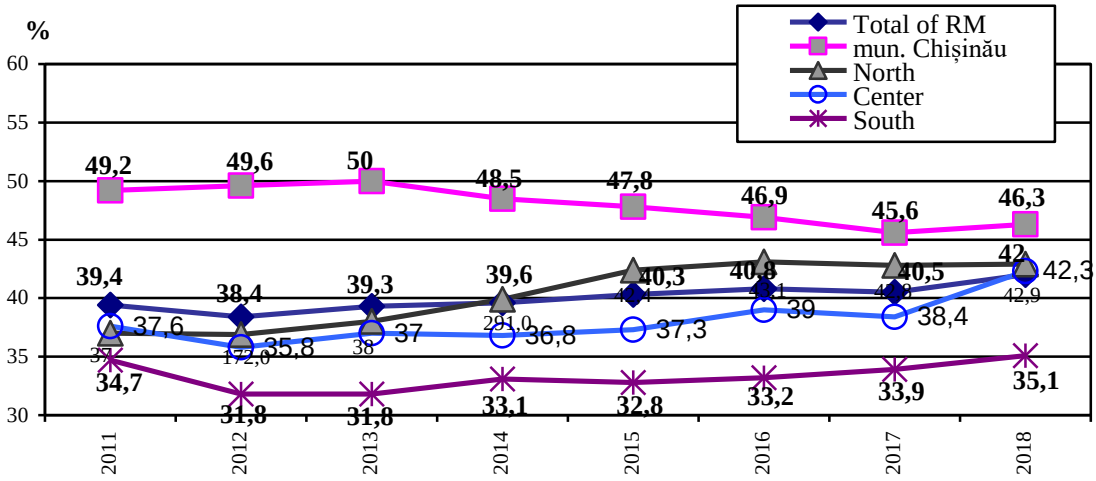
Differentiation of economic activity rate between men and women in regional aspect is maintained in spite of increase in economic activity rate among women in the national average. For example, by mun. Chisinau the difference is 11,8 percentage points (2018). The lowest economic activity rate in both men and women is in Southern region, in 2018 men's economic activity was 4.3 pp. higher.

According to the National Bureau of Statistics data (Labour force in the Republic of Moldova: employment and unemployment, 2018 [1]) the economic activity rate in rural areas was 43.6% and in urban areas 42.8%, and by age categories, for example, in the age category 15-29 years old – 30.2%, 15-64 years old (working age in the European Union countries according to Eurostat methodology) – 47.6%, and on average among the working age population (16-58 years old women and 16-62 years and 8 months men according to the current legislation) – 49,7%.

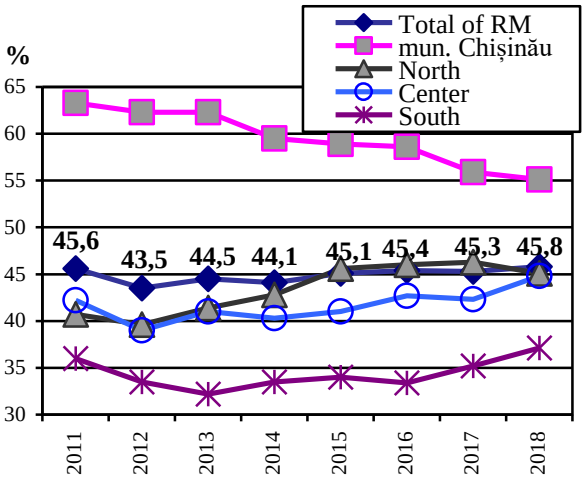
4. Employed population

The economically active population includes both the employed and the unemployed, so to assess their involvement in labour, it is necessary to analyze the average employment rate in the Republic of Moldova and by region, as well as to evaluate the change of the above indicator by gender (Fig. no. 2).

a) by region



b) male



c) female

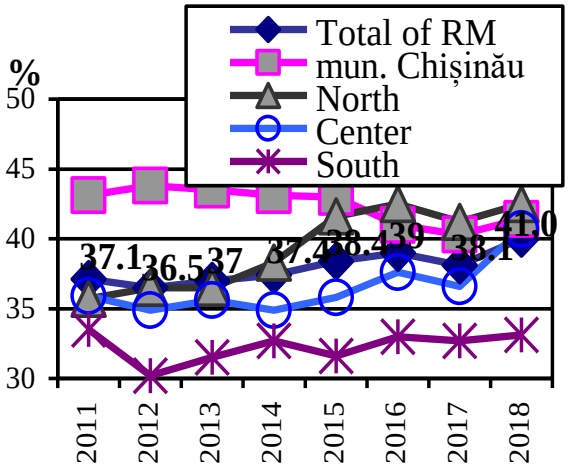


Figure 2. Characteristics of employment rate of population (15+) by region, by region, 2011-2018, %

Source: elaborated by the authors on the basis of NBS RM data, www.statistica.md

In contrast to the indicator of economic activity rate, it can be noted that the employment rate has tended to increase, especially over the last 3-4 years. In 2018, the highest values of employment rate indicator were recorded in mun. Chisinau (46.3%), as well as in the Northern Region (42.9%) and the Central Region (42.6%), with the republican average 42.0%, below the average the employment rate remains in the Southern Region (35.1%, which is 6.9 pp lower than the national average). If we analyze employment by gender, then employment of men exceeds the employment for women, including both the national average (about 4-5 pp) and in the context of regions where this differentiation is more pronounced: for example in 2018, this differentiation was most acutely manifested in the Chisinau municipality, where the employment rate for men (52.2%) exceeded the employment rate for women by 10,8 pp (41.4%), and in individual regions this difference is not so significant (Fig. 2, b) and c)).

Population employment is depended from many factors, including the socio-economic development of the region. The distribution of employed population by economic activity types is presented in Table no. 2.

Table 2. Distribution of employed population by economic activity in 2018, % of total number of employed population

	Total	**mun. Chişinău**	**North**	**Center**	**South**
Total	100.0	100.0	100.0	100.0	100.0
Agriculture, forestry and fishing	36.1	1.9	48.9	47.6	45.9
Industry	11.8	14.5	12.3	9.8	10.1
Construction	4.8	5.8	3.2	6.1	3.7
Wholesale and retail trade, Hotels and restaurants	15.5	28.2	11.2	11.0	11.9
Transport and communications	5.8	12.9	3.3	3.1	3.8
Public administration, Education, Health and social work	18.4	19.6	17.0	17.6	20.3
Other activites	7.7	17.1	4.1	4.8	4.3

Source: elaborated by the authors on the basis of his own calculations based on NBS RM data, www.statistica.md

From the analysis of above data on the distribution of employed population, it follows that 36,1% are employed in agricultural sector, and 49% of them (or 17,9% of all employed) are persons engaged in the production of agricultural products intended solely for their own consumption. In mun. Chisinau, the proportion of employed people in above sector is insignificant (only 1.9%), it is characterized by employment in economic sectors: "Wholesale and retail trade, hotels and restaurants" (28.2%), "Public administration, education, health and social work" (19.6%), "Industry" (14.5 %), "Transport and communications" (12.9%). The specifics of region development is reflected in population employment in different directions of economic activity, almost 46-49% of employed population is in agricultural sector, 11-12% - "Wholesale and retail trade, Hotels and restaurants" and 17-20% in "Public administration, Education, Health and social work".

5. Unemployment

Analyzing the indicators of economic activity and employment rate of population (15+), it is impossible not to touch upon such an indicator as unemployment rate. The analysis of unemployment rate dynamics show the tendency to reduce it is a clearly pronounced. At the national level, this indicator in 2018 was 3.0% or 1.1 pp. less than in 2017, including among men, the unemployment rate was 3.5% and among women 2.5%, in urban areas – 4.5% and in rural areas by 2.7 pp below or 1.8%. Regarding age categories, it can be noted that among the youth in the age group 15-24 years old, the considered indicator was the highest (7.4%), and in the 15-29 year old age group by 1.8 pp lower or 5.6%. Regionally, the unemployment rate by region is presented in Table no. 3.

Table 3. The unemployment rate of population (15 years +) by region, 2011-2018, %

	2011	2012	2013	2014	2015	2016	2017	2018
RM								
Total	**6.7**	**5.6**	**5.1**	**3.9**	**4.9**	**4.2**	**4.1**	**3.0**
Mun. Chișinău	9.3	8.2	6.3	6.0	7.0	5.7	5.8	4.8
North	5.2	4.6	3.9	2.4	4.5	4.0	3.4	3.3
Center	5.7	4.5	4.9	3.2	4.0	4.2	4.0	1.5
South	6.2	4.1	5.6	3.6	3.4	1.8	2.6	2.1
Male								
Total	**7.7**	**6.8**	**6.0**	**4.6**	**6.2**	**5.5**	**4.8**	**3.5**
Mun. Chișinău	10.6	9.5	7.3	7.4	8.8	7.5	6.5	5.3
North	5.5	5.5	4.0	2.8	5.3	4.9	3.9	3.9
Center	6.8	5.7	6.2	3.5	5.4	5.4	4.7	1.9
South	7.6	5.5	6.9	4.6	4.4	2.8	4.0	2.4
Female								
Total	**5.6**	**4.3**	**4.1**	**3.1**	**3.6**	**2.9**	**3.3**	**2.5**
Mun. Chișinău	7.9	6.6	5.1	4.6	5.1	3.7	5.1	4.3
North	5.0	3.8	3.7	2.1	3.8	3.2	3.0	2.6
Center	4.4	3.2	3.6	2.8	2.6	3.0	3.4	1.1
South	4.7	2.7	4.2	2.7	2.3	0.8	1.1	1.7

Source: elaborated by the authors on the basis of NBS RM data, www.statistica.md

Despite the fact that in the whole country the average unemployment rate in the country tended to decrease, its comparative analysis by region shows that unemployment in the Sud region is lower (by 0.9 percentage points in 2018, a decrease in compared with 2011 was 4.1 pp), the highest unemployment rate is typical for mun. Chișinău (1.8 pp higher than the national average). The assessment of unemployment rate by gender show, that it is higher among men than women, that's, in regional aspect, the situation is the same as in the country on average, at the same time, this also related to the positive trend of its decline.

6. Characteristics of economically inactive population (15 years and more)

Analyzing the labour market, namely the population 15 years and more (15+), clearly allocates two of its main categories:

- *economically active population* (this is employed population and unemployed);
- *economically inactive population* (population that for some motives/reasons is not involved in economic activity in labour market, including pupils, students, pensioners, migrant workers, housewives, etc.).

These categories are important in order to ensure labour market labour(labour force), being a kind of reserve, as well as a challenge to the policies for training, vocational training and involvement in labour market.

Thus, an important indicator of labour market is not only employment, but also the economic inactivity rate of population 15+, which is a consequence of structural changes in economy, migration processes, demographic changes, and ongoing socio-economic policy.

Over the past 8 years, the share of the economically inactive population exceeded the 50 percent level, the peak of this phenomenon was observed in 2012 (59.3%) and 2014 (58.8%), in 2018 it decreased to 56.7%, nevertheless remaining high enough. In terms of regional aspect, the main share of inactive population, or up to 60%, is concentrated in the Northern and Central regions. The number of economically inactive population by 2018 in mun. Chișinău increased in 2018 by 14.3%, simultaneously with the tendency to increase its share in total population of country's population of this category (from 17.5% to 20.9%

or 3.4 pp), in the South region the number of economically inactive population by 2018 decreased by 4.8% compared to 2011, which, however, did not lead to significant changes in share of region in total population (for the analyzed period the change interval was [22.6% -21.3%]).

Table 4. Economic inactivity rate by zone, %

	2011	2012	2013	2014	2015	2016	2017	2018
Total RM	**57.7**	**59.3**	**58.6**	**58.8**	**57.6**	**57.4**	**57.8**	**56.7**
Mun. Chișinău	45.8	46.0	46.7	48.4	48.7	50.3	51.6	51.4
North	61.0	61.3	60.4	59.2	55.6	55.1	55.7	55.7
Center	60.2	62.5	61.1	62.0	61.2	59.3	60.0	57.1
South	63.0	66.8	66.3	65.7	66.1	66.2	65.2	64.2

Source: elaborated by the authors on the basis of NBS RM data, www.statistica.md

Table 5. Share of economic inactivity population by zone, %

	2011	2012	2013	2014	2015	2016	2017	2018
Total RM	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Mun. Chișinău	17.5	18.1	18.9	17.9	19.5	20.2	20.8	20.9
North	30.5	30.9	29.3	31.4	28.0	27.9	27.9	28.5
Center	30.0	29.5	29.9	29.4	30.1	29.3	29.4	28.7
South	22.0	21.5	21.9	21.3	22.5	22.6	21.9	21.9

Source: author's calculations based on NBS RM data, www.statistica.md

7. Inactive population

The main reason for the economic (up to 80% according to the LFS NBS) inactivity of population is the lack of desire or inability to be employed in labour market, including due to the lack of labour migration. The share of inactive population decreases in the North and in the Center, increasing in mun. Chișinău (Table no. 6.).

Table 6. Isn't job search and isn't available to work by zone, %

	2011	2012	2013	2014	2015	2016	2017	2018
Total RM	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Mun. Chișinău	19.67	20.29	21,17	19.81	21.78	22.88	23.10	23.32
North	30.43	31.04	29,17	31.51	27.17	27.50	28.05	28.40
Center	29.25	28.64	29,13	28.88	30.03	28.79	28.13	27.60
South	20.65	20.03	20,53	19.80	21.02	20.83	20.72	20.68

Source: author's calculations based on NBS RM data, www.statistica.md

The objective reasons for inactivity of population 15+ include the categories of students, pupils, pensioners, housewives and another situation (Table no. 7). The total number of students and pupils category has decreased by 26.2% by 2018 compared with 2011 in the whole country. The share of population in the retirement age, having reached the maximum value in 2015 (621,3 thousand people or 45.3% in the considered category of population), decreased by 3.9% by 2018, however, its share remains at the level of 45.2% in the category of economically inactive population due to "Isn't job search and isn't available to work".

Table 7. Isn't job search and isn't available to work by status, 2011-2018, %

	2011	2012	2013	2014	2015	2016	2017	2018
Total RM	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Pupils, students	23.8	22.8	20.9	24.8	19.8	19.8	18.7	18.5
Pensioner	42.7	43.8	43.7	42.5	45.3	45.3	44.6	45.2
Housewives	12.2	13.2	13.5	12.1	13.4	13.8	14.1	14.1
Another situation	21.3	20.2	21.9	20.6	21.5	21.1	22.6	22.2

Source: author's calculations based on NBS RM data, www.statistica.md

The change in age structure of population towards the older age groups, as a .of the process of demographic ageing of population affected almost all regions, including the mun. Chișinău, its share in total number of pensioners increased from 20.5% in 2011 to 25.6% in 2018 or by 5.1 pp. However, despite the fact that the ageing process has affected the North region to the greatest extent, the number of pensioners has been decreasing since 2014 (in 2014, the number increased by 4.7 % compared to 2011, and in 2018 decreased by 19.2% compared with 2014. Including over the past 4 years, the share of pensioners remains at the level of up to 28% of their total number).

Table 8. Isn't job search and isn't available to work by pensioners by zone, 2011-2018, %

	2011	2012	2013	2014	2015	2016	2017	2018
Total RM	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Mun. Chișinău	20.54	21.73	24.04	19.66	25.14	26.11	26.60	25.58
North	32.75	32.82	30.49	35.50	27.84	27.89	27.00	27.66
Center	27.00	26.59	27.25	25.92	27.76	25.88	26.19	26.50
South	19.71	18.85	18.21	18.93	19.25	20.11	20.19	20.24

Source: author's calculations based on NBS RM data, www.statistica.md

8. Conclusions

The realized analysis of economic activity and employment of population based on the use of the results of the household labor force survey allows to identify the following conclusions:

- Analysis of economic activity and employment based on the use of labour force and household surveys suggests that structural and any other transformational changes in economy are accompanied by changes in the distribution/redistribution of population (15 and more) by region, sector, and labour migration processes.
- The decrease in public investment in long-term tangible assets, the predominant share of private capital, unsustainable economic growth, changes in production and social infrastructure, the influence of external factors and external vulnerability of the Republic of Moldova, all this could not but affect the situation in national and local labour markets, including employment of population (15+).
- Analyzing the tendencies that have occurred in labour market in the distribution and use of employed population, as a result of the ongoing processes in the socio-economic sphere, under the influence of internal and external factors and political instability, it is necessary to note the growth of employed population in the service sector, as well as the increase in the share of employed population in agriculture, including the population employed in households that produce products for their own consumption (especially in connection with economic and political both

internal and external, a sharp increase is typical for 2015-2016), and in 2018 people engaged in production for their own consumption accounted for 49% of the population employed in the agricultural sector.

Based on the above, in order to improve the situation on labour market, as well as to increase the level and quality of working-age population employment in regional aspect, the following is proposed:

- the change in country's economic development model with the prevailing investments in sphere of education and science, the development of programs for territorial (regional, local) socio-economic development and the distribution of productive forces of the Republic of Moldova for short and medium term;
- promotion of socio-economic policies that ensure stable economic growth based on attracting foreign investment and creating new work places as the basis for increasing productive employment of working-age population, creates conditions for the redistribution of working-age population between economic activities, sectors (from low-productivity - agricultural activities in high-performance) and regions;
- evaluation of employment, with a view to a more complete analysis of labour market, based on using of comparative indicators in national and in individual regions average, by gender aspect, by economic activity, by separate socio-demographic groups;
- to reactualize policies that ensure labour market flexibility, including a set of provisions of the Labour Code of the Republic of Moldova (admission / dismissal / payment, provision of benefits, perfecting labour contracts, investment stimulation in training, retraining, improving skills and creating new work places etc.), corresponding to realities of market relations.

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IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT – PRIORITY FOR THE STATES OF THE WORLD

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Abstract: *In the current context in which most states of the world register economic growth and the economic development process is now very desired because it highlights not only the quantitative evolution of an economy, but also the qualitative and structural changes, a new challenge rises: implementation of sustainable development. The evolution of humanity, the spectacular industrialization over the last decades and the focus put on the growing satisfaction of the needs of a growing global population, have determined the world's states and international bodies to realize that the environmental situation is increasingly dramatic. The exploitation of the planet's resources and the extremely low regeneration capacity of many of them creates an unparalleled situation. Mankind is facing a new challenge, even if the technological progress, innovation, computerization, etc. have led to new backup solutions, world's states have to realize that if they do not focus on future developments on environmental protection, the future is uncertain.*

Key words: *environment, economic development, sustainable development, economical growth.*
JEL Classification: *F64, O10.*

1. Introduction

Sustainable development has to satisfy current needs, without compromising the possibility of future generations to satisfy their own needs. The concept of sustainable development implies the compatibility of four systems:economic, human, environmental and technological. These four systems will become compatible only if the strategy regarding sustainable development includes, as an indispensable element, simultaneous progress of the four systems. Sustainability, as an equilibrum between economic growth and environmental protection, requires a change in current economic policy in order to increase the importance of social, food and environmental component.

2. Sustainable development – priority perspective for the world's states

The concept of sustainable development begun over 40 years ago as a response to environmental problems and natural resources crisis. After the Second World War, as a result of the way of usage of the development of the factors of production, the premises of a grave ecological imbalance have accumulated at an extremely fast pace. From the first moment when the natural environment could not absorb the shocks from human intervention, an ecological crisis broke out. It was for the first time in history that mankind faced such a phenomenon, vast yet profound, generated by his own activity.

A series of events have had a lead role in environmental protection and sustainable development fields.

The Stockholm Conference on Environment in 1972 is the moment in which it is brought out that human activities contribute to environmental damage, which endangers his very own future.

Several years later, in 1983, the World Commission for Environment and Development, lead by Brundtland begins it's activity, after a resolution adopted by the United Nations General Assembly.

In 1987, one year after the catastrophe that happened in Chernobyl, the so-called Brundtland Report appears, which gives the most cited definition of sustainable development.

Respect for the requirements of sustainable development requires social, political, economic, demographic and technical solutions.

The term of sustainable development started to become very well known after the United Nations Environment and Development Conference, held by the UN in Rio de Janeiro in 1992 known as the „Earth Summit", attended by representatives of aproximately 170 countries.

Agenda 21 or the Agenda for sustainable development – a plan to support it, was then developed.

In 2002, the Summit on sustainable development, the second Earth Summit, took place in Johannesburg.

At the same time, sustainable development has become an objective for the European Union as well, in 2001 the European Union's Sustainable Development Strategy was adopted.

In June 2012 another Earth Summit takes place in Rio de Janeiro.

Despite Earth Summits, practical results have not been reached, mankind facing a major environmental problem, along with a lack of social equity and inequality of opportunity.

In 2015, Agenda 2030 was adopted at the UN Summit in New York. Through this UN document it has provided a universal agenda with clear, quantifiable objectives. Agenda 2030 includes a set of 17 Sustainable Development Objectives and an action plan over the next 15 years, towards eradication of extreme poverty, inequalities combat, injustice and protection of the planet by 2030.

Sustainable Development Goals, according to the UN, are:

- Eradicate poverty in all forms and in any context;
- Eradicate hunger, ensure food security, improve nutrition and promote sustainable agriculture;
- Ensure a healthy life and promote the well being of all, at any age;
- Guaranteed quality education and promote lifelong learning opportunities for all;
- Achieve gender equality and empower all women;
- Ensure availability and durable management of water and sanitation for all;
- Ensure access to affordable, safe, sustainable energy sources for all;
- Promote sustainable economical growth, sustainable and open to all, full and productive employment and decent work for all;
- Build a sustainable infrastructure, promote sustainable industrialization and encourage innovation at all times;
- Reduce inequalities between and inside countries;
- Development of cities and human settlements that will be open to everyone, safe, resilient and sustainable;
- Ensure sustainable consumption and production patterns;
- Take urgent action to combat climate change and its impact;
- Conservation and sustainable usages of oceans, seas and marine resources for a more sustainable development;
- Protect, restore and promote the sustainable use of terrestrial ecosystems, sustainable forest management, desertification combat, stopping and repairing soil degradation and stopping biodiveristy loss;
- Promote peaceful and inclusive societies for sustainable development, justice for all, creation of effective, responsible and inclusive institutions at all levels;
- Revitalize and strengthen the means of implementation and partnership for sustainable development;

Figure nr. 1. Sustainable Development Goals

Source: http://futureearth.org/future-earth-sustainable-development-goals [Accessed 7 April 2019]

Since the development of Agenda 21, the UN has requested that the countries and international communities develop sustainable development indicators. These indicators are necessary in order to implement the concept of sustainable development and to help decision-makers at all levels to adopt solid sustainable development policies at a national level.

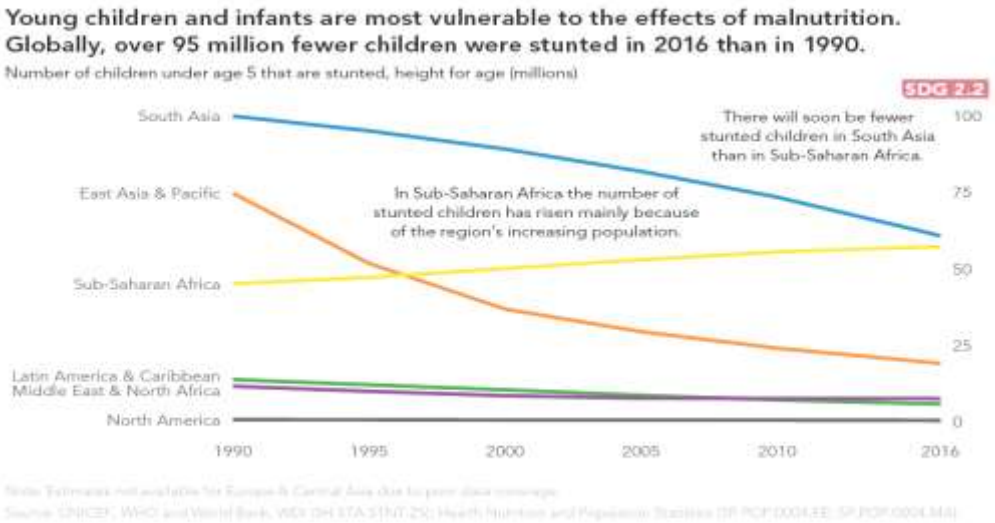
Global indicators were adopted by the UN General Assembly later, on July 6, 2017 and are included in the Resolution adopted by the General Assembly regarding the activity of the Statistical Commission on Agenda 2030 for Sustainable Development. Development experts estimate that a total of $1 billion dollars a year will be necessary to allow 77 of the world's low income countries to recover and introduce statistical systems capable of measuring sustainable development indicators.

The World Bank launched in 2018 Atlas of Sustainable Development Goals, to highlight all the global efforts in order to achieve the 17 Sustainable Development Goals.

For example, the second objective for sustainable development, which aims to eradicate hunger and ensure food security, is presented by the World Bank through a suggestive figure.

Thus, insufficient access to food resources, determined by economic causes is the main cause of hunger, phenomenon with which a large part of the Earth's population is facing. Its highest proportion is in Sub-Saharan Africa, but also Asia, the Near East, even Latin America and the Caribbean are dealing with this phenomenon. The need for food, being a primary need for mankind, the impossibility to satisfy it by the entire population of the Earth is a big concern for all the empowered organisms in this field.

Figure nr. 2. The number of children and young people affected by malnutrition



Source: http://datatopics.worldbank.org/sdgatlas/SDG-02-zero-hunger.html [Accessed 7 April 2019]

Efforts made to improve the nutrition of the population will contribute to progress in many fields of sustainable development. Persistent malnutrition reflects a failure to the development process.

Almost every country in the world is confronted with malnutrition problems that represents a high risk towards public health.

According to World Bank data (see figure 2), the number of children and young people affected by malnutrition has decreased in 2016 compared to 1990, by more than 95 million. Only Sub-Saharan Africa, as a result of population growth registers a slight increase in 2016 compared to 1990.

Based on these data, the world's states will have to adopt viable and realistic measures in order to implement the concept of sustainable development in the strategy appropriate for 21st century changes.

The economic growth from some of the states is not enough. Excessive population growth, especially in poorer areas of the planet, its aging in advanced countries, technology, depletion of resources, productivity gains, excessive industrialization are just some of the challenges in the 21st century. Mankind is at a crossroads, if the necessary measures are not taken, the situation will degenerate, reaching the hypotheses made in the 1970s by the representatives of the Club of Rome. According to them, a series of parameters have been taken into account: world population, natural resources, industrial production per capita, food per capita, pollution, economic expansion and demographic decline will stop during the 21st century, due to natural resources depletion.

The Sustainable Development Objectives which the 193 UN states have proposed to implement must become a priority in local, national and regional policies, if the world governments want to ensure a peaceful and healthy life for the planet's citizens.

Many of the challenges with which mankind is dealing, like climate change, water deficit, inequality and hunger, can be resolved only at a global level and through sustainable development promotion.

Diversifying and multiplying the needs of a growing population will bring new solutions based on last generation discoveries.

However, cutting-edge technology from artificial intelligence to zero emission electric vehicles can be a two-edged sword for the world's countries. Technologies from renewable energy field and efficient energy storage systems are already enhancing environmental sustainability, allowing countries to "overcome" already existing technology solutions. New technologies have improved access to medicines and increased the welfare of the most vulnerable. New frontier technologies – from renewable energy technologies to biodegradable materials, artificial intelligence and electric vehicles – they hold an enormous potential to improve human life and significantly accelerate efforts towards reaching Sustainable Development Goals. But, without the proper policies, they can lead to bigger inequality and social dislocation, according to *World Economic and Social Survey* report from 2018.

That is why António Guterres, the UN Secretary-General said that we need policies that can secure border technologies - which increasingly exceed the sectoral, geographical and generational boundaries – and are not only viable from a comercial point of fiew, but also fair and ethical. This will, however, require a thorough, continuous, objective and transparent assessment involving all interested parts.

In the field of sustainable development, the European Union is in an advanced position. It is determined that, together with the member states, be among the first actors that implement the UN Agenda 2030. Sustainable Development Goals are integrated into all 10 European Commission action priorities. In 2016, the European Commission presented its strategic approach towards the implementation of Agenda 2030 and achieving all sustainable development goals.

In this context, Romania, as a UN member since 1995, has elaborated a national volunteer magazine in 2018 with the occasion of the 100^{th} anniversary celebration of the Great Union, providing information on the implementation process of Agenda 2030 and its objectives of sustainable development. Romania's first national sustainable development strategy has been elaborated in 1999, revised in 2008 (one year after EU accession), and now the National Strategy for Sustainable Development and its 17 Sustainable Development Goals of Romania 2030 are in the process of implementation.

Therefore, at a national level, the Department for Sustainable Development was established in 2017, coordinating at a national level the implementation of the 17 sustainable development objectives.

For Romania, both as a UN member and as a European Union member, as well for all the world's states, sustainable development is not one of many possible options, but the only rational perspective in order to advance as a nation.

3. Conclusions

Agenda 2030, which contains the Sustainable Development Objectives, is a call to action to protect the planet and guarantee the well-being of people. These common objectives require active implication of individuals, businesses, administrations and countries from the whole world.

The states of the world, regardless of their level of development, will have to compete to provide future generations a chance for a better life, in which the satisfaction of basic and superior needs is a normality.

Between 24 and 25 september 209, the heads of state and government will meet at the United Nations headquarters in New York to track and properly analyze progress made in implementing the 2030 Sustainable Development Agenda and its 17 sustainable development objectives. This event will be the first UN summit regarding sustainable development objectives since adopting the 2030 Agenda in september 2015.

"Agenda 2030 and the Sustainable Development Objectives are our collective response towards building the right globalization", UN Secretary-General António Guterres declared.

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APPROACHES REGARDING OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN EUROPEAN AND NATIONAL CONTEXTS

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Abstract: *The development of economic performance and the need to identify certain solutions to ensure greater efficiency make it necessary for employers to identify proper solutions to motivate their staff. One issue not to be neglected is ensuring fair and equal treatment in terms of working conditions. The present study aims at scanning the main European concerns in the field of occupational health and safety as well as qualitative and quantitative characteristics specific to Romania. The authors have used qualitative research in this study by capitalizing on studies in this field, and European and national legislations.*

Key Words*: psychosocial risk, labour protection, occupational health and safety, economic growth.*
JEL Classification*: I15, J81, K31.*

1. Introduction

Conducting this study relies on the need to ensure in-depth knowledge of European norms and national legislation in the field of occupational hralth and safety as knowledge should be regarded as a key area to most organizations in the current period (Dindire, 2013). Equally, at the core of this research there are the world and European studies on population aging and its effects on the labour force.

The "Safer and Healthier Work at Any Age" Report carried out over three years (as of 2013) upon the initiative of the European Parliament has shown the aging of the population. Thus, worldwide the share of people over 60 years old is expected to increase from 11% in 2000 to 22% in 2050, whereas in Europe the share of people over 65 will be 27% of the total population in the year 2040.

This fact reinforces the European concerns for identifying economic development solutions which started almost a decade ago and were also reflected in increasing the retirement age. In addition to its positive influences, the phenomenon also generates expenditures as a result of the increase in health problems.

The aforementioned study shows a decrease of 5 p.p of the labour force in the 15-24 year-old category and an increase of 6 p.p in the 55 - 64 year-old age group.

In this context, addressing the issues related to occupational health and safety is a topical concern of major interest to modern society. Demographic changes are a major concern for occupational health and safety, and the legal framework developed at European and national levels appreciates the importance of sustainable work life and, as a condition of this, the need to promote health and safety in the work place, to create and implement a culture of prevention (EU - OSHA, 2017).

Another argument in support of the importance of occupational health and safety is highlighted by the World Congress on Occupational Health and Safety held in Singapore which estimates that occupational injuries and diseases generate losses representing 3.9% of GDP, namely 2,680 billion Euros, with occupational diseases being the cause of 86% of occupational deaths worldwide and 98% at EU level. In the European Union, the costs incurred by occupational diseases are 478 billion (3.3% of GDP) Euros, with occupational cancer generating 119.5 billion Euros, namely 0.98% of GDP.

2. Stage of the Research

Occuational accidents and diseases generate the most diverse negative effects: the workers are injured, the equipment is totally or partially affected, there are losses caused by employees' absenteeism and thus they both the organization and its reputation are negatively affected (Mohamad, 2017).

There is research that shows that the companies that have adopted occupational protection and health systems have had a lot to gain in the long term by the employees appreciating the working conditions, the effects concerning organizational climate in genera and labour productivity in particular. Vînturache and Toaje (2012) believe that companies can not only aim at economic performance but must also aim to protect the life, health and safety of their employees.

The European Union policy which, according to the Europe 2020 strategy, aims at ensuring smart, sustainable inclusive growth, also aims at the field of occupational health and safety in order to ensure decent, safe jobs that will not affect workers' health (US - OSHA, 2013). Companies have to face multiple challenges regarding occupational health and safety concerning on the one hand the need to identify the legislative provisions that suit them, and on the other hand the legal responsibility regarding the application thereof (Audiffren, 2012). Condrea and others (2013) believe that the implementation of a management system of occupational health and safety in the organizations of our country must be designed so as to ensure the transposition of the European requirements regarding occupational health and safety for workers, to be found in the national legislation.

The consequences of occupational accidents and diseases manifest themselves on the performer, on the workload, on the production means and on the environment (Rusu - Zagăr C.,). Lațiu L (2005) believes that it is moral for an employer to bear the costs generated by the occupational accidents and diseases induced by the activity performed by a worker.

3. European and National Regulations

Article 6 of the Consolidated Version of the Treaty on European Union states that the Union is competent to carry out actions to support, coordinate or supplement the actions of the Member States, and Article 151 sets objectives to promote employment and improve living conditions. Achieving such goals is a responsibility of the European Union that defines regulations that do not undermine the right of any country to define its social security principles. In the field of occupational health and safety, one can find the right to working conditions and social protection regulated in the European Social Book signed in Turin in 1961 and revised in 1996.

European Directive 89/391/EEC of 12 June 1989 on the implementation of steps to promote the improvement of occupational health and safety of workers in the work place, with subsequent amendments, defines a number of steps aimed at ensuring an adequate working environment. The main obligations of employers and workers in the field of occupational healtth and safety are identified. Thus, an employer has the obligation to ensure the health and safety of their workers by taking all necessary steps for both the protection of health and safety, as well as for the prevention of occupational risks and for providing information.

On 17 November 2017, the European Parliament, the European Council and the European Commission approved in Gothenburg (Sweden) the European Pillar of Social Rights. It stated that workers have the right to "fair and equal treatment in terms of working conditions, access to social protection and vocational trening" (Principle 5), namely they "have the right to a high level of occupational health and safety" (Principle

10). The European Pillar of social rights aims at ensuring efficient results at social as well as employment levels.

That element represents a desideratum of the European Union based on the need to ensure all the necessary and sufficient conditions to achieve the objectives of the Europe 2020 Strategy namely ”smart, sustainable inclusive growth”.

Protection in the workplace has been and still is a permanent concern for both the decision-makers and the employees, since there is always the risk of occurrence of certain events that might affect the employees and the organizations they work in. The phenomenon generates the need to establish one’s own strategy in the field of occupational health and safety that has as priority objectives the prevention of risks, the provision of suitable conditions in the workplace, the prevention of occupational accidents and diseases, the support of employees’ health. The ultimate goal of such steps is to protect the life, integrity and health of employees against the factors that can generate risks of occupational injuries and diseases, and the creation of working conditions that can provide an employee with adequate physical, social and mental comfort.

Risk management in the workplace must be a permanent concern not only for an employer but also for an employee, as any decision made in this respect by a decision-maker does not lead to any results if the employee is not actively involved. In this respect, a French employer, after taking the appropriate steps for occupational health and safety, created a system that warned the employees that ”nothing justifies getting injured”. That meant that the employer had taken all steps to protect the employees, the other things being the responsibility of the latter, so that the latter bear full responsibility for what happens to them.

It should be added that it is not enough just for the employer to take steps to protect the work and the employee to follow the steps, but the government must adopt a correct occupational health and safety policy and create the appropriate legislative framework, applicable to this sensitive area.

In this respect, in Romania, Law no. 319/2006 with subsequent amendments and additions has been adopted which has fully transposed Directive 89/391/EEC of 12 June 1989 on the implementation of steps to promote the improvement of ocupational health and safety of workers. Subsequent regulations of that law including Government Decision 1425/2006 for the application of Law no. 319/2006 with subsequent amendments and additions ensure the harmonization of the national legislation with the Community legislation in the field. It is worth mentioning that occupational health and safety is also regulated by Law no. 53/2003 (Labour Code) with subsequent amendments and additions, in Title V, Articlees 175 -191, issues regarding ”occupational health and safety”.

The most concerned in taking steps on the safety and health of the employees is the employer to whom a series of obligations are incumbent, arising from the provisions of Article 7 of Law no. 319/2006.

By Government Decision no. 191/2018, Romania has adopted the national strategy in the field of occupational health and safety for the period 2018-2020 which sets, among other things, the specific objectives of occupational health and safety, and their beneficiaries.

Given that any change in the social, economic and technological climate also generates new risks for employees in the employees, it is necessary to find specific adequate methods and means for the protection and avoidance of occupational accidents.

In this regard, it is necessary for any legal entity to develop and implement an occupational health and safety policy, having as main objectives:

- prevention/reduction in the number of work accidents;
- reduction in the number of medical leaves;

- ensuring a proper working climate;
- recruitment of the best labour force;
- facilitating contacts with the authorities, etc.

In order to achieve that policy, it is necessary to go through some stages:

1. Health and safety policy

In this regard, a company/legal entity must:

a) prepare an action plan signed by the partners and director regarding its health and safety policy;

b) involve the employees in the preparation of that action plan, as they know in detail the risks that may arise in the workplace.

2. Annual plan and report

a) prepare an annual plan to promote occupational health and safety;

b) conduct an annual assessment to improve health and safety status;

c) discuss the assessment plan with the employees or their representatives.

3. Training and certification in the field of health and safety;

a) the company must ensure that the employees have the necessary qualifications for the tasks they perform (e.g.: forklift certificates).

4. Presentation of health and safety issues

a) the company conducts and holds its own training for the new employees, including those at management level.

b) present health and safety issues before the start of employee activities.

5. Specific safety instructions, laws and regulations

a) train all employees and people who legally enter the company regarding the legislation and regulations specific to the activities carried out.

6. Verification of work equipment and products

a) periodically check in order to identify and register critical work equipment and components (e.g.: safety nets, welding equipment).

b) prepare a list of critical/hazardous equipment and products used.

7. Keeping records of accidents and incidents

a) laying down an internal procedure for keeping records of important accidents and incidents, of the person to whom they are related and of the person responsible for the investigation and monitoring.

b) precisely deciding the incidents that are reported and whom they are reported to.

8. Protection equipment and hygiene and health steps

a) the presence of a system to control the collective protection equipment;

b) the presence of a system to teach and maintain the protection equipment;

c) the presence of hygiene and health facilities.

9. Organizing safety

a) the company promotes regular dialogues with the employees or their representatives, according to needs and/or national legislation.

10. Management meetings

- Occupational health and safety issues should be regularly found on the agenda of management meetings.

The application of occupational health and safety management systems is a strategic and operational decision for any organization; organizations' success is a variable dependent on the management and involvement of all stakeholders from all levels and functions of the organization.

The development of an occupational health and safety management system involves defining a component of general management that includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and

resources for the preparation, implementation, achievement and revision of the health and safety plan.

In order to ensure a system that offers a better control of occupational risks, specific standards have been defined, namely OHSAS 18001:2007 and OHSAS 18002:2009, replaced by ISO 45001 as of March. The organizations that already apply the OHSAS 18001 standard have 3 years for the implementation of the ISO 45001 standard.

Applying the standard does not guarantee risk prevention or secure jobs, but gives employees and stakeholders the image of an organization involved in workers' problems.

The ISO 45001:2018 standard addresses the occupational health and safety issue through the PDCA (Plan-Do-Check-Act) concept, an iterative process that offers organizations the possibility of continuous improvement of the system and implies:

- P - Plan – Identify and assess the occupational health and safety risks and opportunities, set the specific objectives and processes;
- D – Do - Implement processes according to planning;
- C – Check - Monitor the outcome; monitorizarea rezultatului;
- A – Act - Take the necessary steps for continuous improvement and achievement of the expected outcomes.

The implementation of an occupational health and safety management system is influenced by a number of factors, of which the following can be mentioned:

- The management method and the involvement level of the top management;
- Building an organizational culture that includes elements of occupational health and safety;
- The communication system;
- The workers' level of involvement;
- The resources allocated for carrying out specific actions;
- Defining an occupational health and safety policy in accordance with the organization's strategy and policy;
- Conducting efficient risk assessment procedures;
- Implementing a system of permanent monitoring of occupational health and safety in order to improve performance;
- Building occupational health and safety structures integrated into the organization's structure;
- Compliance with specific legislation.

At the level of an organization, the presence of an occupational health and safety management system generates a number of remarkable advantages both at the organizational level and at the level of the environment where the activity is carried out, namely:

- Provides managers with a well-defined framework that allows the management of occupational health and safety issues;
- Improves the organization's image and stakeholder relations;
- Increases the level of involvement of personnel working in the operational sectors;
- Increases the awareness of necessity and the justice of responsibilities defined in this regard;
- Ensures better working conditions to increase work productivity but also employees' loyalty through greater confidence in the organization's management
- Demonstrates the employer's concern for the employees' working environment against the risks involved in their activities;

- Ensures the identification of risk factors and allows the preparation of plans to reduce them;
- Reduces costs related to non-compliance;
- Makes it possible to plan the investments that will be made in the field of occupational health and safety, which allows a correct and balanced management of the organization's resources.
- Reduces the number of occupational accidents and diseases.

Building an occupational health and safety management system allows organizations to manage activity-related risks more correctly, and the government to ensure a higher level of health and a reduction in the expenditures for social health, and in this regard. knowledge is the element that can provide added value to an organization that is forced to cope with environmental changes (Voiculeț A., 2010).

Conclusions

This paper has been aimed at highlighting the main European and national regulations in the field of occupational health and safety, since building occupational health and safety management systems represents a correct response to population aging, to the globalization phenomenon, to the application of new technologies and also to the use of different substances when performing activities.

The implementation of a management system for occupational health and safety is to an employer a helpful tool to generate profit as a result of reducing the costs caused by occupational diseases and accidents.

Regarding a workplace as a micro-environment, an occupational health and safety management system can offer solutions for increasing work productivity and the efficiency of performance carried out.

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THE EXAMINATION OF THE GOING CONCERN IN A MISSION OF AUDITING THE ANNUAL FINANCIAL STATEMENTS

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Abstract: *An important tool made available to the parties involved in a market economy in the era of globalization by economic practice, to provide end-users with assurance on the truthfulness and reliability of the information provided by the financial statements, is statutory audit. In addition, in order to increase the confidence of users in this information, the auditors should determine whether the audited entity complies with the principle of going concern, in which sense they must determine the bankruptcy status of the audited entity, respectively to determine the solvency level of it. In order to make this assessment, economic practice provides the necessary tools through the economic and financial analysis, using the scores method and applying the Altman model.*

Key words: *audit, statutory audit, audit mission, going concern, Altman Model.*
JEL Classification: *M42.*

1. Introduction

In a booming market economy, being influenced by all the changes that take place globally, politically, socially and technologically, audit is a tool made available to society by professional bodies in the field to provide the parties involved in the economic process, safety, respectively reasonable assurance regarding the consistency of the information provided by the financial statements with the requirements of a general reporting framework upon which they were drawn up.

Audit consists of a set of interrelated activities (a process) conducted by auditors or other experts who, based on their theoretical and practical knowledge, and following assignments received from certain bodies, analyzes the information and the operations of an entity or related to a certain activity to provide assurance through an opinion or to make recommendations (Oprean, 2002, p.17).

In conducting an audit of financial statements, the auditor's overall objectives are (IAASB, IFAC, CAFR, ISA 200.11, 2016, p.83):

- To obtain reasonable assurance as to the extent to which the financial statements as a whole are free from material misstatement, whether due to fraud or error, thus allowing the auditor to express an opinion on the extent to which the financial statements are prepared in all material respects, in accordance with the applicable financial reporting framework.
- To report on financial statements and communicate as required by ISAs, in accordance with the auditor's findings.

As part of the work done by auditors, an important task made by them, is to obtain audit evidence by which they determine whether the audited entity complies with the principle of going concern, respectively determines the entity's ability to continue to follow this principle or whether there is a suspicion of possible inability to continue its activity.

The audited entity's ability to observe the business going concern principle is very important to end-users of financial information, especially for investors, thus influencing their decision on the possibility to invest in the near future in the audited entity.

The purpose of the present approach is to present the importance of examining the going concern in an audit mission and to analyze, from a practical point of view, how such a procedure can be implemented through a case study.

2. Methodology

In order to achieve the proposed goal of the present scientific approach, the methodology of the scientific research used, from a theoretical point of view, is based on the study of the specialized literature and the regulations in the field regarding the going concern in an audit mission, respectively regarding the use of the score method through the implementation of the Altman model, and from a practical point of view, it is based on the presentation of a case study on the procedure of examining the going concern in an audit mission applied in the case of a listed entity.

3. Examining the going concern in the activity of auditing financial statements

An important work performed by the auditor in an audit engagement and which is of major interest to end-users, especially to investors to whom the final product is addressed from the conclusions of that activity, respectively the audit opinion issued in the auditor's report independently, is to determine the capacity of the audited entity to continue its activity.

Based on the going concern hypothesis, it is considered an entity is a going concern and will continue its business activities in the near future. General purpose financial statements are prepared on a going concern basis, unless the management either intends to liquidate the entity or stop operations or has no other realistic alternative outside of it. When the use of the going concern basis of accounting is appropriate, assets and liabilities are recorded on the basis that the entity will be able to realize its assets and pay its liabilities in the normal course of business (IAASB, IFAC, CAFR, ISA 570.2, 2016, p.578).

The auditor’s responsabilities are to obtain sufficient and appropriate audit evidence regarding, and conclude on, the appropriateness of management’s use of the going concern basis of accounting in the preparation of the financial statements, and to conclude, based on the audit evidence obtained, whether a material uncertainty exists about the entity’s ability to continue as a going concern. The objectives of the auditor are (IAASB, IFAC, CAFR, ISA 570.6, ISA 570.9, 2016, pp.579-580):

- To obtain sufficient and appropriate audit evidence regarding, and conclude on, the appropriateness of management’s use of the going concern basis of accounting in the preparation of the financial statement’s;
- To conclude, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity’s ability to continue as a going concern;
- To establish the consequences of the audit report.

Depending on the situation identified, the auditor will present in the audit report one of the following situations regarding the going concern of the audited entity's activity (Socol, 2017, p.163):

- The presumption of going concern of activity is appropriate;
- The presumption of going concern of activity is appropriate, but there is significant uncertainty;
- The assumption of going concern of activity is inadequate.

Often, analytical procedures are used as indicators to indicate whether the audited entity is facing significant financial difficulties. The probability of a future financial blockage should be analyzed by the diagnostician in the risk assessment procedures as well as by the way managers have applied the business going concern assumption during the preparation of the financial statements. Certain examinations can prove to be very useful in this regard, for example in the case of the finding of an over-average ratio between long-term liabilities and net assets, together with a ratio between the profit and the total assets

below average, when it can be deduced that there are financial difficulties, commercial and of other relatively large nature. Such circumstances not only affect the planning of the audit, but may also indicate the existence of a substantial doubt regarding the ability of the client entity to maintain its continuity of operation, respectively the occurrence of bankruptcy risk (Domnișoru, 2011, pp.331-332).

In practice, the risk assessment of going into business and maintaining the company's business in a competitive market also requires the use of statistical methods for predicting the risk of bankruptcy, of which, on short-term, we mention the score method or "credit-scoring". The target of this method is to determine for each company a summary indicator called "score", which would allow the estimation of the bankruptcy of the company. One of the analytical models of the bankruptcy developed in economic theory is Altman model, also called "Z" model. This model is a statistical-mathematical model for forecasting the bankruptcy of companies, being developed in the USA, in 1968, by Professor Altman. The "Z" model includes five variables considered the most representative financial understates of a company. With this model, the inspired professor was able to foresee about 75% of the bankruptcies of some companies with approximately two years before their occurrence (Domnișoru, Vînătoru and Gîrbaci, 2010, pp.7-8).

In order to be able to establish the entity's ability to continue as a going concern, auditors have at their disposal various methods established over time by economic and financial analysis specialists. Using the scores method, the Altman model can be applied to determine the Z function and determine whether the audited entity complies with the going concern principle and provide assurance to end-users, or potential investors, of whether the audited entity can continue as a going concern.

4. Examining the bankruptcy risk using the Score method

In the literature, using the Score Method, several models are available to specialists to determine the bankruptcy risk of entities. These include the Conan-Holder Model, the Altman Model, the central bank model of France, etc.

A scoring function is a combination of rates whose value for a given enterprise allows the forecast of its bankruptcy risk. The first scoring functions were conceived in the United States in 1960. The most important and already old researches in the field are undoubtedly those of E. I. Altmann; many subsequent studies, especially French, have drawn inspiration from them (Colasse, 2009, pp.173-174).

The Atman model is a predictive model of the company's bankruptcy. The decline of the enterprise occurs in several phases (Păvăloaia, et al., 2010, pp.374-375):

- Phase 1 – The early phase (decrease in profitability, decrease in turnover, debt increase, decrease in liquidity), these signs are disregarded;
- Phase 2 - clear signs of decline for which no action is taken, in the hope of their disappearance by themselves without intervening;
- Phase 3 - Strong action of declining factors, with a rather serious deterioration of the financial situation;
- Phase 4 - Collapse, managers' failure to take corrective action;
- Phase 5 - Intervention through recovery measures or by declaring bankruptcy.

The values of the Z function are (Păvăloaia, et al., 2010, p.375):

- $Z < 1,81$ – the firm is insolvent, is in Phases 4 and 5;
- $1,81 < Z \leq 2,9$ – the firm is in difficulty, phases 2 and 3;
- $Z > 2,9$ – the firm is solvent.

In order to apply the Altman model, it is necessary to determine the five specific variables and then establish the Z function. The related formulas are presented below in Table no. 1.

Table no. 1. Altman Model

Rate	Rate Name	Rate Formula
R_1	Current assets rate	$R_1 = \frac{Current\ assets}{Total\ assets}$
R_2	Return rate reinvested	$R_2 = \frac{Reinvested\ profit}{Total\ assets}$
R_3	Economic profitability rate	$R_3 = \frac{Gross\ profit}{Total\ assets}$
R_4	Financial stability rate	$R_4 = \frac{Equity}{Medium\ and\ long\ term\ debt}$
R_5	Rotation speed of the total asset	$R_5 = \frac{Turnover}{Total\ assets}$
$Z = 1,2\ R_1 + 1,4\ R_2 + 3,3\ R_3 + 0,6\ R_4 + R_5$		

Source: Own interpretation after C. Burja, *Enterprise's Financial Managing*, Seria Didactică, Alba Iulia, 2017, pp.157-158.

Using the Altman model, by determining its specific rates and then the Z function, one can determine the solvency level of an entity that reflects its bankruptcy status.

5. A case study regarding the procedure of examining the going concern in a mission of auditing the annual financial statements

The entity SC AUDIT SRL carries out the audit activity of the financial statements related to the entity SC ALFA SRL, an entity listed on the Bucharest Stock Exchange, thus being a public interest entity. Among the activities carried out in order to establish the conclusions of the auditing activity on which the auditor's opinion is based, is an examination of the going concern. In order to determine the entity's ability to continue its going concern, the auditor uses the Altman Model. In the table no. 2 an extract from the balance sheet and the profit and loss account of SC ALFA SRL, which contains the indicators used to apply the Altman Model, is found.

Table no. 2. Extract from the balance sheet and the profit and loss account of the entity SC ALFA SRL

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Indicators	2015	2016	2017
Total assets	51398	51768	53587
Current assets	6373	7856	20195
Reinvested profit	5746	3561	3209
Equity	40555	50872	56132
Turnover	18479	15743	25742
Medium and long term debt	18385	17018	15801
Gross profit	908	1581	3930

Applying the mathematical formulas to determine the rates underlying the Altman model, through which the Z function is then determined, the auditor can determine the solvency level of the audited entity SC ALFA SRL. Within Table no. 3, the values of these

rates are determined during the period 2015-2017, and then the Z function is determined for each analyzed year.

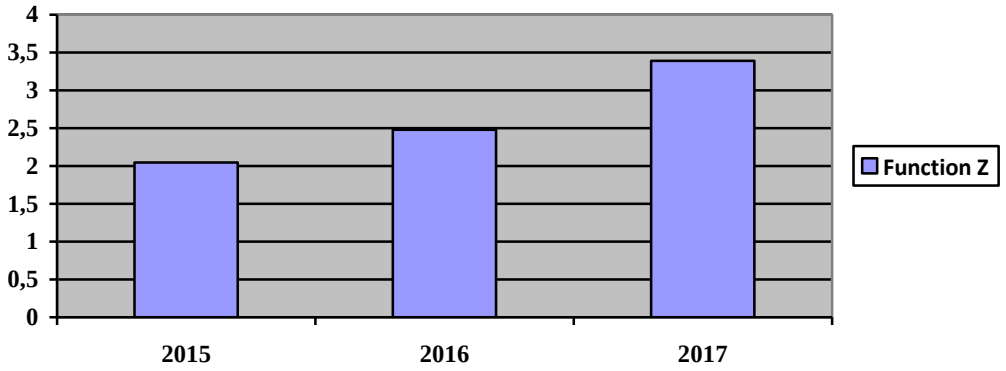
Table no. 3. Determining the Altman Model indicators in the case of entity SC ALFA SRL entity

Rate	2015	2016	2017
R_1	0,12399	0,15175	0,37686
R_2	0,11179	0,06879	0,05988
R_3	0,01767	0,03054	0,07334
R_4	2,20587	2,98931	3,55243
R_5	0,35953	0,30411	0,48038
Function Z	**2,04665**	**2,47688**	**3,38993**

Source: own creation

In Figure no. 1 are represented the values of the Z function in the period 2015-2017, in order to be able to visualize the evolution of the bankruptcy risk, respectively the solvency level of the audited entity.

Figure no. 1. Evolution of Z function during the analysis period of the indicators related to the entity SC ALFA SRL



Source: own creation

We note that in 2015 and 2016, the values of the Z function are in the range of (1.81, 2.9], the audited entity thus being in difficulty, but by implementing appropriate measures, the entity has managed to overcome this situation, the Z function registering in the year 2017 a value of more than 2.9 and 3.38993, which indicates that the audited entity became solvent and the end users, respectively, the potential investors can trust the viability of this entity.

6. Conclusions

The activity of auditing financial statements is a complex process that, through the opinion issued in the independent auditor's report, seeks to increase the level of confidence of end-users in the information provided by the financial statements, respectively in the work carried out by the audited entities. In this regard, within the auditing process, an activity performed by the auditor and which has a direct impact on the decisions made by the end-users, is the examination of the audited entity's ability to continue as a going concern.

In order to examine the ability of an entity to continue as a going concern, the literature provides professionals with the necessary tools through the economic-financial analysis, respectively, in this case, using the scores method by applying the Altman model and determining the Z function. In the case study presented, we can observe that the audited entity was in difficulty for the first two years analyzed, but following the implementation of the necessary measures in the last year analyzed, the entity managed to overcome this situation and become solvable, thus allowing end-users to trust in its reliability.

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THE INFLUENCE OF EDUCATION ON SOCIAL AND ECONOMIC DEVELOPMENT

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Abstract: *The social and global context involves numerous structural and functional changes, and the task of education is unprecedented and difficult. The education is related to well-being and competitiveness. Countries that have invested over time in the education system are the ones who today, are gathering the fruits of development, being at the top of the human development index in the world. The present paper analyzes the influence of expectancy of schooling on the degree of well-being of the population. To show the relationship between the two variables, we use the simple regression method, to construct a linear model for the period 2010 and 2017. The independent variable is considered expected years of schooling and the dependent variable is Gross Domestic Product. The calculations resulting led to the conclusion that the variation of Gross Domestic Product is explained at a rate of 71% by the variation of expected years of schooling.*

Keywords: *Human Development, expectancy of schooling, education, Gross Domestic Product.*
JEL Classification: *I25, C25.*

1. Introduction

The social and global context involves numerous structural and functional changes, and the task of education is unprecedented and difficult.

The issue of the contemporary world, characterized by universality, globality, complexity and priority character is increasingly proving that the most effective solutions can not be found through sequential and parcels, but requires vision holistic approach to studying and decanning the most effective means of solving the seas problems faced by mankind. By structure, objectives and content, education must to respond continuously to the exigencies demanded by the evolution of national and international reality.

The meanings and effectiveness of the educational act are given by the availability of education adaptation and self-regulation to the widespread defiance of social space.

In the new economic context, characterized by instability, crises and pressure competitive, human capital is therefore becoming an essential pillar leads to growth and economic development, being recognized that it is one of the engines of economic development, both at the social and community level and individual levels.

2. Theoretical approach

Famous economists have shown over time that there is a close interdependence between the level of development of a nation and education, and they have been concerned with deciphering the meaning of education and bringing more light on the complicated link between economic and educational development (Badea, 2012).

[1] Contact person for this paper

Development is more than capital accumulation and reducing inefficiencies in the economy. It's transformation society, the removal from the traditional way of working and thinking to a modern one (Stiglitz, 2002).

The attention given to education is reflected in the obtained macroeconomic results. Increased spending on education, reducing dropout, but especially keeping students with exceptional results at national and international competitions will lead to sustainable growth in GDP (Teselios, 2014). Also, Teselios D. and other researchers have studied in the past, the link between education and the social and economic growth of a country.

Increasing education positively affects the living standards of the individual, and his welfare. For quantifying the welfare is used the Human Development Index (HDI) which represent a composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living (Voineagu, Dumitrescu and Ștefănescu, 2009, pp.16-20).

Indicators corresponding to each of the three dimensions refer to life expectancy at birth, expected years of schooling (or schooling expectation), mean years of schooling, gross national income per capita (Figure 1).

Life expectancy at birth: Number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.

Expected years of schooling: Number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life.

Mean years of schooling: Average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.

Gross national income (GNI) per capita: Aggregate income of an economy generated by its production and its ownership of factors of production, less the incomes paid for the use of factors of production owned by the rest of the world, converted to international dollars using PPP rates, divided by midyear population.

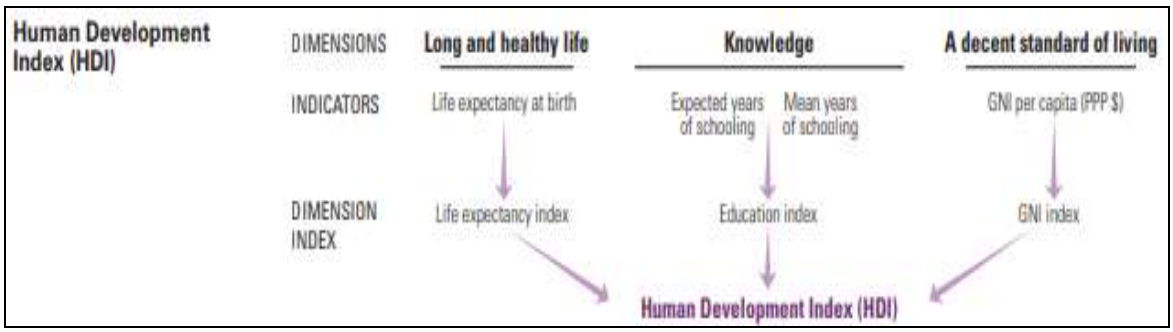

Figure 1. The components of the human development index(HDI)

Source: United Nations Development Programme, 2018. *Human Development Reports, Technical notes.* [pdf] Available at: <hdr.undp.org/sites/default/files/hdr2018_technical_notes.pdf> [Accessed 6 April 2019].

According to data provided by the United Nations Development Programme, the first three positions are occupied by Norway (HDI = 0.953), Switzerland (HDI = 0.944) and Australia (HDI = 0.939). The last places are Central African Republic (HDI = 0.367), South Sudan (HDI = 0.388), and Niger (HDI = 0.354). Romania ranks 52th in the top of the human development index with a HDI value of 0.811 (Figure 2).

-	Rank	Country	Human Development Index (HDI) (value) ▲	Life expectancy at birth (years) SDG3	Expected years of schooling (years) SDG 4.3	Mean years of schooling (years) SDG 4.6	Gro (GNI)
	1	Norway	0.953	82.3	17.9	12.6	
	2	Switzerland	0.944	83.5	16.2	13.4	
	3	Australia	0.939	83.1	22.9	12.9	
	51	Bulgaria	0.813	74.9	14.8	11.8	
	52	Romania	0.811	75.6	14.3	11.0	
	53	Belarus	0.808	73.1	15.5	12.3	
	189	Niger	0.354	60.4	5.4	2.0	
	188	Central African Republic	0.367	52.9	7.2	4.3	
	187	South Sudan	0.388	57.3	4.9	4.8	

Figure 2. Human Development Index (HDI) Ranking of the world

Source: United Nations Development Programme, 2018. *Human Development Reports, Technical notes.* [pdf] Available at: <hdr.undp.org/sites/default/files/hdr2018_technical_notes.pdf> [Accessed 6 April 2019].

Regarding the evolution of the human development index in Romania during 2010-2017, the situation is as shown in the figure below, from an HDI value of about 0.78 in 2010 to a value of approximately 0.81 in year 2017 (Figure 3).

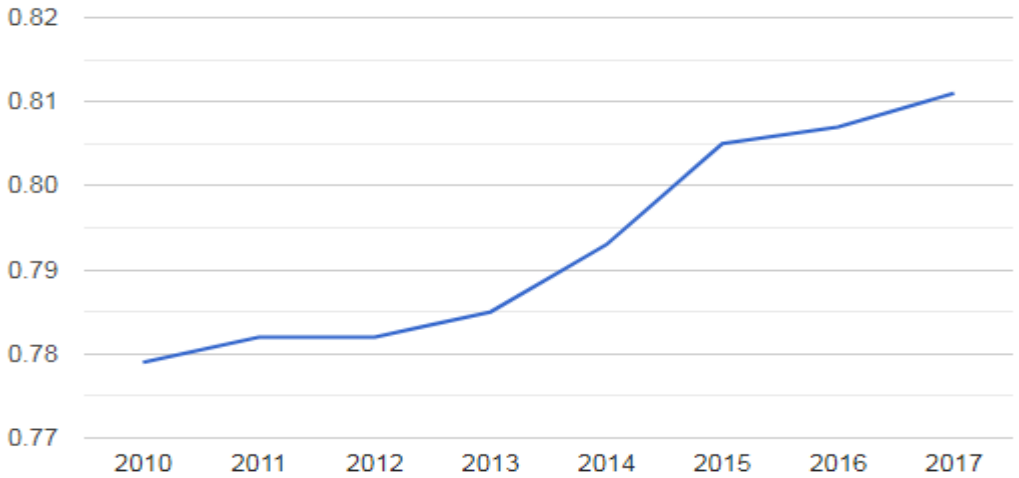

Figure 3. Romania Human Development Index

Source: The Global Economy, 2019. *Romania: Human development*. [online] Available at: <http://www.theglobaleconomy.com/Romania/human_development/> [Accessed 6 April 2019].

Regarding the dynamics of the economic growth in Romania during the period 2010-2018, the data for 2018 being provisional, the values fluctuate as shown in the figure below. In 2017, economic growth peaked at 8.8, followed by a fall to between 4.1-4.2 in the first quarter of 2018. Forecasts based on statistical data provided by the National

Statistics Institute, refers to maintaining these values of 4.1-4.2 for economic growth in 2019 as well (Figure 4).

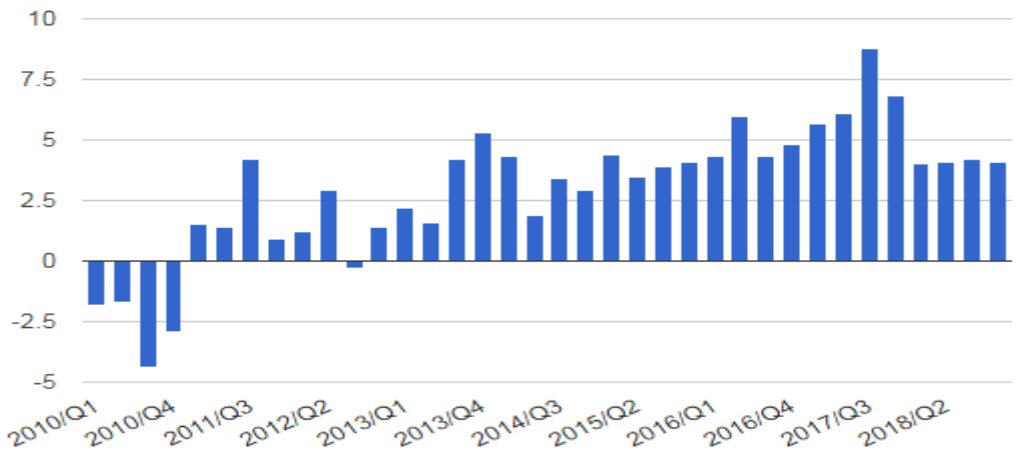

Figure 4. Romania Economic (GDP) growth, percent

Source: The Global Economy, 2019. *Romania: Human development*. [online] Available at: <http://www.theglobaleconomy.com/Romania/human_development/> [Accessed 6 April 2019].

Regarding the rate of growth of gross domestic product per capita, the information provided by INS can be found in the table below. Between 2010 and 2016, the growth rate of domestic product per capita registered a positive evolution from the negative value of -0.2 in 2010, when Romania was going through a period of economic crisis to 5.4 in 2016, this year being the last updated year in the INS database (Tabel 1).

Table 1. Real Gross Domestic Product per capita, growth rate of Romania

year	Gross Domestic Product
2010	-0,2
2011	1,6
2012	1,1
2013	3,9
2014	3,5
2015*	4,5
2016**	5,4

Source: National Institute of Statistics, 2019. *Baze de date statistice*. [online] Available at: <www.insse.ro/.../O1_1Rata%20de%20crestere%20a%20PIB%20pe%20locuitor.xls> [Accessed 6 April 2019].

As we said above the Human Development Index (HDI) represent a composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. The indicators corresponding to these three dimensions: Life expectancy at birth, Expected years of schooling, Mean years of schooling, GNI per capita, for Romania in 2010-2017, are presented in the table below (Table 2).

Table 2. Romania's HDI trends based on consistent time series data

Year	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (2011 PPP$)	HDI value
2010	73.8	15.7	10.6	17,100	0.798
2011	74.1	15.3	10.7	17,333	0.797
2012	74.3	14.7	10.8	17,511	0.794
2013	74.3	14.7	10.8	18,103	0.797
2014	74.7	14.7	10.6	18,895	0.798
2015	74.8	14.7	10.8	19,428	0.802
2016	75.1	14.2	10.9	20,928	0.807
2017	75.6	14.3	11.0	22,646	0.811

Source: UNESCO, 2019. *Data by theme*. [online] Institute for Statistics. Available at: <http://data.uis.unesco.org/index.aspx?queryid=242> [Accessed 6 April 2019].
United Nations Development Programme, 2018. *Human Development Reports, Technical notes.* [pdf] Available at: <hdr.undp.org/sites/default/files/hdr2018_technical_notes.pdf> [Accessed 6 April 2019].

3. Research methodology

We use Data Analysis in Tools menu of the Microsoft Excel to construct a linear model of simple regression for the analysis of the interdependence between the Gross Domestic Product and expected years of schooling, for Romania in the period 2010-2017. To show the relationship between the two variables, we use the simple regression method, which led to the linear model of the form:

$$Y = a_0 + a_1 X + \varepsilon, \quad (1)$$

where Y(endogenous variable) = Gross Domestic Product in Romania during 2010-2017, X (exogenous variable) = expected years of schooling for Romania during 2010-2017 and ε = random variable that summarizes the influence of other variables (unspecified in the model) on the Gross Domestic Product.

4. The results of the research

The result of the statistic correlation method is negative -0.848285, which means there is a reverse link between Gross Domestic Product and expected years of schooling as shown in table below (Table 3).

Table 3. The statistic correlation method

	GDP	Expected years of schooling
GDP	1	
Expected years of schooling	-0.848285	1

Source: data processed by the author

The value of the correlation coefficient between time series of Gross Domestic Product and expected years of schooling for Romania is "multiple R" = 0.8482, the significance is that between the two variables is an average positive correlation.(figure 5)

The coefficient of determination (R Square) being of 0.7195 indicates that the variation of Gross Domestic Product is explained at a rate of 71% by the variation of expected years of schooling.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,84828532							
R Square	0,719587984							
Adjusted R Square	0,663505581							
Standard Error	1,176347415							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	17,75531951	17,75531951	12,83090493	0,015840919			
Residual	5	6,918966203	1,383793241					
Total	6	24,67428571						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	55,0500994	14,58554988	3,774290297	0,012965656	17,55674981	92,543449	17,55674981	92,543449
X Variable 1	-3,51491054	0,981263471	-3,582025255	0,015840919	-6,03732859	-0,992492481	-6,037328592	-0,992492481

Figure 5. Summary output of the regression method

Source: data processed by the author

The Adjusted R Square value is 0.6635 which refers to the adjusted value of determination coefficient.

Using the values from Coefficients column, we obtain for the equation(1) the linear model below:

$$Y = 55.0500994 – 3.51491054X \quad (2)$$

The coefficient for the independent variable, recorded the value of -3.51491054, a negative value which indicates a reverse link between Gross Domestic Product and expected years of schooling. The free term equal to 55,0500994 represents the value of the dependent variable when the independent variable is equal to zero. The significance limit, F-test, in the ANOVA table above (Figure 5) validate the model since F is 12,830 and Significance F is 0.01584 (lower than 0.05) we conclude that the regression model is valid and we can use it to analyze the relationship between the two variables.

Since t Stat = 3.77429 and P- value = 0.0129 <0.05, means that the coefficient is significantly different from 0, and the confidence interval is [17.55674; 92.543449]. In this case, P-value = 0.0129 <0.05, the coefficient is significant and the confidence interval for the variable is [-6.03732859; -0.992492481].

5. Conclusions

In this work we have underlined the existence of a link between gross domestic product and expected years of schooling. The study' findings highlighted a reverse link between the two indicators, which leads to the conclusion that reducing the expected years of schooling indicator will lead to an increase in gross domestic product.

Obviously, education has become a way of guiding social evolution and underpinned to all the transformations that take place in society. The vicious circle of education represents in the present society that system that creates values and norms, which impose and modify them according to the state of science, technology, knowledge. Therefore, any society and every being are the fruit of education, this generating effects and results that should be superior to the level prior to knowledge.

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CREDIT MANAGEMENT POLICY AND FIRMS' PROFITABILITY: EVIDENCE FROM INFANT MANUFACTURING FIRMS IN SOUTHWEST, NIGERIA

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Abstract: *Credit management policy concerns managing debtors and financing debts. The higher the amount of debts not collected over a period of time, the higher the maintenance costs incurred which invariably impact on profitability. This study assessed the relationship between credit management policy initiatives and profitability among infant manufacturing firms in Southwest, Nigeria. The study adopted a descriptive research design. The convenience sampling technique was used to select ten (10) infant manufacturing firms and secondary data were extracted from annual reports of the selected firms over a period of ten (10) years (2009-2018). The data collected were analysed using descriptive and inferential statistics. The results of the study showed that there was an insignificant, positive relationship between Current Ratio (CR) and profitability at P>0.05; also, there exists an insignificant, positive relationship between Creditor's Payment Period (CPP) and profitability at P>0.05. However, Debtor's Collection Period (DCP) and profitability showed a significant, negative relationship at P<0.05. The study concluded that a favourable debtor's collection period is a precondition for improved profitability position. Therefore, it is recommended that a slightly tight debtor's collection strategy and procedure should be established as documented in this study so as to minimize the problem of cash flow and bad debt among infant manufacturing firms in Nigeria.*

Keywords: *Credit Management, Profitability, Debtors' Collection Period, Current Ratio, Creditors' Payment Period.*
JEL Classification*: G32, G21.*

1. Introduction

It is a common occurrence among business organisations in the modern day to allow customers to buy products now, and pay at a later date; infant manufacturing firms are not left out. When a firm sells its products and does not receive cash for it immediately, the firm is said to have granted credit to its customers. This improves patronage which may boost profits in the long run.

Managing credit transactions is an important issue in any organisation as it remains a credible source of finance which enhances business operations. Brigham and Houston (2003) observed that a large portion of a typical financial manager's time is devoted to managing the firm's credit affairs. Credit management policy is concerned primarily with managing debtors and financing debts. The higher the amount of debts not yet collected and their age, the higher the finance costs incurred to maintain them. If these debts were not collected as at when due, cash requirements may necessitate borrowing fund which ultimately affects firms profitability. It is equally important to minimize potential credit default, as high default rate may lead to decreased cash flows and cause financial distress. However, a significant prerequisite for effective credit management is the ability of firms

to logically and professionally manage customer credit lines. The importance of credit management policy therefore to any business organization cannot be overemphasized.

A company's credit management policy refers to the steps taken by a business to allow, monitor, and collect the payments yet to be made on credit transactions. Every credit management policy initiative set by an organization seeks to achieve liquidity for enhancing firms' continued operation. Business transaction modes, as well as customers, nowadays differ significantly when compared with previous dispensations. Therefore, credit management policy requires a periodical review to enhance organizations' successful operations. The present study examines credit policy and its impact on infant manufacturing firms' profitability in Southwest, Nigeria.

The survival of any firm to continue in business is contingent on profitability and infant manufacturing firms do rely on good credit policy. Thus, bad debts and poor credit management policy erode the profitability of infant manufacturing firms.

A growing body of literature in this aspect of financial management is available in the developed countries but relatively few in developing countries, especially in Nigeria with special reference to infant manufacturing firms. Due to different methodologies, particularly in definition of proxies used as surrogates for credit management policy, mixed results were produced by prior studies. The present study attempts to lessen the above inadequacies in the literature by adopting ten infant manufacturing firms in Southwest Nigerian business environment to establish the relationship between the two variables.

Despite Nigerian government efforts to grow and encourage infant firms in the country being a veritable engine of economic growth, inadequate finance still bedevils continued survival and profitable operations as many of these firms are being forced out of business at gestation stages. Myers and Brealey (2003) described credit management as methods and strategies adopted by firms to ensure that they maintain an optimal level of credit and its effective management. However, the inadequate finance may possibly be linked with lack of effective credit management policy by firms' operators, hence this study.

The primary objective of this present study is to empirically examine the relationship between credit management policy and profitability of Nigerian infant manufacturing firms.

The specific objectives of the study are to:

i. assess the statistically significant relationship between Current Ratio (CR) and profitability of infant manufacturing firms in Nigeria;

ii. ascertain the significant relationship between Creditor's Payment Period (CPP) and profitability of infant manufacturing firms in Nigeria; and

iii. identify relationship between Debtor's Collection Period (DCP) and profitability of listed manufacturing firms in Nigeria.

Research Hypotheses

The following hypotheses were stated to guide this study:

i. $H_{0:}$ There is no statistically significant relationship between Current Ratio (CR) and profitability of listed manufacturing firms in Nigeria.

ii. $H_{0:}$ There is no significant relationship between Creditor's Payment Period (CPP) and profitability of listed manufacturing firms in Nigeria.

iii. $H_{0:}$ There is no significant relationship between Debtor's Collection Period (DCP) and profitability of listed manufacturing firms in Nigeria.

Significance of the Study

This study will serve as a source of information to companies granting credit with respect to the policies and procedures to be adopted. The general public will equally

benefit because it will serve as a reference material when adopting any credit policy. Also, firms' operators will find the results the study relevant to their day to day business decisions especially among the infant manufacturing firms. The study will contribute to literature on effective credit management policy among infant manufacturing firms in Nigeria.

2. Literature Review

Conceptual Review

We reviewed relevant literature that examined the associations between current ratio, creditors' payment period and debtors' collection period and profitability adopting data sets ranging from panel, cross-sectional and time series. The term credit originated from *credere* or *creditum* which means trust. The word implies that any credit activity must be based on trust. The economic value that would be obtained by debtor and creditor should be agreed at the outset without prejudice to either party. According to Firdaus and Ariyanti (2003) credit is a financial system to facilitate the transfer of capital from the owner to the user with the hope of gain. Loans granted by the trust to another person who gave it to the borrower's ability and honesty.

Credit management is the application of a set of policies and procedures to ensure working capital is not unnecessarily tied down, thereby minimizing the occurrence of bad debts. Business capital exposure to bad debts will be minimized to the barest minimum. Hence, **e**ffective credit management enhances the financial stability of the business. Credit policies are simply guidelines with which credit is executed. Such guidelines are essential for credit to achieve its purpose. It is noteworthy that all the parties involved in credit transaction, as well as their employees should work assiduously to make credit management achieve its aim. Trade credit has become a veritable instrument that cannot be dissociated from daily business operations. It boosts the amount of sales made because individuals and organizations alike are allowed to pay at a later date items supplied now. Flannery and Ragan (2002) opined that a credit policy boosts asset quality; create a set of minimum standards, and gives rise to measurement and reporting of non-performing assets.

The process of credit management begins with accurate assessment of the credit-worthiness of the owner of business. This is particularly important if the business chooses to extend credit facilities to certain customers. Hence, effective credit management is setting specific measures that a customer must meet before receiving the proposed credit arrangement. As part of the evaluation process, credit management entails determining the total credit line that will be extended to a particular business.

Several factors are used as part of the credit management process to evaluate and qualify a customer for the receipt of some form of commercial credit. This includes gathering data on the potential customer's current financial condition, including the current credit track record that discloses the character of a customer in meeting obligations as well as collateral value. The current ratio between income and outstanding financial obligations will also be taken into consideration. Competent credit management seeks not only to protect the infant manufacturing firms from possible losses, but also protect the customer from creating more debt obligations that cannot be settled on time.

When the process of credit management functions efficiently, everyone involved benefits from the effort. The financial institution such as banks has a reasonable amount of assurance that loans granted to a client will be paid back within terms, or that regular minimum payments will be received on credit account balances. Customers have the opportunity to build a strong rapport with the creditor and thus create a solid credit reference.

In order to be effective, credit policies must be communicated throughout the organization, implemented through appropriate procedures, monitored and periodically revised to take into account changing internal and external circumstances. Economic conditions and the firm's credit policies are the principal influences on the level of a firm's account receivable. Economic conditions, of course, are largely beyond the control of the financial manager. As with other current assets, however, the manager can vary the level of receivables in keeping with the tradeoff between profitability and risk. Lowering quality standards may stimulate demand, which, in turn, lead to higher receivables, as well as a greater risk of bad debt.

The credit and collection policy of one firm are not independent of those of other firms. If product and capital markets are reasonably competitive, the credit and collection practices of one company will be influenced by what other companies are doing. Such practice related to the pricing of the product or service and must be viewed as part of the overall competitive process. The examination of certain policy variables implies that the competitive process is accounted for in the specification of the demand function as well as in the opportunity cost associated with taking on additional receivables. The policy variables include the quality of the trade accounts accepted; the length of the credit period, the cash discount, any special terms such as seasonal dating and the collection program of the firm. Together, these elements largely determine the average collection period and the proportion of bad debt losses (Horne, 1995).

Good credit management involves optimizing cash flow to ensure stability and provide maximum potential for growth. Credit arises when a firm sells its products or services on credit and does not receive cash immediately. It is an essential marketing tool, acting as a bridge for the movement of goods through production and distribution stages to customers. A firm grants trade credit to protect its sales from the competitors and to attract the potential customers to buy its products at favourable terms. Trade credit creates receivable or book debts which the firm is expected to collect in the near future.

For Michael (2007), good credit management is an essential component and a fundamental part of the modern commercial strategy. Michael (1997) consented that extending credit to customers is an aid to sales and all staff should be involved. Michael blended sensible control of credit management and customer satisfaction with profitability. Steve (1997) pointed out that the objective of Association of Credit Professionals (ACP) is to ensure that good credit management provides customer satisfaction and profit. Steve (1997) agreed with Michael's assertion who contended that satisfied customers are more likely to pay promptly than buyers who feel they are not getting a good deal. Indeed, if revenue is the energy that powers company, credit management is the engine that keeps it flowing. The credit management engine acts as a heart, driving revenue and motivation to every part of the company. As credit management apparatus becomes more refined and efficient, so the company becomes more productive and profitable.

Credit management Policy is viewed as written guidelines that set the terms and conditions for supplying goods on credit, customer qualification criteria, procedure for making collections, and steps to be taken in case of customer delinquency. This term can also be referred to as collection policy. It is also the guidelines that spell out how to decide which goods are sold on open account, the exact payment terms, the limits set on outstanding balances and how to deal with delinquent accounts.

Debtor management policy means the process of decisions relating to the investment in business debtors. In credit sales, it is certain that we have to pay the cost of getting money from debtors and to take some risk of loss due to bad debts. To minimize the loss due to not receiving money from debtors is the main aim of debtor management.

Economic conditions and firms credit policies are the chief influence on the level of a firm's account receivable (James, 2002). The trade-off between increase in the market share through credit sales and the collectability of the account receivable affects firm's liquidity and its eventual profitability. A firm may report large profit and still suffer liquidity problem if bulk of its transactions are in account receivable and collection policy in not effective. Credit and collection policies encompasses the quality of accounts accepted, the credit period extended, the cash discount given, certain special terms and the level of collection expenditure. In each case, the credit decision involves a trade-off between the additional profitability and the cost resulting from a change in any of these elements.

Receivable management begins with the decision of whether of whether or not to grant credit. Where goods are sold on credit, a monitoring system is important, because without it, receivable will built up to excessive levels, cash flow (liquidity) will decline and bad debts will offset the profit on sales. Corrective action is often needed and the only way to know whether the situation is getting out of hand is to set up and then follow a good receivable control system (Eugene, 1992).

The prominence of applying good credit management policy has developed over the past decades and many studies have investigated the role and effect of the policy. Ojeka (2012) studied four manufacturing companies in Nigeria and discovered that when a company's credit policy is favourable, liquidity is at a desirable level. Ifurueze (2013) carried out a study that examined the impact of effective management of credit sales on profitability and liquidity of Food and Beverage Industries in Nigeria. The study found out that when credit sales are effectively managed, profitability is at a desirable level. Most widely used credit risk management practices are debt collectors, letter of credit, and credit insurance and factor of debt. When dealing with difficult customers, accounts and future sales may be put on hold till the account is settled. Thus, management needs to put in place sound credit management to prevent late payment by debtors hence an increase in profitability.

This study is anchored on Schwartz (1974) propounded transactions costs theory and stated that suppliers may have an advantage over traditional lenders in inspecting the credit worth of their customers. Suppliers have skill to monitor and force repayment of the credit. Hence, suppliers have cost advantage when juxtaposed with financial institutions. In summary, the transaction cost theory best suit credit management of a small firm because it has supplier-client relationship, on which the supplier is the manufacturing firm granting the credit while the client, is the customers or the debtors of the business. This theory considers the factors before granting credit to its customers which include: the information about the customer`s ability to pay on time, the nature of the firm`s financial statement which are not expensive to operate.

3. Methodology

Research Design

The study adopted an ex-post facto research design as past data in the form of secondary data were utilized. It is also empiric in nature.

Source of Data

Data for the period of study, 2009-2018, were mainly from secondary source and obtained primarily from published annual reports and accounts of the banks sampled for the study. Secondary data were collected from the annual reports and accounts of the selected infant manufacturing firms under the study.

Population, Sample and Sampling Technique

Target population for the study as at 31st August, 2018 were 22 infant manufacturing firms out of which 10 firms were selected as sample through judgmental sampling technique (guided by availability of relevant data used for the study).

Variable Description and Measurement

Table 1 presents the study variables and their measurements.

Specification of Model

The general form of panel data analysis for the multiple regression models used in explaining the relationship that exists between credit management policy and performance of infant manufacturing firms is specified in equation 3.1 and 3.2:

ROA= *f*(CR, CPP, DCP) 3.1

Where:

ROA – Return on asset

CR – Current ratio

CPP – Creditor's Payment period

DCP – Debtor's collection period

β_0 – constant or intercept

β_1-β_3 – coefficient of slope parameters

e_{it} is the error term (assumed to have zero mean and independent across time period)

β is the coefficient of explanatory variable

F_{it} is the explanatory variable

i – ten (10) manufacturing firms

t – time dimension of the variables (10) years

By adopting the economic model as in equation above, the following equation evolves

$$ROA_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 CPP_{it} + \beta_3 DCP_{it} + \varepsilon_{it} \quad 3.2$$

Estimation technique

The study employed Augmented Dickey Fuller (ADF) technique of estimation to test the stationary level of the series. The Granger causality test is used to check for causality between two variables. This is used to test the causal relationship between credit management policy and profitability. The conventional rules show that there is a causal relationship if the probability value is between 0.01 and 0.05. The Breusch Pagan LM approach is employed in estimating the serial correlation model.

Table 1. Measurement of Variables

Symbols	Variables	Variable type	Measurement
ROA	Return on asset	Dependent	Annual earning / Total assets
CR	Current ratio	Independent	Current asset / Current liability
CPP	Creditor's payment period	Independent	Average creditors x 365 / credit purchases
DCP	Debtor's collection period	Independent	Average debtors x 365 / Credit sales

Source: Own computation (2018)

Validity and Reliability of Data and Research Instrument

Data used in the study were obtained from reliable source- audited financial statements of the selected banks. The financial statements were audited by reputable audit firms and certified for public use by relevant regulatory bodies, such as Securities and Exchange Commission and Financial Reporting Council of Nigeria. The research instrument adopted for this study is consistent with what obtained in prior empirical studies of this nature (Ogbudu and Eze, 2016, Mendoza and Rivera, 2017; Annor and Obeng, 2017).

4. Empirical results and discussion

Descriptive Statistics

Table 2 implies that the mean value of Returns on Assets (ROA) is 12.26% over ten (10) year period (2009-2018) for the selected firms in this study with a minimum of -30% and a maximum of 64%. This indicates that the use of total assets to generate earnings is averagely low during this period of study. It also indicates that some firms are generating earnings as low as -30% and can be improved to 64%. The standard deviation stands at 11.20% which means that the value of profitability can deviate from the mean to both sides by 11.20%. The coefficient of skewness 0.5032 implies that the data is positively skewed.

Table 2. Descriptive Analysis

Specification	ROA	CR	CPP	DCP
Mean	0.122617	1.457154	60.85966	42.84434
Median	0.120140	1.112413	55.84972	35.39522
Maximum	0.637636	7.736757	238.1412	157.7381
Minimum	-0.303786	0.408655	2.693226	1.808311
Std. dev.	0.1123030	1.115529	45.89538	32.23442
Skewness	0.503226	3.452264	1.213883	1.565637
Kurtosis	10.31667	17.80264	4.939697	5.659400
JARQUE-BERA	159.0941	778.1397	28.16470	49.22542
PROBABILITY	0.000000***	0.000000***	0.000001***	0.000000***
SUM	8.583166	102.0008	4260.176	2999.104
SUM SQ.DEV.	0.866005	85.86393	145340.6	71694.99
OBSERVATION	100	100	100	100

Source: Own computation (2018)

As shown in Table 2, the Current Ratio (CR) shows that on average, infant manufacturing firms keep current assets at 1.46 times to current liabilities with a standard deviation of 1.12. The highest current ratio for a firm in the study period is 7.74, with the lowest at 0.41. The coefficient of skewness 3.452264 implies that the data is positively skewed and kurtosis coefficient of 17.80264. On average, firms wait 61 days to pay for their purchases which indicate that sampled firms selected for this study are able to meet their financial obligation towards their suppliers on the average of 61 days. Its standard deviation for the firms under the study is 46 days which deviates from both sides of the mean value. The account payable period ranges from 3 days to 238 days to pay their credit purchases.

The creditor's payment period is positively skewed with the value 1.213883 and kurtosis coefficient of 4.939697. Firms under the study receive payment on sales average of 43 days and it can vary by 32 days to both side of the mean value. The minimum and maximum debtor's collection period for the sampled firms is 2 and 158 days respectively

which means that most listed manufacturing firms in Nigeria have different debtor's collection policies which is shown by the wide variation observed in the Table 2. Debtor's collection period is positively skewed with the value 1.565637 and kurtosis coefficient of 5.659400.

Granger causality test

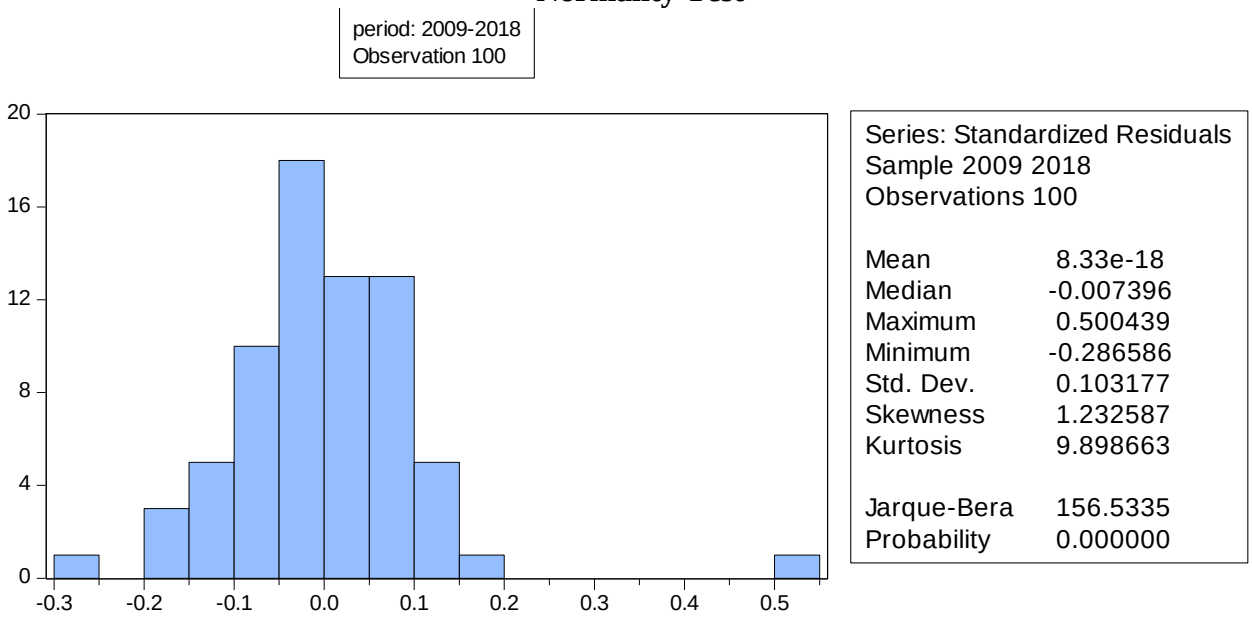
The causality test result shown in Table 3 reveals that there is no causality between current ratio, debtor collection period and Return on asset while there is causality between creditor payment period and return on asset.

Table 3. Pairwise Granger Causality Test

Direction of causality	Null hypothesis	F-statistic computed	5% critical value	Decision
Current Ratio to Return on Assets	No Causality	0.9640	0.3081	Accept the null hypothesis
Creditor Payment Period to Return on Asset	There is causality	0.7123	0.0122	Reject the null hypothesis
Debtor Collection Period	No causality	0.8217	0.5506	Accept the null hypothesis

Source: Own computation (2018)

Normality Test



From the result above, The Jarque-Bera test indicates that the residuals are normally distributed since the probability value is less than the 5% significance level. Hence, the hypothesis of normal distribution for the residuals is accepted.

Residual Cross-Section Dependence Test

It is necessary to carry out this test so as to know whether the error term in a particular period is independent of the error term in another period. Breusch Pagan LM is adopted for serial correlation test.

Table Result of Serial Correlation Test

Test	**Coefficient (P-Value)**
Breusch-Pagan-LM	122.4086 (0.0000)

Source: Own computation (2018)

The probability value for the Breusch Pagan LM test is 0.0000 which is less than 5% level of significance, and as such the null hypothesis that states there is no serial correlation is rejected.

Table 4. Multiple Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.150164	0.028344	5.297866	0.0000
CR	0.008113	0.011387	0.712448	0.4787
CPP	0.000432	0.000324	1.332811	0.1872
DCP	-0.001532	0.000461	-3.323090	0.0015
R-squared	0.151804	Durbin-Watson statistic		0.697060
Adjusted R-squared	0.113250			
F-statistic	3.937403			
Prob (F-statistic)	0.012015			

Source: Own computation (2018)

Table 4 shows the result of how each independent variable (current ratio, creditor's payment period and

The equation formula is given as $Y=\beta_0 +\beta\chi_{1+}\beta\chi_{2+}\beta\chi_{3+}\varepsilon_0$

$(ROA_{it}) = 0.150164 + 0.008113CR_{it} + 0.000432CPP_{it} – 0.001532DCP_{it} + \varepsilon_{it.}$

[0.028344] [0.0114] [0.0003] [0.0005]
(0.0000) (0.4787) (0.1872) (0.0015)

$R^2 = 0.15$ F-statistic = 3.937403(0.0120)
Durbin-Watson stat = 0.70

Regression estimate results

The regression table shows the results, using the Ordinary Least Squares (OLS) estimation technique on the first differenced series in the model, thereby capturing the short run relationships amongst the variables. The result shows that current ratio and creditor payment period though in sync with a priori are not statistically significant in determining profitability at 5%. Though, they are positively related to profitability. This finding is in line with Omar, Durah, Abdul, Rahman, Syed, Ahsan Jamil, Nour, Aldeen, Ghafeer (2016) and consistent with a priori expectations. However, debtor collection period, contrarily, showed to be negatively related to profitability among the infant manufacturing firms in Southwest Nigeria and also discovered to be statistically significant at 5% in the short run. The finding is in line with the studies of Deloof (2003), Lazaridis and Tryfonidis (2006), Raheman and Nasr (2007), Tewodros (2010).

The Durbin-Watson statistic of 0.6971 implied the acceptance of the null hypothesis of no serial correlation, while the low R-squared of 15% reflects the omission of important variables in the model. The R-squared shows that 15% of variation in profitability is explained by explanatory variables captured in the study while the remaining 85% is explained by variables not captured in the model. This is mostly expected since the study merely estimated the relationship between profitability, current ratio, creditor collection payment period and debtor collection period. However, statistically significant F-statistic shows the joint significant of the explanatory variables in explaining the growth in the model. Based on these criteria, it is concluded that the model is well behaved and appropriate for explaining the relationship between the variables of interest in the study.

Discussion of findings

The major objective of this study is to empirically examine the relationship between credit management policy and profitability of Nigerian infant manufacturing firms. In providing answers to research questions, the study discovered that there is no significant relationship between current ratio, creditor payment period and profitability at 5% level of significance. This result showed that current ratio and creditor payment period have no contribution to profitability. This implies that profitability will still improve without much consideration for current ratio and creditor payment period, though the relationships among them are positive which implies that holding other variable constant, an increase in current ratio or creditor payment period will lead to an increase in Return on Asset. This outcome is in line with the studies of (Omar Durah, Abdul, and Ghafeer 2016) and consistent with *a priori* expectations.

However, the results showed that there is a statistical significant relationship between debtors' collection period and Return on Asset ($p<0.05$). This result rejected the null hypothesis and accepted the alternate hypothesis that there is a significant relationship between debtor collection period and profitability of infant manufacturing firms in Southwest Nigeria. Debtors are organizations or people that owe the business money. The sooner debtors pay the business the better, so a short debtor's collection period is good. If debtors pay quickly, it helps cash flow and reduces the risk of customers not paying the money owed and improves profitability. This result is in line with that of Deloof (2003); Lararidis and Tryfonidis (2006), Raheman and Nasr (2007), Tewodros (2010). The result revealed a negative relationship between debtor's collection period and Return on Asset.

The study established the fact that profitability of infant manufacturing firms over time has not been so much affected by current ratio and creditor payment period and that either delay payment to creditors or not has little or no effect on profitability and so also liquidity position of the firms. However, a comprehensive collection system is critical to keeping infant manufacturing firms solvent. Effective debtors' collection strategy is discovered to be a more customer-focused collections process that turns even hard to find and difficult debtors into valuable customers while increasing recoveries and reducing costs that enhance business profitability.

5. Conclusion and Implication for Practice

Following the result obtained from this study, it is pertinent to state here that credit management in the area of current ratio and creditor's payment period have positive and insignificant relationship with the profitability of infant manufacturing firms in Southwest, Nigeria. However, debtor's collection period has a negative influence and a significant relationship with profitability of infant manufacturing firms investigated. With reference to the findings of the study, we recommend that infant manufacturing firms should try to

reduce the amount of idle current assets as much as possible to remain liquid. They need to monitor, review and adjust credit policy from time to time and make it easy to understand.

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PROMOTING THE USE OF THE CIRCULAR MODEL AND ITS RELEVANCE TO BUSINESS

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Abstract: *The purpose of the article is to identify and evaluate a circular economic model for economic agents within a sustainable development paradigm. Understanding the concept of circular economy, its different dimensions, and the difficulties economic agents experience in implementing specific activities can facilitate a major transformation of current production and consumption patterns that will have a significant impact on the economy, environment and society. Understanding these effects is important for decision-makers involved in future policy making in the field. Promoting the use of the concept of enterprise circular economy and policy-making requires an analysis of the potential opportunities and benefits that a circular economy approach could bring to businesses and economies.*

Key words: *circular economy, business model; resource efficiency, main process.*
JEL Classification: *Q01, Q20, Q50 .*

1. Introduction

The term "circular economy" was used for the first time in an economic model by Pearce and Turner (1990). Relying on the principle that "everything is a contribution to anything else," the authors analyzed the traditional traditional economic critical system and developed a new economic model called the circular economy that applies the laws of the Second Principle of Thermodynamics.

The relationship between the economy and the environment is predominant in this model that includes three environmental economic functions: resource provider, waste assimilater and source utility.

In defining the concept of circular economy, Pearce and Turner relied on Kenneth Boulding's work and other economists who pursued the biophysical limits of the current economic system built on consumption and a growing ecological deficit.

Boulding (1966) introduced the concept of closure systems and a foreseeable future economy that would work by reproducing the limited supply of inputs and recycling waste production. Such a "closed" economy maintains total capital and is in stark contrast to the "open" industrial economy of linear model materials.

The transition to a sustainable industrial economy requires structural and technological changes combined with economic and cultural evolution to achieve energy and material optimization.

In this context, Frosch and Gallopoulos (1989, p.149) argued that the optimization of the whole system requires improved manufacturing processes "that minimize the generation of non-recyclable waste and the permanent reduction of the consumption of limited material and energy resources".

In their view, innovation is necessary in the process of manufacturing and designing products and processes to effectively direct materials to the production process, which were formerly considered waste.

Industrial symbiosis applies the principles of industrial ecology at company level and provides for the development of collaboration between companies involving the exchange of resources and by-products. The concept involves collaboration between producers in order to use the by-products of the production activity. In practice, addictive addiction is created to eliminate waste but also contributes to the sustainable development of producers.

This collaboration is not necessarily limited by geographical proximity and can lead to the development of networks that share knowledge and promote eco-innovation (Lombardi and Laybourn, 2012).

"Cradle-to-cradle" design is an adjacent systematic approach to transforming industrial material flows. Unlike traditional concepts of sustainability that focus on reducing or eliminating the negative environmental impact of human activity, Cradle-to-cradle aims to maintain and even enhance the value, quality and productivity of material resources .

The use of the knowledge flow of information flows among actors in the value chain is a key factor in maintaining or increasing the value and productivity of these material.

Apart from the material aspects, the additional principles of the Cradle-to-Cradle concept are the use of renewable energy sources and the promotion of biodiversity as well as cultural and social diversity (McDonough and Braungart, 2002).

2. Defining the concept of circular economy

Since the first official use of the term circular economy, there have been many attempts to define this concept. A number of authors have provided resource and / or interpretation-oriented definitions, highlighting the need to create closed loops of material flows and reduce the consumption of virgin resources and its harmful impact on the environment.

For example, it consider that the circular economy refers to "the production and consumption of goods by streams of closed loop materials that internalize the environmental externalities related to the extraction of virgin resources and the generation of waste pollution.

In the same sense, the EEA (2014, p.11) argues that the circular economy "mainly refers to material resources of the economy and focuses on recycling, limitation, reuse and the use of waste as a resource that reduces the consumption of primary resources."

Mitchell (2015) emphasizes that the importance of a circular economy is to keep resources in use for as long as possible and to extract the maximum value of products and materials by using and then recovering and reusing them.

In the literature there are also some interpretations of the concept of circular economy that incorporates additional dimensions beyond the notion of material resource management.

One of the most used definitions incorporating elements from various disciplines is: "an industrial system that is renewable by intent and design. "This replaces the concept of "end of life" with restoration, the shift to the use of renewable energy, and aims at eliminating waste through the superior design of materials, products, systems and within this business model".

This interpretation of the concept involves the distinction between two different types of materials: biological materials returning to the biosphere as raw materials (eg forest products) and technical materials that biodegrade and enter the biosphere (eg plastics and metals). In this framework, the circular economy aims to maintain both types of material to the greatest benefit and value at all times, through careful design, management and technological innovation.

The overall objective of the circular economy is to enable effective flows of materials, energy, labor and information to contribute to the reconstruction of natural and social capital.

At EU level, the European Commission (2015, p.2) included a description of the concept in its Communication "Closure of the loop - an EU action plan for the circular economy", which is part of the Circular Economic Package. Specifically, the circular

economy is described as an economy "in which the value of products, materials and resources is maintained in the economy for as long as possible and waste generation is minimized".

The move to a circular economy is "an essential contribution to the EU's efforts to develop a sustainable, low-carbon, resource-efficient and economically efficient carbon system." In this context, the EU Action Plan includes a a series of measures addressing the whole cycle of production and consumption to waste management and the secondary raw material market The measures included in the Action Plan reflect a change in EU waste policy that has traditionally focused on end-of- life and material management.

However, comparing this description of the circular economy with existing literature, one might argue that some elements are missing or not very explicit. An example is the notion of keeping products and materials at the highest value and utility. Although the Action Plan mentions that the circular economy can create local jobs at all levels of skills, integration and social cohesion opportunities, at present, no particular attention is paid to improving social welfare

Similarly, despite the use of the term "resources", which may also refer to energy resources, the importance of using sustainable energy sources in the system as well as the link between the circular economy and the energy challenge should be better emphasized as regards their description.

The circular economy introduces a new segment into the product lifecycle, namely the recovery of materials from dismantling, recycling and re-use as secondary raw materials in other early-life products.

3. Comparisons between the linear economy and the circular economy

The current economy relies heavily on a linear economic approach based on resource extraction, goods and services production, and waste disposal. Non-renewable resources previously considered to be inexhaustible reach the limits of affordable supply, and the negative environmental impacts such as climate change and biodiversity loss are accelerating and regulated at local, national and international levels.

Moreover, new technological disruptions, emerging markets and business models change the way of thinking about the production and consumption of goods and services. Linear business models depend on short life cycles of products and maximize sales. Improving sustainability focuses on eco-efficiency: maximizing economic gain with minimal impact on the environment. These models are market conditions that are threatened by technology-based service models and changing consumer demand for more tailored and sustainable products.

As a result, companies that continue to operate in the old linear paradigm risk losing customers and access to markets, increased costs, and so on. In a circular economy, the use of resources is decoupled from economic growth, which means that economic development no longer requires similar consumption of resources. Resources are used more efficiently and the economy becomes less dependent on unprofitable resources.

Circular economy is based on an emerging economic model that covers both techniques and business models to keep the materials and resources used as much as possible and ideally for all time in a closed extended use cycle , reuse and recycling. The critical elements of the circular economy are industrial symbiosis, renewable materials, shared economy, product as a service, close relationship between producer and consumer, proximity economy, reuse, recycling and recycling, urban mining, detoxification of material cycles and sustainability of consumption and production.

Unlike circular economy, they are disposable, programmed wear, downcycling, inherited substances, or value loss.

Table 1. Comparative analysis of the linear economy model and circular economy model

Linear Economy	The Circular Economy
Dependence on Primary Resources of Raw Materials	Reduction of inputs of primary resources and energy The necessary initial investments can damage the profit of companies in the short term The cost of the transition -
volatility of primary resource prices radical changes in the consumer	products or service relationship in the circular economy, in the sense that we may become users rather than consumers
Limited opportunities for expansion to new markets	
Increasing the number of legislative acts related to environmental protection, impacting on the prices of products	Reduction of value losses Reducing waste management costs
Growth in population and financial wealth with positive effects on consumer demand but with negative effects on the environment Effects on climate change	The unknown residual value of many products due to the narrow market for recycling, reuse, reprocessing or repairers Products / businesses that become useless in old linear business practices
	Market demand for products is dependent on collaboration on the value chain c

Source: data processed by the author

4. Transition to the circular economy

In the last decades, there has been an unprecedented increase in resource demand, driven by the rapid industrialization of emerging economies and a high level of material consumption in developed countries. There are also considerable variations between regions; consumption of materials in developed countries tends to be several times higher than in developing countries. By 2050, the world population is forecast to grow from about 7 billion to more than 9 billion, and the per capita income of the world's population about three times. This will substantially increase the demand for natural resources and probably lead to increased production costs for some resources, and an increased risk of supply shortages.

The transition to the circular economy tends to involve low demand for certain natural resources and materials derived from them.

The creation of material loops implies the replacement of secondary materials (ie those already used in production processes and from the recycling of industrial or household wastes) and second-hand, repaired or redesigned products for their virgin products or new equivalents. Delay in material flows implies the appearance of products that remain in the economy for longer, usually due to the more durable design of the product.

Reducing material flows implies a more efficient use of natural resources, materials and products, either by developing and disseminating new production technologies, by increasing the use of existing assets, or by changing the consumption behavior outside of intensive consumption goods and services.

In conclusion, a "transition to a circular economy" could be considered as involving any process that could lead to a lower rate of extraction and use of natural resources.

An improvement in resource efficiency describes a situation where there is a higher economic value with a certain amount of resources or one where fewer resources are used to produce a certain level of economic value. Decoupling is used to describe an improvement in resource efficiency, typically at the aggregate of the economy.

Absolute decoupling refers to a situation where the value of economic output is increasing, while the amount of resources used is decreasing.

Increased efficiency of resources is considered:

- increasing the production of secondary materials on the domestic market in order to reduce imports and production of virgin material resources can reduce the supply risks;
- Activities that will lead to a circular economic transition could also become important engines of restructuring, job creation and growth;
- Opportunities will arise in various sectors, including the secondary production of materials, repair and repair of the reconstruction, the services sector and the divestment economy.

Given the natural nature of many natural resources, it is often concluded that the future resource deficit could become an obstacle to long-term economic growth.

In this context, the decoupling of the economic production of the use of natural resources is considered vital.

Natural resources and materials derived from them are the physical basis for economic growth. Reduced mining, processing and disposal of natural resources can have significant environmental effects and more efficient use of resources could be an important tool for achieving climate goals and other environmental objectives.

Also, low dependence on critical resources and materials, as well as improved security of access to materials resulting from the provision of extensive internal secondary materials; the supply risks associated with future geopolitical shocks could be mitigated in importing countries.

Thirdly, the activities that will lead to any circular economic transition could also become significant factors for job creation and economic growth. New opportunities will emerge in various sectors, including secondary material production, repair and reconstruction, service sector and sharing economy.

Given that different sectors may expand and contract to varying degrees during the transition to a circular economy and that individual sectors have different material intensities, these economic flows must also be linked to their physical equivalents .

Any such transition will involve more interactions across sectors and countries and will take place alongside other trends such as digitization and automation.

These cyclical economic processes can be adopted by companies and countries and may involve economic, environmental and social impacts.

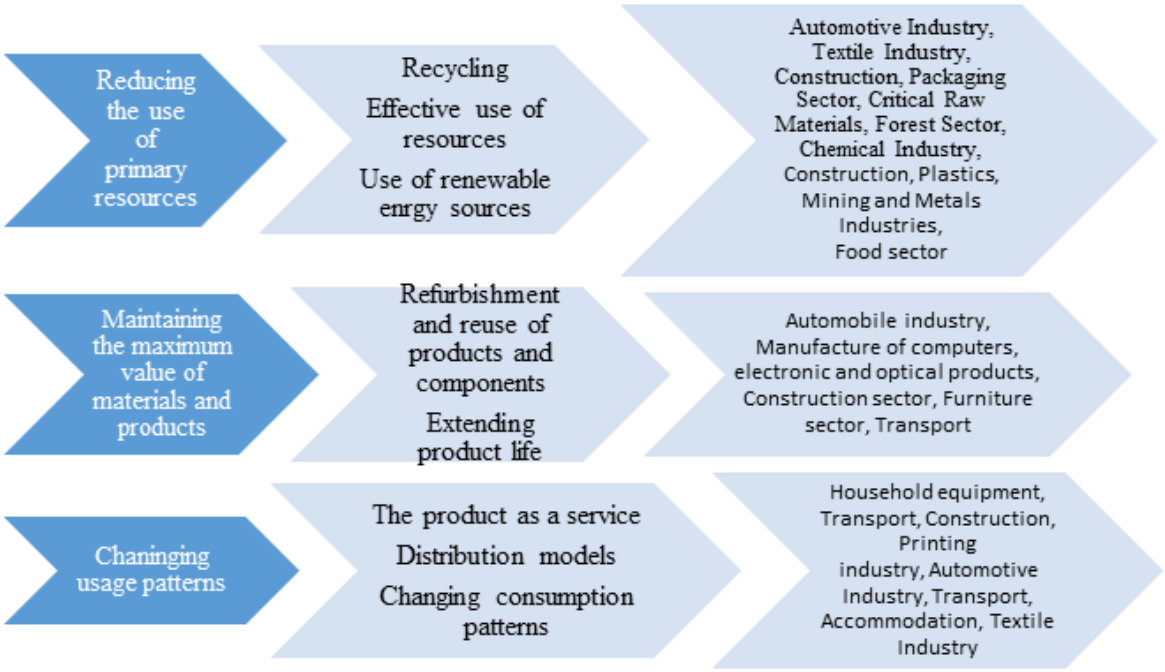
At business level, these processes can be understood as representing the different circular practices that an economic agents uses to move from a linear to circular business model by providing a circular product or service.

Understanding Circular Economy processes aims to understand how economic agentscan implement the circular economy in practice.

Identifying the main processes of the circular economy from the literature, the following eight processes have been identified: recycling, efficient use of resources, use of renewable energy sources, refurbishment, prolongation of product lifetime, renovation and reuse of products and components, product as a service, distribution models, changing patterns of consumption, which can be further classified into three different categories, namely:

a) reducing the use of primary resources;
b) maintaining the highest value of materials and products;
c) changing usage patterns (Figure 1).

Figure 1. The main processes of the circular economy



Source: data processed by the author based on the study: *Implementation of circular economy business models by small and medium-sized enterprises (SMEs): Barriers and enablers*, Rizos et al, 2016

Categories of circular processes are not mutually exclusive. Many of their elements are often interconnected, while in some cases economic agents can adopt a strategy involving more circular processes.

Recycling is the reintroduction of residual materials into production processes so that they can be reused in new products. This is not a mere recovery of materials, but a redirection of recovered materials to their next life cycle. The issue of quality is important for this purpose, because high quality recycling is a prerequisite for the effective reintroduction of materials into the production process.

Recycling is the most traditional way of applying the principles of circular economy by capturing the value of existing products and materials and reducing the use of primary materials. Reducing the extraction of primary resources through recycling is an advantage and may also contribute to reducing GHG emissions associated with the use of material resources.

Increased recycling can be cost-effective for industries, and for industries that depend on raw materials, the use of secondary materials may reduce the need to acquire or extract primary materials.

Using recycled materials can reduce the price volatility associated with primary raw materials and dependence on material imports. An example of this is recycling from critical raw materials (CRMs) often imported from third countries.

Removing waste from the industrial chain by reusing the materials to the greatest possible extent promises savings in production costs and lower resource dependence. The

benefits of a circular economy are not only operational but strategic, not only for industry but also for customers, and serve as a source of efficiency and innovation.

Economies will benefit from substantial substantial savings, mitigating volatility and supply risks, innovation factors and job creation, improving soil productivity and soil health, and the long-term sustainability of the economy.

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5. Changing Usage Models

The product as a service

The product as a service can be implemented through leasing, rental, pay-per-use or performance-based business models.

The following product-service model categories have been identified:

- Payment per service unit where the consumer pays for product production in line with the level of use (eg pay-per-print services offered by copiers). The business that sells the service is responsible for costs over the lifetime of the product.
- Hire or share a product if consumers purchase access to the product through an agreement for a period of time.
- Leasing the product if the consumer has permanent access to the product.
- Sharing products where many customers use the same product at the same time. This subcategory is closely related to distribution patterns (for example, car sharing).
- In all the above mentioned cases, the company retains its ownership of the product and provides its customers with access to it. In this way, the company maintains the material resources at its disposal.

This practice brings environmental benefits because the model motivates the company to repair and keep the product in use for a longer period of time.

Through recycling and refurbishment practices, waste generated during product life may decrease.

Other environmental benefits may also arise from the product as service models; for example, it is estimated that customers who choose their product as a service model can reduce their associated energy by up to 40%.

Since leasing models sell the product to the producer, the energy savings achieved depend on the optimal replacement rate for each product and on how the changes in the substitution behavior between the circular and the linear model.

"Product as a service practice" is often closely related to the "product lifecycle" process. Such economic processes have also been adopted in the consumer electronics and consumer electronics sectors, for example in the form of pay-per-use models (in the use of washing machines).

These traditional products as service models have recently been complemented by elements enriched by digital technologies. For example, new business models connect washing machines to the internet, allowing laundry customers to check the availability of washing.

- *Distribution models*

Distribution models are inextricably linked to the concept of circular economy because they aim to reduce the under-utilization of products and thus support the more efficient use of resources.

In addition to the exchange of products and services between people, this circular process can also take the form of technology and infrastructure exchange between industry partners.

Although these models have the potential to radically transform patterns of consumption into the environment, it can be argued that more research is needed to better assess the extent of environmental benefits.

Distribution models have been used in vehicle sharing and accommodation and are facilitated by the benefits of digital technology. These are sometimes referred to as "collaborative consumption" as they are often implemented through social platforms.

The distribution patterns, as well as the idea of extending the life of the product, are also related to the idea of sufficiency as a business model.

Sufficiency is based on the principle of general resource resource moderation, focusing on reducing demand by changing consumer behavior through education. In order for the product to work and the exchange of economic models to develop, a change of consumer's mentality is necessary.

- *Changing consumption patterns*

Technological advances as well as improved information for consumers may result in a change in demand patterns.

For example, many consumers choose products / services that offer practical utility instead of materials such as digital books, smart phones, music and online stores.

At the same time, businesses can deliver products using virtual channels and communicate more with customers through emails and social networks.

These exchanges can also lead to resource savings and increased productivity.

6. Conclusions

Based on the review of the literature, the study provides a reflection on the concept of circular economy, an overview of the main circular economic processes, and their applications in different sectors.

The multitude of interpretations of the concept of circular economy and the wide range of issues and priorities it embodies is reflected in the diversity of definitions presented. While some definitions and interpretations focus on physical and material aspects, others envisage a major transformation of the economic system that involves different sectors and issues that go beyond material resources and waste.

Circular economy is a complex concept and it is unlikely that in the short term there will be an international consensus on its meaning. However, at the level of EU policies, more clarity is needed with regard to the areas and sectors that can enter the circular economy. This can help to avoid confusion and to produce impact assessments that will provide consistent messages on the potential effects of the circular economy. Circular processes presented in the study can be implemented by businesses and have significant potential to provide economic, environmental and social benefits. In each case where a circular economic process is applied to a sector, careful consideration must be given to all parameters that may play a role in the overall sustainability of the circular process that replaces a linear one. It is also necessary to understand the indirect effects on the economy (eg impact on the value chain and / or changes in consumption patterns) to estimate the overall impact at EU or national level.

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IMPLEMENTING ENVIRONMENTAL ISSUES IN THE RESPONSIBLE MANAGEMENT OF ORGANIZATION

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Abstract: *The responsible management of the organization can be defined as a way in which an organization's activities are planned, organized and evaluated taking into account the global environment's interests for the development and prosperity of both the present generation and the future. An important aspect in achieving this goal is the implementation of environmental aspects in the sustainable development of the organization. Sustainable development policy helps the organization to avoid, reduce or control the harmful impact of the sale of activities on the environment and the population, to comply with legal requirements. The goal of all parties involved is to respect environmental legislation, with a view to harmonious development of the area and of the world. Addressing responsible management implies the involvement of all stakeholders in adopting those decisions that lead to the sustainable development of an organization. This paper presents theoretical aspects regarding the integration of environmental aspects in the concept of responsible management at the level of an organization and practical transposition on the example of SNTGN Transgaz SA.*

Key words: *responsible management, sustainable development, environmental.*
JEL Classification: *M14, Q01, M21.*

1. Introduction

Responsible management can be described as an attempt to maintain the balance between the interests of the entire world (people, firms, the environment) for the prosperity of both the present and future generations.

In order to respond to this principle, the policies adopted within the company aim to:

- minimizing the negative impact of the activity on the natural and social environment;
- generating economic benefits to local society;
- improving working conditions;
- Conservation of natural heritage.

Sustainable development policy helps the organization avoid, reduce or control the deleterious impact of its activities on the environment and the population, comply with applicable legal requirements and may be part of a trend that customers appreciate.

The goal of all parties involved is to respect environmental laws with a view to harmonious development of the area and the world. The approach of responsible management requires the involvement of all stakeholders to adopt those decisions that lead to the sustainable development of the organization.

The responsible management of the organization is the way in which an organization's activities are planned, organized and evaluated taking into account the interests of the global environment for the development and prosperity of both the present generation and the future generation. An important aspect in achieving this goal is the implementation of environmental aspects in the sustainable development of the organization.

Integrating environmental, social and economic aspects into the organization's management leads to the implementation of responsible management

SNTGN Transgaz SA is the technical operator of the national transport system and is responsible for its operation in terms of quality, safety, economic efficiency and environmental protection. This paper presents theoretical aspects regarding the integration of environmental aspects in the concept of responsible management at the level of an organization and practical transposition on the example of SNTGN Transgaz SA

2. The importance of environmental management in the responsible development of society

More and more types of organizations are increasingly concerned to achieve and demonstrate clear environmental performance by controlling the impact of their own activities, products or services on the environment and taking into account their environmental policy and objectives. These issues are in the context of ever-stricter legislation, the development of economic policies and other measures aimed at encouraging environmental protection, increasing stakeholders' concerns about environmental issues, including sustainable development.

International environmental management standards are designed to provide stakeholders with the elements of an environmental management system that can be integrated with other management requirements to help organizations achieve environmental and economic objectives. These standards, as well as other similar international standards, are not intended to create non-tariff trade barriers, increase or change the legal obligations of an organization.

Adopting and systematically implementing a set of techniques for environmental management can help deliver optimal results for the benefit of all stakeholders. However, adopting an environmental standard will not guarantee it alone optimal environmental outcomes. In order to achieve environmental objectives, it is recommended that the environmental management system encourage organizations to apply the best available technology if it is appropriate and economically viable. In addition, it is recommended to take into account the full cost of the efficiency of such technology.

In order to have environmentally responsible management, activities are needed to help the organization be prepared for the environmental requirements that are in place, and to successfully and efficiently implement these requirements.

In order to ensure an efficient development and implementation of the responsible environmental management system, it is necessary to entrust appropriate duties and powers, ie a balance between service tasks and authority.

An important component of the current concept of sustainable development, the environmental protection strategy must be thought today in a formula accepted by all governments of the world that devoted to maintaining a global, regional or local ecological balance of major importance for the purposes of social and economic policy. The first step in environmental policy and strategy is prioritization. Once priorities have been established, instruments for enforcing environmental policy must be chosen.

Environmental management tends to become, in our country, increasingly integrated into the practice of responsible management towards community involvement. Environmental management is a component of the overall management system, including organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, realizing, analyzing and maintaining environmental policies.

For contemporary society, environmental protection is of major importance, because economic development takes place within the framework created by the environment in which we exist and operate.

By definition, the environment represents the whole at one time of the natural - physical, chemical, biological and social factors (created through human activities) which, in close interaction, influence the ecological balance and determine the living conditions for man and the development of society.

Environmental protection issues have profound implications in all organizations, regardless of their size. Positive attitude towards environmental protection is an essential factor in the indefinite development of each organization.

Sustainable development addresses the concept of quality of life in complexity in economic, social and environmental terms, promoting the idea of a balance between economic development, social equity, efficient use and environmental conservation. The key element of sustainable development is reconciliation between development and environmental quality, promoting the integrated process of development and decision-making, both globally and regionally, nationally or locally. Sustainable development also depends on the correct distribution of the costs and benefits of development between generations and nations.

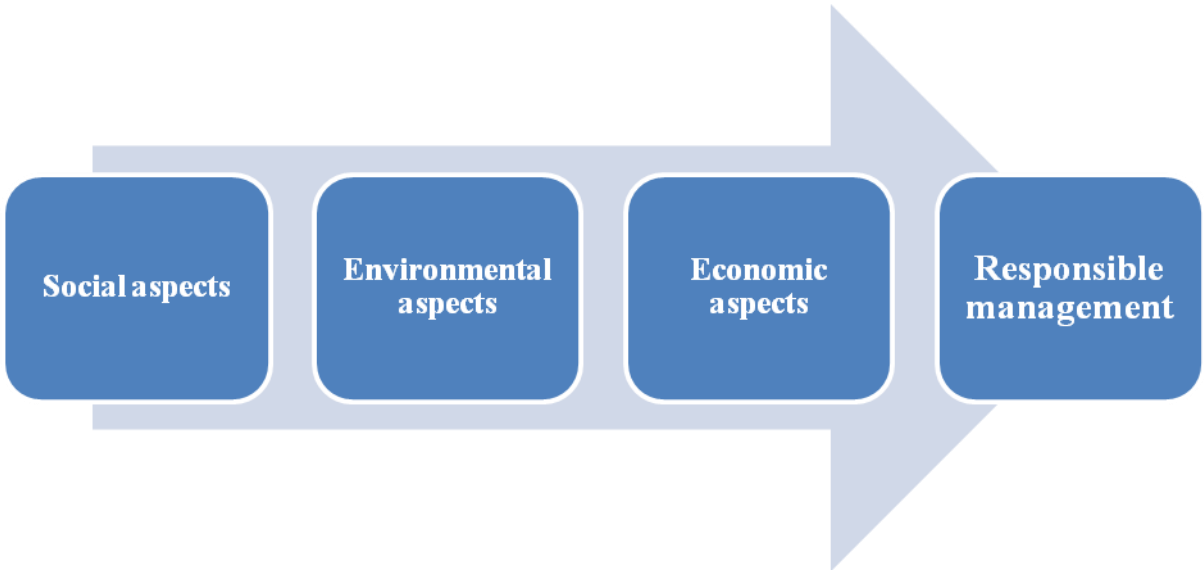

Figure no. 1. Components of responsible management

The objectives of economic and social policy for achieving sustainable development are:

- redimensioning economic growth to conserve natural resources;
- changing the quality of economic growth processes;
- meeting the essential needs for all inhabitants (work, food, energy, water, housing);
- ensuring a level of controlled population growth;
- preserving and enhancing the resource base;
- technological restructuring and putting it under control;
- integrating decisions on the economy, energy and environmental protection into a single process.

Sustainable development is a very dynamic concept, with many dimensions and interpretations, seen as a process of permanent change, very closely related to the local context, needs and zonal priorities, but the major principles that characterize it are the following:

- Preoccupation for fairness and fairness between countries and between generations;
- Long-term vision of development;
- Systemic thinking - the interconnection between environment, economy and society.

Sustainable development strategies highlight interdependence between local and global, between developed and developing countries, emphasizing the need for cooperation within and between the economic, social and environmental sectors.

It has been found that, in order to achieve sustainable development, it must be combined with economic and demographic development in order to ensure environmental and resource conservation measures.

3. Responsible management within SNTGN Transgaz SA

Starting from the definition of sustainability, "meeting today's needs without sacrificing the ability of future generations to meet their own needs," also known as sustainable development, we underline the importance of such a development policy.

Sustainable development policy helps the organization avoid, reduce or control the deleterious impact of its activities on the environment and the population, comply with applicable legal requirements and may be part of a trend that customers appreciate.

The main pillars of sustainability are:

- creasing competitiveness through innovation and transfer of new technologies;
- protecting the environment by implementing environmental management systems, by streamlining processes or by reducing the consumption of natural resources;
- technological development and integration of IT in the company by developing IT staff that will substantially increase the added value in the department's company, ie the ability to adapt to the market requirements;
- ♣communicating and developing human resources through interactive methods and key situations simulations.

The commitment assumed by the company's management through the "Quality Policy-Environment, Occupational Health and Safety Management Policy Policy Statement" is a clear proof that TRANSGAZ is responsible for ensuring an organizational climate in which all stakeholders: employees, shareholders, clients , suppliers, community and environment can interact effectively and responsibly both economically and socially.

The main activities in the field of environmental protection in 2017 were planned and organized, aiming to prevent pollution, to reduce the risks of producing environmental incidents on the sites within the company, as well as to comply with the legislative provisions in the field.

The locations within the company, as well as the compliance with the legislative provisions in the field. The main directions pursued were:

a. Monitoring of regulatory acts

From the point of view of the water management permits, the legislation in the field requires obtaining regulatory documents for all objectives related to the waters. As a result, the company owns 130 water management permits for crossing water courses with natural gas pipelines, out of which 2017 have been submitted renewal documentation for 17 of them.

According to the procedures issued by the National Environmental Protection Authorities, the Integrated Environmental System was registered for the development, repair and maintenance of the national gas transmission system.

b. Assessment of compliance with relevant legislation

This activity was carried out by planning the various types of integrated internal inspections, at the level of the Department of Environmental Quality, Protection and Security, as well as at Territorial Exploitation, being carried out by specialized inspectors from each field.

As a result, environmental inspections have been established following these inspections to assess compliance with the legislation and to improve the activity.

In 2017, SNTGN Transgaz S.A was subjected to a number of 15 external inspections carried out by the control structures within the National Environmental Guard, the Romanian Water Administration, the Environmental Protection Agencies as follows

Following controls and inspections, sanctions were not applied and only improvement measures were established, as shown by inspection reports by the control authorities, in the areas of:

- the waste disposal;
- analysis of environmental factors;
- authorizations for water management;
- contingency plans for accidental pollution;
- the handling and storage of dangerous chemicals and preparations.

c. Specialty reports to relevant authorities

Monthly and quarterly reports have been prepared for the authorities in the field, as required by regulatory acts held by the company. Waste management was produced at the company level and reports were made to the authorities according to the obligations of the environmental permits. Annual Environmental Reports for each Territory Exploration have been prepared and transmitted according to the environmental permit requirements.

d. Maintaining the certification and transition to the new ISO 14001: 2015 standard for the Environmental Management System

In 2017 the internal training of environmental inspectors was carried out, where the SRAC Surveillance Audit Report was presented, resulting in four areas of improvement in the environmental protection activity, namely:

- monitoring the implementation of the measures imposed following the inspections;
- specifying environmental aspects in projects;
- the disposal of the types of waste resulting from repair works

At the same time, the transition to the new ISO 14001: 2015 standard was started by identifying all the processes related to the activity and drawing up the Flow Diagrams and Process Sheets.

e. The activity carried out by the Environmental Factors Monitoring Laboratory

In accordance with the requirements of the Environmental Authorizations issued by the National Environmental Protection Agency in Bucharest, the monitoring involved systematically conducting measurements of the environmental factors on the company's sites as follows:

- configuring measurements on the noise level;
- determination of emissions of atmospheric pollutants (co, nox, so2) from the combustion gases from compressor stations, thermal power stations, convection stoves and gas heaters;
- identification of different situations not complying with environmental protection legislation and / or accidental pollution;
- manufacturing of measuring bulletins, environmental assessment sheets and monitoring reports.

The implementation of sustainable development aspects in the management of the organization implies:

- modernization of natural gas odor systems;
- reducing the impact of technological processes on the environment;
- reducing technological consumption;
- scientific research and projects in the field of natural gas transport.

The company has aligned itself with the international management systems and with the implementation and certification of the Integrated Quality Management System -

Medium, Health and Occupational Safety according to SR EN ISO 9001: 2015, SR EN ISO 14001: 2015 and SR-OHSAS 18001: 2008. The Standard permits to keep under control the health and safety risks of its own employees or providers operating on the organization's premises

The advantages of implementing SM-SSO are:

- improve the company image;
- improvement of relations with business partners;
- improving relations with competent authorities in the field;
- creating a unique and coherent framework for the elimination of hazards and risks related to work;
- setting a more effective control over the risk factors for injury and / or professional illness

4. Conclusions

The responsible management of the organization is the way in which an organization's activities are planned, organized and evaluated taking into account the interests of the global environment for the development and prosperity of both the present generation and the future generation. An important aspect in achieving this goal is the implementation of environmental aspects in the sustainable development of the organization.

SNTGN Transgaz SA, consistent with the principle of applying responsible management in fulfilling the assumed mission, is aware of the importance that sometimes financial support for a noble cause or for an important purpose is vital and therefore through the programs and projects of social responsibility initiated, is actively involved in community life, demonstrating his status as a "good citizen".

As part of the SNTGN Transgaz SA sustainable development strategy, the social responsibility policy aims to increase the company's commitment to employees, shareholders, partners, the community and the environment, as well as streamlining the impact of social responsibility programs initiated for this purpose.

The company's responsible management policy is based on a set of principles that define this interaction between the company on the one hand and employees, shareholders, partners, community and the environment on the other.

Practice confirms the need to step up efforts to accept responsible management, as it has been noticed that organizations dedicated to implementing its principles have even managed to maximize their performance.

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THE ROLE OF MANDATORY OBLIGATIONS IN FINANCING THE TRANSFORMATION OF THE EUROPEAN ENERGY SECTOR

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Abstract: *The transition to a low-carbon, resource-efficient economy implies multiple environmental benefits. Financial stability is threatened by the consequences of climate change that can lead to major economic losses in case of droughts or floods, soil erosion. The financial system has an important role to play in tackling the impact of climate change by securing funding for green investment. The current level of investment is not enough to promote an environmentally sustainable economy and to combat climate change and depletion of resources. To achieve the objectives of the European Union, the Paris Agreement requires additional investment of € 180 billion, so more private capital flows need to be directed towards sustainable investment. In this context, the objective of the research is to determine the level and trends of financing through green bonds of the capital requirement for transforming the European energy sector into a sector that uses renewable energy to produce energy.*

Key words: *climate change, green investment, sustainable economy, green bonds, european energy system.*

Classification JEL*: Q56, E22.*

1. Introduction

A major risk for millions of people around the world is climate change, mainly caused by global warming. The frequency and severity of weather phenomena affects the wealth of companies and companies, as phenomena such as heat waves, droughts, floods, storms are expected to grow.

Attenuating global warming requires rapid, profound and unprecedented changes in all sectors of the economy.

Efforts to bring savings back on a sustainable path have increased due to concerns about the impact of environmental degradation and climate change on economic, social and financial systems.

Adaptation of national economies to sustainable development objectives and the achievement of the Paris Agreement are major achievements in order to formulate a global response to stimulate sustainable growth and tackle climate change.

To achieve the 2° C objective set by the Paris Climate Agreement, considerable investment is needed.

The private and public sectors also face a growing need to adapt to the challenges and consequences of environmental degradation and the impact of climate change, while trying to capitalize on business and development opportunities.

Green Bonds are financial instruments designed to help mitigate the impact of climate change. They are also a means by which companies engage in profound transformation by financing their green assets.

Thus, they are used to attract capital to finance the transition to a low-carbon economy.

Since the launch of the first green bonds in 2007/2008, issues have risen at a rapid pace, diversifying both issuers, products and currencies.

2. Define the concept of green bonds

Green bonds are traditional bonds but attracted capital is used exclusively to finance eligible green projects.

This definition includes climate change and focuses on investments related to mitigation or adaptation.

Green bonds, in addition to traditional bonds, are subject to a monitoring system to determine whether they have actually produced the expected environmental outcomes. The use of green bonds allows the issuer, compared to traditional bonds, to attract institutional investors.

These bonds have a maturity of three to ten years and usually offer a fixed rate of return.

Issuers are rated for credit ratings, which, in the case of institutional investors, is usually high - AAA. This keeps the cost of credits for projects supported by green bonds low.

Green bonds are seen as an innovative financial instrument being promoted by international public and private sector leaders to fund green-energy projects and activities and to facilitate the transition to a low-carbon and efficient economy view of the use of resources.

Green bonds also offer high transparency to investors about:

- the attracted funds and their destinations, respectively the financing of projects or activities considered green;
- the selected projects have to benefit the environment;
- the issuer's commitment to make public the information on the use of funds and the environmental benefits throughout the life of the bond or projects.

There is currently a high demand for green bonds from investors concerned with the impact of investment on the environment.

3. The principles of green bonds

An important development in the history of the green bond market was the establishment of their principles in early 2014.

Bonds to be in the green category must comply with a set of basic principles, which are voluntary guidelines issued by different international bodies and updated annually after consultation with stakeholders (issuers, investors or investment banks). They encourage transparency and market development without imposing excessively high criteria.

The four components of the Green Bond Principles are:

1. Use of revenue: the most important aspect of green bonds. Thus, it has to be made clear how the capital attracted by the bonds in the documents accompanying the issue will be invested, and the revenues should be used to finance projects with environmental benefits.

2. The project evaluation and selection process - the decision-making process concerning the eligibility of projects is clearly presented.

3. Income management: the income earned on green bonds must be kept separately. It should also be sufficiently transparent to allow auditors to check the tracking and allocation of funds.

4. Reporting: Issuers need to provide information on projects that have been funded by greenhouse issue funds.

The Green Bonds principle explicitly mentions several broad categories of potentially eligible green projects addressing key areas such as climate change, natural resource depletion, biodiversity loss and / or pollution control.

Updated in June 2017, these broad categories are:

1. renewable energy;
2. energy efficiency (such as new and refurbished buildings, energy storage, centralized heating, smart grids);
3. pollution prevention and control (including emission reduction, waste water treatment, greenhouse gas emission control, waste prevention, soil remediation);

4. environmentally sustainable management of natural resources and land use (including environmentally sustainable agriculture, sustainable forestry, eg afforestation or reforestation, and preservation or restoration of natural landscapes);

5. conservation of terrestrial and aquatic biodiversity (including coastal, marine and hydrographic environment protection);

6. clean transport (eg electric, hybrid, public, rail, non-motorized, low energy consumption and low emissions);

7. Sustainable water and wastewater management (including clean water infrastructure, waste water treatment, sustainable urban drainage systems and other forms of flood mitigation);

8. adaptation to climate change (including the development of information transmission systems, such as climate observation and early warning systems);

9. Products, technologies and production processes geared to the eco-efficient and / or circular economy (such as the development and introduction of green products, eco-labeling or eco-certification, resource-efficient packaging and distribution);

10. green buildings complying with recognized standards or certifications.

With the help of the Green Bond Principles, eligible projects (eg renewable energy, energy efficiency) are identified, but they do not provide criteria for assessing the environmental benefits of the project.

In this context, the main international agencies have implemented best practices among issuers. Thus, they have established internal processes for environmental assessment of projects and have adopted high standards of environmental benefit reporting. For example, the European Investment Bank's green paper 2015 reports provide details on the projects financed and their impact on greenhouse gas emissions.

Several development banks propose a framework for reporting the impact of renewable energy projects and energy efficiency.

However, this reporting is difficult to implement in the corporate sector due to administrative costs.

4. Evolution of green bonds

At global level, green bonds are the most advanced form of funding for environmentally-friendly projects.

The first green bonds were launched in 2007 by the European Investment Bank, and the first private sector companies started issuing green bonds starting in 2013. Later, in 2016, the first green-house bond issue launched by Poland , followed by other countries in Europe (France, Belgium, Ireland) or the world (Fiji, Nigeria).

The market for these green financial products started in 2007, and in 2013 it was 13 billion dollars, demonstrating how quickly it responds to the need for a transition to sustainable technologies.

The market started to grow in 2014 with green corporate bonds, but the biggest increase occurred in 2017.

It has continued to grow as a result of the rapid development of new green markets, overlapping with continued and global political impetus to tackle climate change.

Europe remains the strongest and most developed market for green bonds.

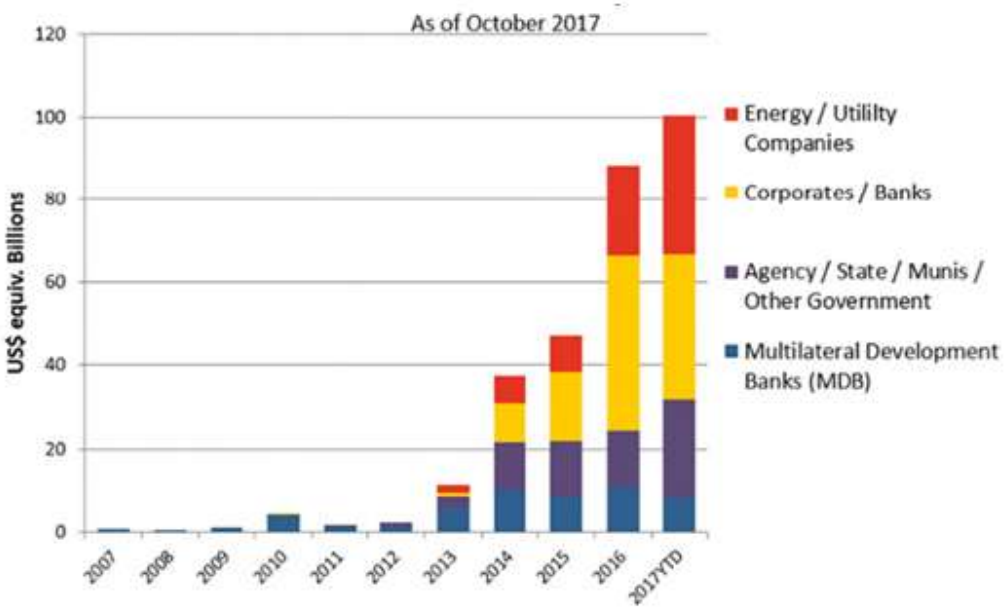

Chart no. 1 The evolution of the green bond market

Source: Environmental Finance, 2018. *The green bond evolution. MSCI, Bloomberg, Barclays*. [online] Available at: <https://www.environmental-finance.com/content/the-green-bond-hub/the-green-bond-evolution.html> [Accessed 2 March 2019].

5. The green bond market in Europe

The European Union supports the transition to a low-carbon economy, a resource-efficient economy, and is also at the forefront of efforts to build a financial system that supports sustainable growth.

The Paris agreement also includes a commitment to channel financial flows to sustainable development.

The financial sector plays a key role in achieving these objectives. It may:

- reorient the capital towards sustainable investment;
- financing growth in a sustainable long-term manner;
- contribute to the transition to low carbon, climate-resilient economies.

The European Investment Bank was the first to issue green bonds in 2007 and was labeled Green Bond for Climate Awareness. In 2012, the Île-de-France region issued the first municipal green bond; in 2013 the Swedish property company Vasakronan issued the first green corporate bond; and in 2016, in Poland, the first sovereign fund issued green bonds.

Today, Europe is the largest eco-bond market.

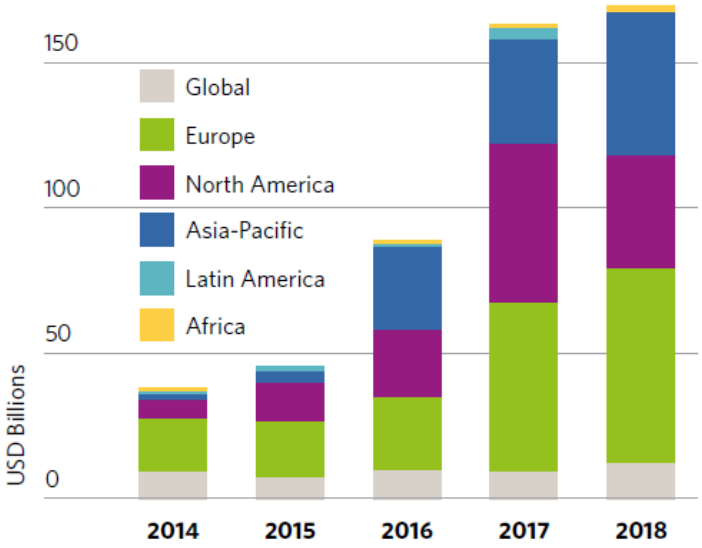

Chart no. 2 The global greenback market

Source: Climate Bond Initiative, 2018. *Green bonds: The state of the market 2018*. [pdf] Available at: <https://www.climatebonds.net/files/reports/cbi_gbm_final_032019_web.pdf> [Accessed 2 March 2019].

Since 2018, 145 European entities have issued green bonds, which is one third of the total. Issued bonds vary in format, maturity and transaction size, which signifies the diversity of the European green-house bond market.

The main green-house issuers in Europe are grouped into the following categories:

1. Private entities
2. Government authorities
3. Commercial banks
4. Sovereign funds
5. Development banks

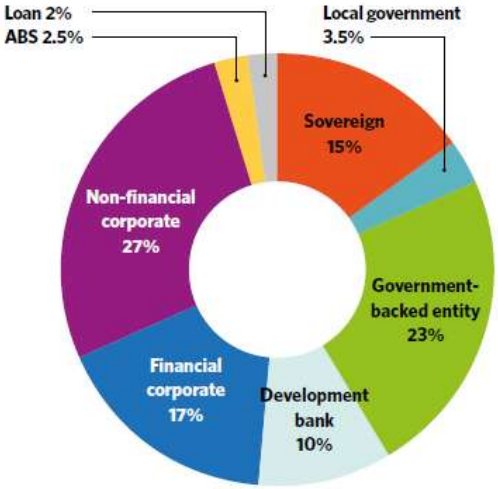

Chart no. 3 Categories of issuers in Europe

Source: Climate Bond Initiative, 2019. *Green Bonds – a key tool for financial centre competitiveness: Lessons from Europe*. [pdf] Available at: <https://www.climatebonds.net/files/reports/cbi-financial_centres_03d.pdf> [Accessed 2 March 2019].

The private sector is now a contributing factor mainly to green financing, ie 27%. This sector has gradually replaced, to a large extent, the development and investment banks that have taken a place behind the growth of private entities.

The private sector was motivated to take green funding seriously because of the political pressure to monitor climate risks and respond to the need to build a low-carbon economy.

Also, corporate issuers are on a growing trend, as they are generally more receptive to changes in investor preferences and can drive their capital more quickly and efficiently.

The 2018 beneficiary sectors of green investment in Europe are as follows:

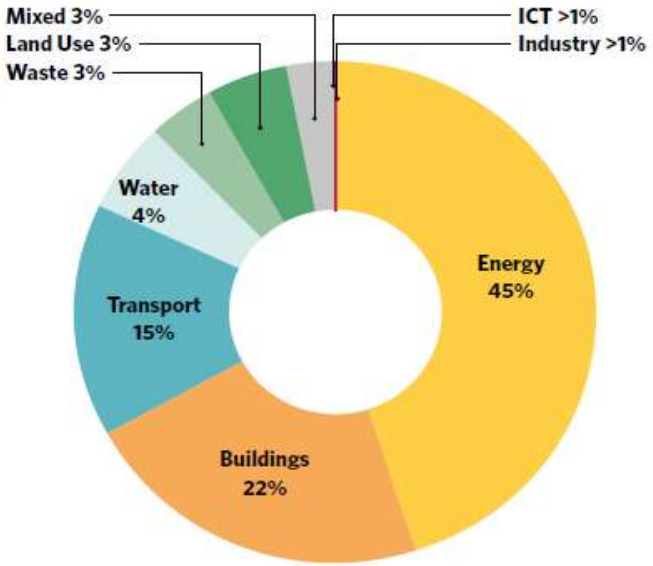

Chart no. 4 Sectors receiving green investment

Source: Climate Bond Initiative, 2019. *Green Bonds – a key tool for financial centre competitiveness: Lessons from Europe*. [pdf] Available at: <https://www.climatebonds.net/files/reports/cbi-financial_centres_03d.pdf> [Accessed 2 March 2019].

The main beneficiaries of environmentally sustainable investment are low-carbon technologies in the energy, buildings and transport sectors, reflecting the importance of reducing pollution in these sectors in the fight against climate change.

Thus, energy remains the main sector for greenhouse gas spreading, although its share has started to shrink in recent years, while the amounts directed towards the construction and transport sectors have increased.

Approximately 70% of European green paper bonds have a maturity of ten years or less.

The largest energy companies in Europe are EDF, Enel, Engie, Iberdrola.

Denmark Ørsted has completely renounced fossil fuels to offshore winds mainly from renewable sources. The other companies are in the transition period, and green bonds are a source of dedicated funding for doing so.

TenneT Holdings (Netherlands), NTE (Norway), Fingrid (Finland) and Latvenergo (Latvia) are the next segment of energy issuers, which transports renewable energy to the grid and improves its efficiency.

The newest issuer is Landsvirkjun, Iceland's energy company, which produces geothermal and hydraulic energy.

These are new categories of green bonds for Europe.

The sector also includes German wind turbine producers Nordex, the Certified Climate Bonds Issuer, and Senvion as well as Nordic urban heating companies.

France is currently the largest green-house bond market in Europe, followed by Germany, the Netherlands and Sweden. The green market of French bonds practices one of the highest levels of transparency.

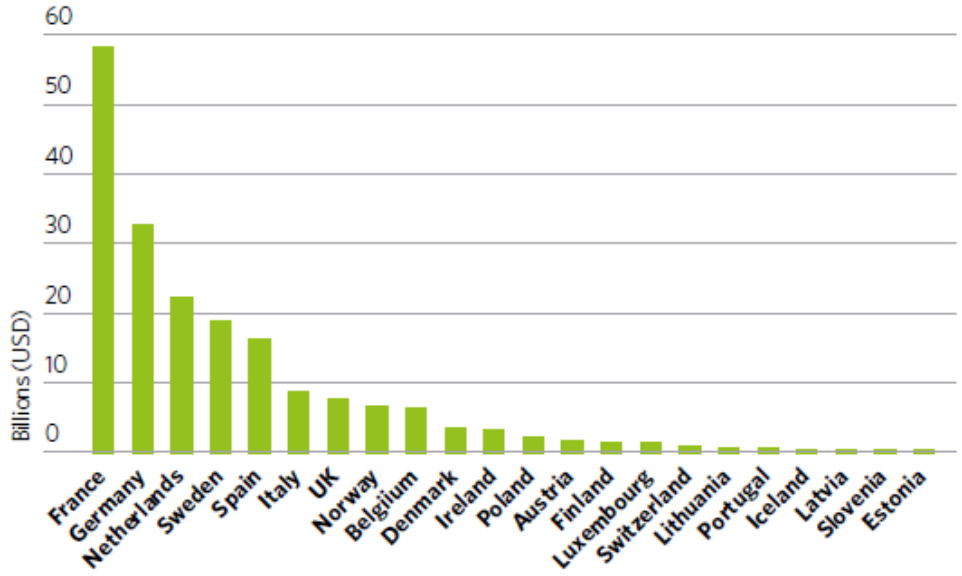

Chart no. 5 Country Ranking on Green Bond Issues

Source: Climate Bond Initiative, 2019. *Green Bonds – a key tool for financial centre competitiveness: Lessons from Europe*. [pdf] Available at: <https://www.climatebonds.net/files/reports/cbi-financial_centres_03d.pdf> [Accessed 2 March 2019].

In order to boost the financing of the transition to a low-carbon economy and to achieve the environmental objectives under international agreements, the European Commission has set up a High Level Expert Group on Sustainable Finance to provide guidance on the direction of capital flows public and private to sustainable investments, identifying measures that financial institutions should take to protect financial stability from environmental risks and implement these policies on a pan-European scale.

The said group released two reports in July 2017 and January 2018.

In developing countries, private sector financing is essential for the transition to low carbon and climate resilient economies. The European Commission, the governments of the developing countries and the financial authorities are developing roadmaps and implementing measures on mobilizing sustainable funding for inclusive and resource-efficient economic growth.

6. Conclusions

Investors are becoming more aware and attracted by the investment opportunities offered by areas such as clean transport, energy efficiency, renewable energy, forestry and adaptation to climate change.

Governments and financial supervisors recognize the importance of sustainable funding for meeting the objectives of Agenda 2030 and the Paris Agreement and for achieving financial stability.

A key challenge is to harmonize the measurement and reporting of greenhouse investment impacts on the environment.

For the bond market to thrive, investors need a definition of green bonds and a classification of investments considered green. In addition, reporting standards are needed so that investors and other stakeholders can easily access and compare green debt information.

In order to develop and grow the green bonds market, the European Commission has set up a Sustainable Finance Expert Group to assist in drafting a legislative initiative on:

- a classification system - the so-called taxonomy - to determine whether an economic activity is environmentally sustainable;
- a European standard on green bonds;
- benchmarks for low carbon investment strategies; and
- guidelines for improving the corporate disclosure of climate information.

Despite the potential of the green bonds market and the optimistic figures reported so far, it is only a part of the total market and is also well below the financing needs and financing opportunities of the green economy.

At the same time, the green-house market is a growing market. In addition, green bond issues are also expected from the big polluters, such as steel factories, mining operations, and so on.

European greenback issuers have always allocated a substantial share of revenues to the energy sector. However, in recent years, the global Energy share has fallen as the amounts have been redirected to construction and transport, although the energy sector still needs funding.

Europe has led the development of the green bonds market, encouraging global engagement. The sample of potential green bond issuers extends across the European taxonomy sectors, demonstrating that the region is still far from reaching its full potential.

Thus, a political impetus is expected to lead to the evolution and improvement of the market, such as the adoption of a tax on the EU's green assets in 2019, as part of the Commission's Sustainable Financing Action Plan.

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FISCAL SUSTAINABILITY – A LOGICAL APPROACH

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Abstract: *The paper proposes a logical approach to the fiscal sustainability concept. In the first part of the paper, the concept of sustainability is defined by identifying the sufficiency predicates, those logical conditions that the given system has to fulfill in order to be qualified as a sustainable system. Next, the role of autopoietic capacity in sustainable systems is highlighted. The last part of the paper considers the customization of the logical conditions of sustainability in the fiscal field. Thus, in order to define the concept of fiscal sustainability, additional sufficiency predicates will be identified, extracting from the sustainable processes those processes that are of fiscal type. Also, the paper proposes a logical formalization of the fiscal sustainability concept.*

Key-words: *sustainability, fiscal sustainability, autopoiesis, logical conditions.*
JEL Classification: *H30, O10, P10.*

1. Introduction

In the academic literature there are many approaches to the sustainability concept, in order to get a mostly comprehensive definition. The sustainability concept was first used in 1987 by the World Environment and Development Commission headed by Gro Harlem Brundtland, Prime Minister of Norway. The Brundtland Report ("Our Common Future") refers to sustainable development: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report, 1987, p.41). So far, the concept of sustainability continues to be of interest to many specialists from all fields of activity. This paper intends to clarify the concept of fiscal sustainability, starting from defining the sustainability concept.

The paper has the following structure: in the first part, various opinions existing in the academic literature on the concept of sustainability are presented; the definition of the sustainability concept is next defined by identifying the sufficiency predicates, and the relationship between the concept of sustainability and the concept of autopoiesis is established. In the last part of the paper, the sufficiency predicates are identified, which are the basis for defining the fiscal sustainability concept from a logical perspective, and at the same time their logical analysis is made. The paper also proposes a logical formalization of the three analyzed concepts: sustainability, autopoiesis, fiscal sustainability. Finally, the conclusions of the paper are presented.

The definition of the concepts in this paper will be made from a logical perspective, by identifying the sufficiency predicates. By sufficiency predicates we understand those logical attributes which, fully verified by some entity, assign it a certain qualification. Therefore, the definition of the analyzed concept will be the result of identifying the sufficiency predicates and their logical analysis. The sufficiency predicates of the analyzed concept have to meet the following conditions:

- independence - no predicate is the logical result of another predicate;
- consistency - no predicate is contradictory to another predicate;
- completeness - concomitant verification of the sufficiency predicates.

2. The concept of sustainability

Sustainable development, as defined in the Brundtland Report, addresses concerns for the continuity of the human species by limiting the current consumption of resources, focusing on their conservation. This approach to sustainable development refers to intragenerational and intergenerational equity. Thus, present generations must

demonstrate a responsible way of consuming limited resources so that future generations can benefit from the same facilities to meet their own needs. Intergenerational equity has in view the transfer of the costs of using environmental resources by the present generations over future generations.

The concept of sustainability is also used by Pierce D., who considers that for the development of today's society no costs should be transferred to future generations, which implies a high degree of responsibility of the present generations, who must show concern for the use of renewable resources (Pearce, 1993). In 1997, John Elkington refers to the three pillars of sustainable development: economic, social and ecological - the Triple Bottom Lines model (Elkington, 1997).

The sustainable development concept became widely known after the Conference on Environment and Development known as the "Earth Summit", organized by the United Nations in Rio de Janeiro in 1992. Within this Conference, Agenda 21 was developed - the plan to support sustainable development.

Sustainable development has become a general objective of the European Union since 1997, when it was included in the Maastricht Treaty. In 2001, the Sustainable Development Strategy of the European Union was adopted at the Gothenburg Summit.

The sustainable development concept can be described as the result of integrated approaches to the political and decision-making factors, taking into account aspects related to environmental protection and long-term economic growth.

Although, in the academic literature the concept of durability is used as a synonym for the sustainability concept, some authors make a clear distinction between the two concepts. In opinion of Dinga E., the difference between the two concepts is given by the presence or absence of the cultural subjects. Thus, within the sustainable systems there are cultural subjects, which is not valid in the case of the durable systems. Cultural subjects are those subjects capable of representation, as opposed to non-cultural subjects, specific to sustainable systems, which are capable of perception (Dinga, 2009).

2.1. Defining the sustainability concept

Identifying the sufficiency predicates of sustainability and analyzing them from a logical point of view will make it possible to qualify a given entity as being sustainable. SS notation has been used to define the sustainability of a system, and M(SS) represents the set of sufficiency predicates of sustainability.

The following sufficiency predicates for the sustainability concept of a system (SS) have been identified:

- P_1: the replication of the own input of the system through the output;
- P_2: the stability of the system reference parameter. This stability takes into account the variation of the value of the defining parameter of the system between certain previously established temporal and spatial limits. The system maintains its structure between these predetermined thresholds;
- P_3: the numerical value reached by the reference parameter has to satisfy certain expectations of the observer;
- P_4: the numerical value reached by the reference parameter has a global significance.

The logical analysis of the identified sufficiency predicates implies:

a) The analysis of independence - it will be taken into account that none of the four identified sufficiency predicates is the logical result of another predicate. Six possible cases are analyzed (C_4^2):

- P_1 and P_2: P_1 does not result from P_2 nor vice versa;
- P_1 and P_3: P_1 is not causally related to P_3 nor vice versa;

- P_1 and P_4: P_1 is not the logical result of P_4 nor vice versa;
- P_2 and P_3: P_2 is not the logical result of P_3 nor vice versa;
- P_2 and P_4: P_2 is not the logical result of P_4 nor vice versa;
- P_3 and P_4: P_3 is not the logical result of P_4 nor vice versa;

b) Consistency analysis - it will be shown that none of the identified sufficiency predicates is contradictory to another predicate. Six possible cases are analyzed (C_4^2):

- P_1 and P_2: P_1 is not contradictory to P_2 nor vice versa;
- P_1 and P_3: P_1 is not contradictory to P_3 nor vice versa;
- P_1 and P_4: P_1 is not contradictory to P_4 nor vice versa;
- P_2 and P_3: P_2 is not contradictory to P_3 nor vice versa;
- P_2 and P_4: P_2 is not contradictory to P_4 nor vice versa;
- P_2 and P_5: P_2 is not contradictory to P_5 nor vice versa;
- P_3 and P_4: P_3 is not contradictory to P_4 nor vice versa;

c) Analysis of completeness

Regarding the condition of completeness, the simultaneous relevance of the four identified sufficiency predicates for the concept of sustainability is considered.

The four indentified sufficiency predicates fulfill the conditions of independence, consistency and completeness. Therefore, any entity that simultaneously verifies the four identified predicates is considered to be sustainable.

The logical expression of sustainability has the following form:

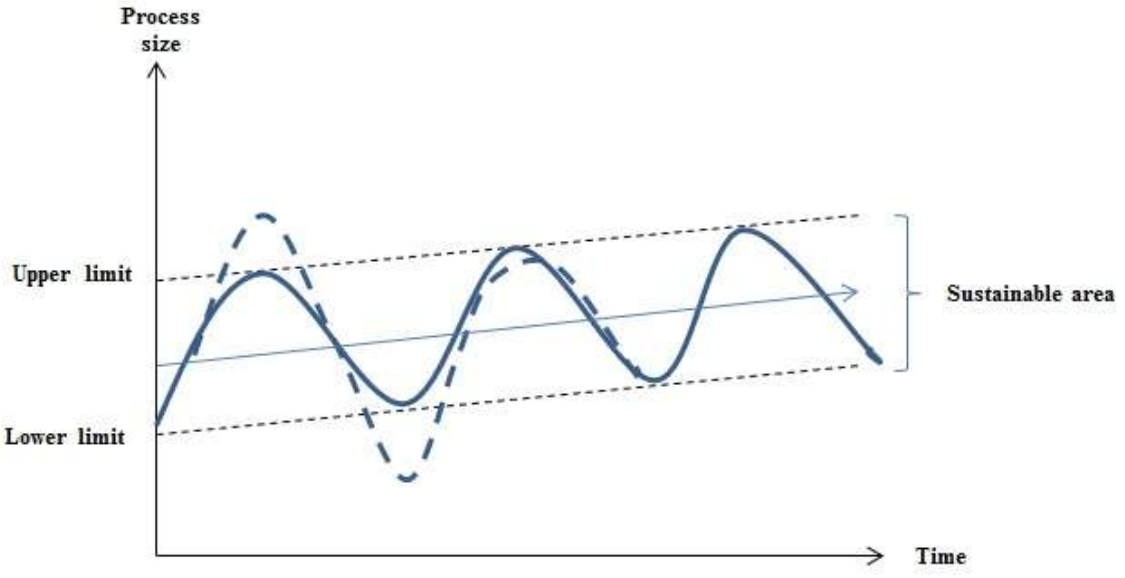
$$M(SS) = \{P_1, P_2, P_3, P_4\} \quad (1)$$

Or:

$$(P_1 \wedge P_2 \wedge P_3 \wedge P_4) \rightarrow SS \quad (2)$$

Thus, the sustainability of a system represents: *the property of the system to maintain its defining parameter on the desirable trajectory, within a predetermined interval, for a predetermined period of time and on a global space of accessibility, by restoring the input of the system through the output.*

Figure 1. System sustainability



2.2. Autopoiesis - a species of sustainability

The autopoiesis is part of the conceptual family of sustainability. Next, the concept of autopoiesis will be clarified. To define the autopoiesis concept, the sufficiency predicates identified for the sustainability concept are particularized for the autopoiesis concept. Thus, one or more additional sufficiency predicates will be introduced over the general case of the sustainability concept. The autopoietic system was noted with SA and M(SA) represents the set of sufficiency predicates for the autopoietic system.

The following additional sufficiency predicates are considered:

PS_1: the system's ability to self-observe and memorize its structure;

PS_2: the self-restoration ability of the system after shocks to maintain its structure.

The logical analysis of the additional identified sufficiency predicates implies the analysis of independence, consistency and completeness of 15 possible cases (C_6^2). None of the 6 sufficiency predicates (4 sufficiency predicates identified for the sustainable system and 2 additional sufficiency predicates identified for the autopietic system) is not the logical result of the other and is not contradictory to another predicate. The simultaneous relevance of the six identified predicates is also observed. Therefore, the complete verification of the sufficiency predicates identified by any entity gives it the qualification of autopoietic system.

The logical expression of the autopoietic system is:

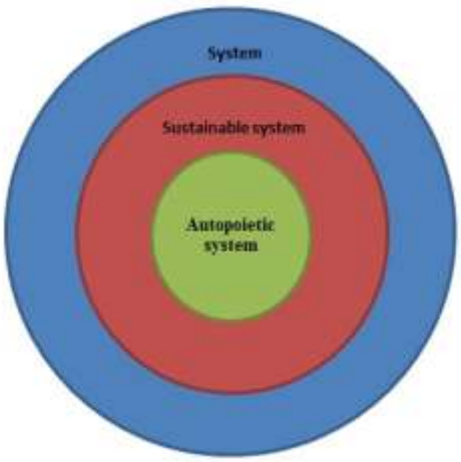
$$M(SA) = \{P_1, P_2, P_3, P_4, PS_1, PS_2\} \quad (3)$$

Or:

$$(P_1 \wedge P_2 \wedge P_3 \wedge P_4 \wedge PS_1 \wedge PS_2) \rightarrow SA \quad (4)$$

The definition of the autopoietic system according to the identified sufficiency predicates is: *a sustainable system that presents the capacity of self-observation and memorization of its structure, but also the self-restoration capacity of the system after shocks in order to maintain its structure.*

Figure 2. System – sustainable system – autopoietic system



3. The fiscal sustainability concept

Fiscal sustainability is a species of sustainability. The sufficiency predicates identified for the sustainability concept will be customized for the fiscal sustainability concept. This means that one or more additional sufficiency predicates will be introduced compared to the general case of the sustainability concept. The sustainable fiscal system

was noted SFS and M(SFS) represents the set of sufficiency predicates for the sustainable fiscal system.

The following additional sufficient predicates for the fiscal sustainability have been identified:

- PS_3: is addressed to the real economy;
- PS_4: targets the phenomena associated with public money.

The public money represents the monetary amounts belonging to the state, but also the monetary amounts from the private sector, which, by law, belong to the state.

The logical analysis of the identified additional sufficiency predicates implies the analysis of independence, consistency and completeness of 15 possible cases (C_6^2). None of the 6 sufficiency predicates (4 sufficiency predicates identified for the sustainable system and 2 additional sufficiency predicates identified for fiscal sustainability) is not the logical result of the other and is not contradictory to another predicate. At the same tine, the simultaneous relevance of the six identified predicates is observed. Therefore, completely verifying the predicates identified by any entity gives it the qualification of a sustainable fiscal system.

The logical expression of the sustainable fiscal system is:

$$M(SFS) = \{P_1, P_2, P_3, P_4, PS_3, PS_4\} \quad (5)$$

Or:

$$(P_1 \wedge P_2 \wedge P_3 \wedge P_4 \wedge PS_3 \wedge PS_4) \rightarrow SFS \quad (6)$$

The definition of the sustainable fiscal system according to the identified sufficiency predicates is: *a sustainable system that addresses the real economy, targets the phenomena associated with public money and describes phenomena that characterize the public system.*

4. Conclusions

Various approaches to the sustainability concept can be noticed, starting with 1987, when it was first used in the Brundtland Report. The most commonly used approach concerns intragenerational and intergenerational equity. Another controversy refers to the distinction between the sustainability concept and the durability concept. Some authors consider sustainability as synonymous to the concept of durability, while others make a clear difference between the two concepts.

The main contribution of this paper is to define the fiscal sustainability concept from a logical perspective. In order to define this concept it was first necessary to clarify the sustainability concept and the autopoiesis concept. For defining the three concepts, the sufficiency predicates and the additional sufficiency predicates were identified and their logical analysis was made. The logical formalization of the three concepts is another contribution of the paper.

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FROM DISCIPLINARITY TO TRANS-DISCIPLINARITY

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Abstract: *Scientific research, but also the taxonomy of sciences, are confronted with relatively unclear concepts, going to terminological and even conceptual confusions about entities such as discipline/disciplinarity, multidisciplinarity or pluridisciplinarity, interdisciplinarity or transdisciplinarity. The paper aims to examine this conceptual family in a logical and semantic manner and suggests definitions and distinctions of content that avoid the ambiguity of the use of related terms and help construct arguments about the phenomenology of research and scientific knowledge. Finally, the study proposes a specific paradigm for moving from disciplinarity, through intermediary stages, to transdisciplinarity (the latter seen as a secondary disciplinarity).*

Key - words: *disciplinarity, interdisciplinarity, transdisciplinarity.*
JEL Classification*: B40, O30, Y9****.***

1. Specific of knowledge, research, and practice in social and humanistic field

In contrast with the natural sciences, the social and humanistic field exhibit some crucial characteristics which should be strongly taken into consideration in the knowledge process.

(a) **Inter-disciplinarity** requirement

- economic subject is part of economic object (it is indiscernible from the object);
- observer (cognitive) subject is coincident with the actional (praxeological) subject;
- „movement law" is not invariant (more exactly, there are no laws in the strong sense);
- variability of the initial conditions is necessary (not contingency, as in the natural sciences).

(b) **Creativity** requirement

- economic truth and its testing are necessarily contextual
  - ➢ that is, they are depending on values, which transforms the economic knowledge into a hermeneutics;
- „movement law" is strongly sensitive from the initial conditions
  - ➢ economic dynamics is chaotic (i.e., a non-linearity punctually unpredictable);
  - ➢ economic dynamic is not reversible (or, at least, it is not ergodic);
  - ➢ economic dynamic is strongly dominated by hysteresis.

(c) Causality

- most often, the *effect* precedes the cause
  - ➢ because the effect is of the goal nature (the goal is a species of cause – Aristotle's final cause), which appears before the economic action (which is the efficient cause);
- most often, the *cause* cannot be known (observed)
  - ➢ <u>in the best case</u>: the cause appears as a causal mechanism (causal chain without a first cause, but with only causes with different degrees of proximity to the effect)

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➢ in the worst (and more frequent) case: the cause appears a a simple *correlation* (either structural or functional, but not causal);

NB: anywhere we have a causal chain, it is about correlation, but not about causal explanation

- causal asymmetry

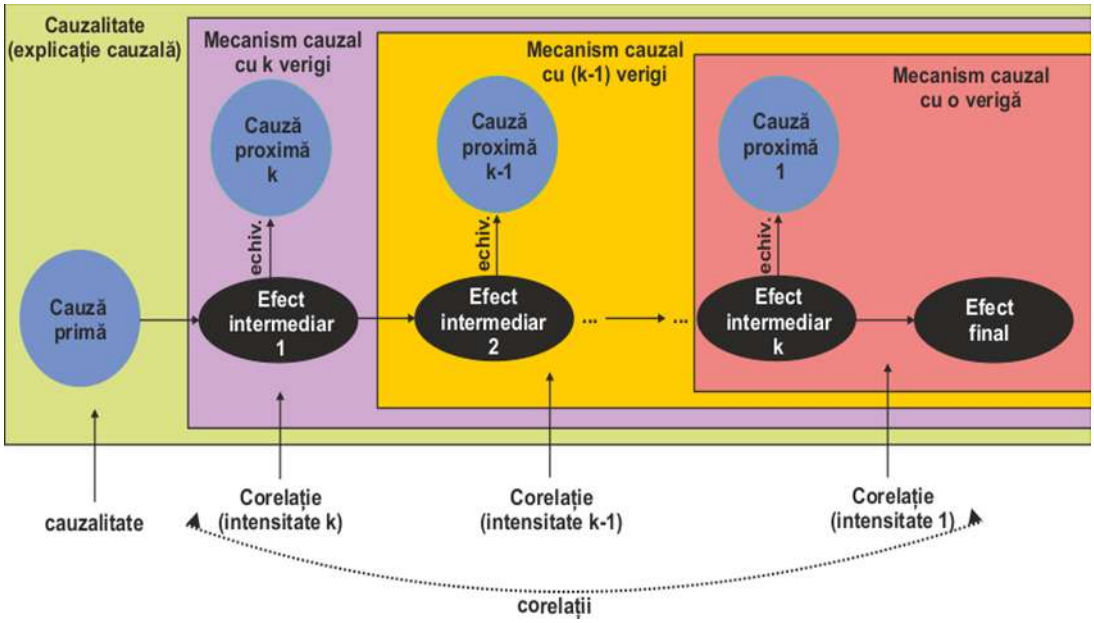
➢ identical causes can lead, under the same conditions, to different effects (morphostasis);

➢ different causes can lead, under the same conditions, to the same effect (morphogenesis).

- causality is not („sunken" into trajectories (which are reversible, by inversing the algebraic sign of the time variable), but into *processes* (which are irreversible, because the entropy law).

In figure 1 is shown the relationship between the cause and the causal mechanism.

Figure 1. The relationship between the cause and the causal mechanism in the social/economic field



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(d) **Trans-disciplinarization** requirement

- in economic discipline, the explanation, as a causal description, has a more accessible, but sufficient proxy: *comprehension* (understanding);
- comprehension is not accessible than by integrating all the essential sides of the subject (firstly, the *goal-values*);
- this means the mandatorily trans-disciplinary approaches in research, respectively the desirability of *trans-disciplinary* descriptions of the causal mechanisms.

(e) **Questioning** requirement

- there is no genuine research in economics (more general, in the social field) without a challenging *problem* (for example: a structural or causal incompleteness);
- research must identify problems of *scientific* type, that is, susceptible to enlarge the knowledge horizon which is factually testable (that is, it is under the

correspondence-truth testing) or, at least, susceptible to enlarge the list of factually testable hypotheses;

- questioning implies growing the weight of the *deductive* nature or, at least, of the *abductive* nature in formulating the hypotheses and in testing their veracity.

(f) **Invention** requirement

- in economic (more general, social) field, there is a dominance of *invention* over the discovery
  - by the contrary, in natural sciences, there is an inversely dominance
- in economic (more general, social) field, the conceptualization consists, preponderantly, in building *heuristic fictions*
  - is used, massively, the method *as if*
- invention implies a more risk of *error* that discovery
  - in fact, any theory is, essentially, an invention (theory has not ontological statute, although Karl Popper classified it within the „third world" – the world of the objective contents of thinking)
- building *meta-theories* (i.e., meta-explanations), is the most secure way to manage the informational explosion (NB: there is also the categorially knowledge)
  - the extreme abstracting must constitute the final target of the economic or social fundamental research
  - the more and more de-contextualization of the scientific result is a symptom of veracity (similar to the formal aesthetic configuration of the formula in the natural sciences)

(g) **Openness to questioning** requirement

- a genuine scientific result is that which proposes, concomitantly, new *interrogations* which generates necessarily (otherwise, it is tautological);
- social research must aspire, essentially, to *comprehension* (understanding); in the social field, many explanations are not, cannot be, and shouldn't be than descriptions of comprehension of the human behaviour;
- scientific research in economics (more general, in social field) must take into consideration the fact that the rationality of decision and of human behaviour are *false targets*, because it is principled impossible to be reached (the desiderative thinking always dominates the rational thinking – the last is simply an adequacy of the means to the goal);
- testing the true of the economic sentences (or of the economic predicates, after the case) remains relatively *contextual*, which dig a fissure of unsurpassing face to Popper's falsifiability criterion (it is difficult to replicate the context of the prediction in the testing experiment).

2. Discipline and disciplinarity in social knowledge

In order to understand the passing from disciplinarity to trans-disciplinarity, some definitions and conceptual clarifications are required.

- *disciplinarity*: parameter of a cognitive approach that maintains knowledge within the theoretical framework of an assumed cognitive discipline (Christie & Maton, 2013)
  - (def) theoretical framework: the set of hypotheses (e.g. principles, axioms, etc.) that constrain the explanations provided by a certain cognitive discipline

- consequence: the results of knowledge are theoretically closed, that is, they are valid (provide acceptable explanations) only in that theoretical framework
- comment 1: the disciplinarity has the strongest force of intellectual penetration of the object of knowledge, generated by its „specialization" on the aspect offered by its theoretical framework
- comment 2: disciplinarity is the first, obligatory, approach to the object of knowledge (any cognitive object is elucidated, in the first instance, disciplinarily)
- comment 3: the disciplinarity implies an arbitrary choice of the aspect to be elucidated cognitively (or, in other words, of the theoretical-guide framework of the research)
- comment 4: sometimes, by disciplinarity is meant the study of a certain segment cut in reality, from the perspective of the cognitive interest: we consider that this acceptance is wrong, because it would mean to favor the individual, who never provides authentic knowledge, but only pragmatic, instrumental knowledge (due to the high contextuality – e.g. induction)

Figure 2 indicates the „topological" relationship between the human society and the societal reality, while figure 3 shows the way in which the cognitive aspect and the cognitive discipline are related to each other regarding the knowledge process.

Figure 2. The relationship between the human society and the societal reality

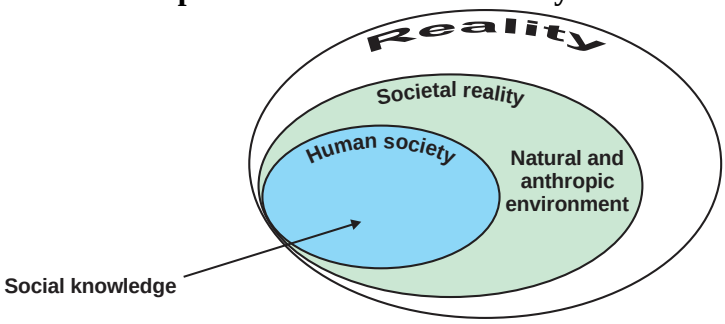

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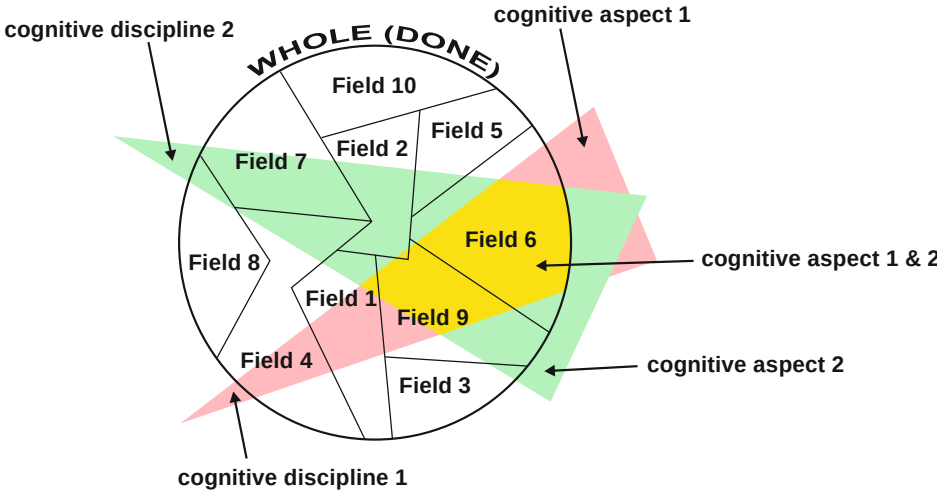
Figure 3. The relationship between cognitive aspect and the cognitive discipline



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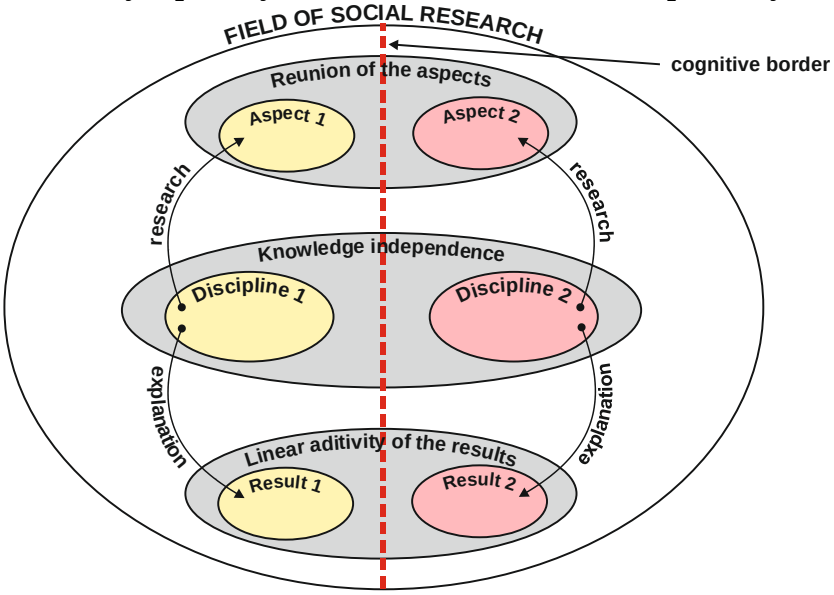
3. Conceptual demarcations UD-MD-ID-TD

In this paragraph, we will define and examine the logical (and psychological as well) stages to pass from disciplinarity to transdisciplinarity and again to a new disciplinaritiy and so on.

- **Unidisciplinarity** (UD): approach, at a given time or in a given time interval, of a single aspect of a research field, through a cognitive discipline
  - the conditions of sufficiency for UD:
    - ✓ *bijectivity* between discipline and cognitive aspect: each aspect represents the research object of a discipline and vice versa
    - ✓ *subsequentness* of cognitive approach: each aspect of the domain must be approached successively, even if several such aspects are ultimately investigated
    - ✓ *independence* of disciplines: the disciplines investigate the associated aspects in terms of autonomy vis-à-vis other disciplines that carry out similar cognitive approaches (NB: however, the independence of the aspects of the field in question is not necessary!)
    - ✓ *non-coincidence and independence of cognitive subjects:* the cognitive subjects that carry out the successive research are distinct and independent from each other
- **Multidisciplinarity** (MD): the simultaneous and independent approach of several different cognitive aspects of the same research field, through several cognitive disciplines (McConney, 2013)
  - the conditions of sufficiency for the MD:
    - ✓ *bijectivity* between discipline and cognitive aspect: each aspect represents the research object of a discipline and vice versa
    - ✓ *independence* of disciplines: the disciplines investigate the associated aspects in terms of autonomy vis-à-vis other disciplines that carry out concomitant cognitive approaches (NB: however, the independence of the aspects of the field in question is not necessary!)
    - ✓ *uniqueness* of the cognitive subject: the cognitive subject that develops several disciplines for the cognitive elucidation of several aspects of a given research field must be the same (obviously, it may be a collective cognitive subject)
  - the conditions of necessity for the MD:
    4. *explanatory extensivity*: the explanations provided by the disciplines involved in the research of the field concerned extend the knowledge in an exclusively quantitative way
    5. *linear additivity of the multiple explanation*: the independent explanations provided by each discipline can be summed up in a purely descriptive aspect (descriptive explanatory list)
    6. (***conjecture 1/theorem 1***) *theoretical closing reunion*: the theoretical closing of the results obtained in a multi-disciplinary way is given by the reunion of the theoretical closures of the results obtained by the disciplines involved.

Figure 4 shows synoptically the mechanism of multidisciplinarity.



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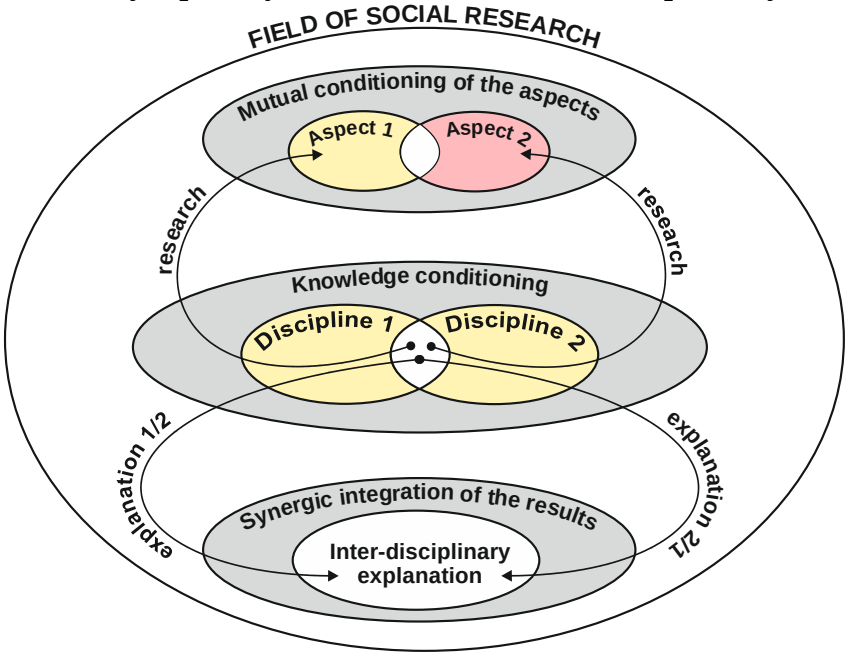
- **interdisciplinarity** (ID): the approach, concomitant and conditional, of several different aspects of the same field of research, through several cognitive disciplines (Miller, 2010)
  - the conditions of sufficiency for ID:
    - ✓ *bijectivity* between discipline and cognitive aspect: each aspect represents the research object of a discipline and vice versa
    - ✓ *non-independence of the disciplines*: the disciplines involved in the research of the different aspects of the field realize a sui generis communication between them, the final explanation provided being one integrated at the level of all the disciplines involved
    - ✓ *uniqueness of the cognitive subject*: the cognitive subject that develops several disciplines for the cognitive elucidation of the same aspect of a given research field must be the same (obviously, it may also be a collective cognitive topic)
  - the conditions of necessity for ID:
    - ✓ *explanatory intensity*: the explanations provided by the disciplines involved in the research of a given aspect of a domain extend the knowledge in a qualitative way
    - ✓ *logical additivity of the explanation*: the conditional explanations provided by each discipline can be summed up in a non-descriptive, synergistic aspect; this means that the achievement of a disciplinary result is conditioned by the constraints of another / other disciplines; the final explanation is therefore a synergistic one (could not be obtained separately from any of the disciplines involved)
    - ✓ (***conjecture 2/theorem 2***) *theoretical closing intersection*: the theoretical closure of the results obtained inter-disciplinary is given by the intersection of the theoretical closures of the results obtained by the disciplines involved.

Figure 5 shows synoptically the mechanism of interdisciplinarity



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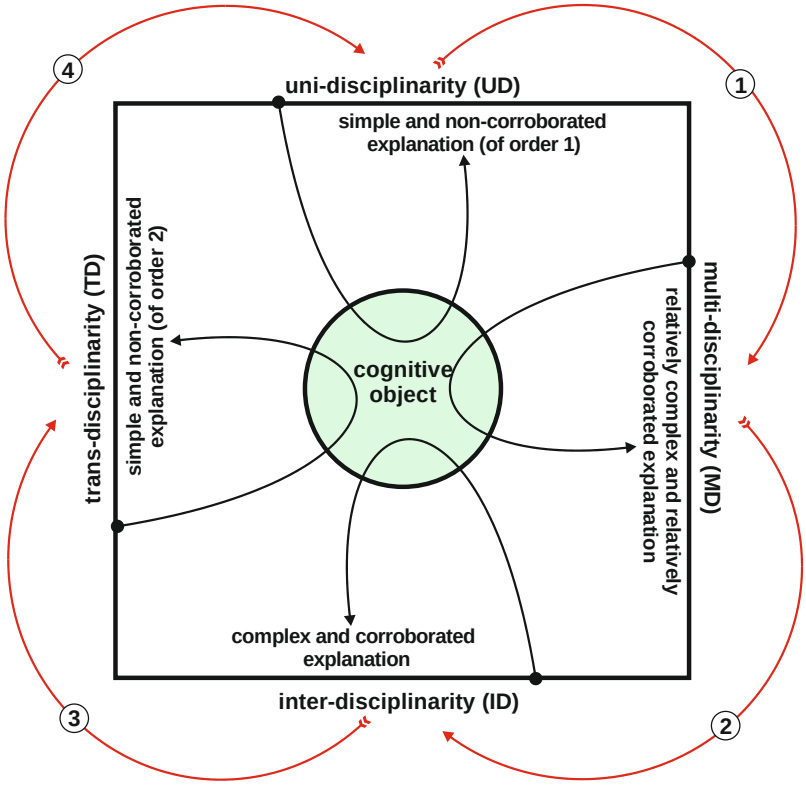
- **transdisciplinarity** (TD): meta-cognitive approach to an aspect of a research field, through disciplinary transcendence (Nicolesco, 2010)
  - ➢ the conditions of sufficiency for TD:
    - ✓ explanatory impossibility: the approach (either UD, MD, or ID) of the scientific interest in the given field cannot provide acceptable explanations within the accepted theoretical framework (so the problem cannot be solved)
    - ✓ explanatory incompleteness (the truncated character of the general explanation) is a kind of explanatory impossibility
    - ✓ the explanatory locality (the local character of the explanation) is a kind of explanatory impossibility (the locality is a kind of contextuality)
  - ➢ the conditions of necessity for TD:
    - ✓ explanatory novelty: the explanation is not covered by any of the theoretical frameworks involved (e.g. if MD or ID)
      - consequence 1: TD generates its own theoretical framework
      - consequence 2: at a certain level, the new theoretical framework generates disciplinary innovation (border disciplines – e.g. sociobiology - or new disciplines – e.g. systems theory); NB: TD is not a qualitative leap from the MD or the ID, but represents a new, emergent look (the emergency generates novelty), in the knowledge

Figure 6 shows synoptically the mechanism of transdisciplinarity



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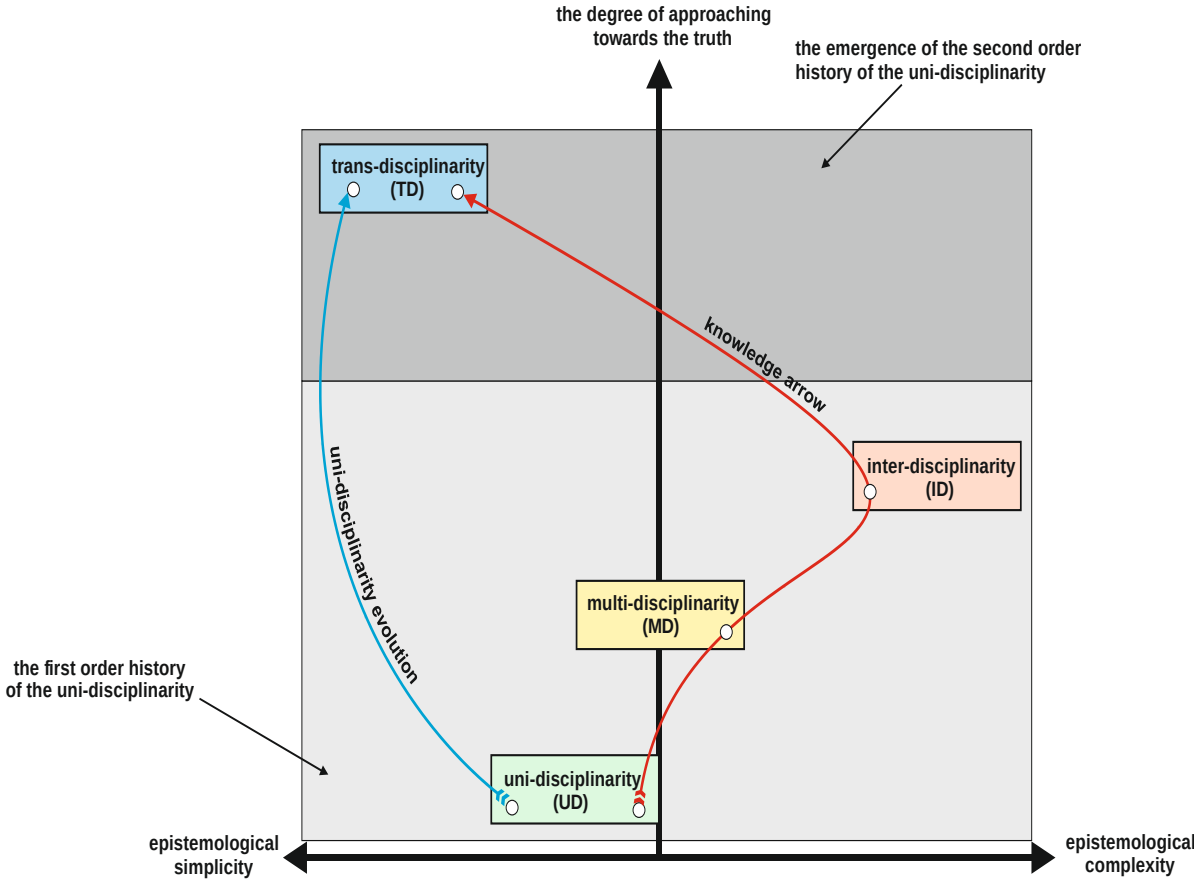
Once the transdisciplinarity is reached, a new disciplinarity emerges and the cycle UD-MD-IT-TD is resumed sine die. Figure 7 synthesizes such an endless cycle.

Figure 7. The continue cycle of UD-MD-ID-TD



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THE VALUE OF CREATIVITY AND INNOVATION IN ENTREPRENEURSHIP. ROMANIAN ECONOMIC ENTITIES CASE STUDY

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Abstract: *The purpose of this article is to evaluate the importance of creativity and innovation for the entrepreneurial environment given the current economic challenges. In the context of a globalized economy is common that every entrepreneur to face harsh competitive business, being difficult to survive and also to succeed. Given the evolution seen over the past century, where industry leaders have learned to master the production process, the new challenges arise from managing innovation and creativity by offering new and customized solutions. Although innovation and creativity are significant factors of growth and prosperity, their role is not necessarily well understood by the new entrepreneurs. Thus, the paper aims to have a contribution in better understanding the innovation and creativity and identifying the characteristics needed by the new entrepreneurs to succeed, being based on an empirical case study that may also be a ground for future studies.*

Key-words*: Entrepreneurship, Creative management, Innovation, SME.*
JEL Classification*: G32, O10.*

1. Introduction

Creativity and innovation are often jointly addressed to describe product-oriented innovation that allows a company to hold a star product, but is much less when it comes to studying successful combinations of multitudes of ideas that lead to entrepreneurial success, more based on diffuse innovation than on the one best idea. However, this creative approach, the purpose of which is not necessarily a technological innovation, may be difficult to imitate and thus constitute a protection of competitive advantage, even though industrial patent protection is not implemented as is often the case in small enterprises. Finding solutions or creating something new, undoubtedly, as described by Maslow (1943) through the hierarchy of needs, to self-realization, is the fulfillment of the self-entrepreneur.

Innovation is often approached in its aspect result whereas creativity seems rather to represent the origin, the cause. Some authors focus on the upstream of the process, through what encourages innovation, and are interested in the ability to innovate (Parmentier and Szostak, 2015). Creativity is then presented as a dynamic capacity that stimulates innovative activity and leads the organization to adopt risky behaviors and changes in its practices. Despite this, it is the theme of innovation that has been the subject of a significant number of academic studies since the last decades.

The notion of entrepreneurship, an equivocal and polysemic object, must be carefully addressed in a triple concern: definition, clarification and apprehension. Entrepreneurship is a heterogeneous phenomenon whose manifestations are manifold. Moreover, there is no consensus on a theory of entrepreneurship even less on an unambiguous definition.

A few questions arise subject to the phenomenon and needs clarifying, not resuming on how it emerged and what are its historical origins. Any assumption is limited without referring to the different theories and approaches that attempt to define each one from its premises and without putting the point in the current analysis that we are undertaking. It may be useless to dwell on the delimitation of its field and its meaning in

order to delimit our field of research. Entrepreneurship is a process that consists of several elements, one of the most important components being presented in the graph below (Figure no. 1).

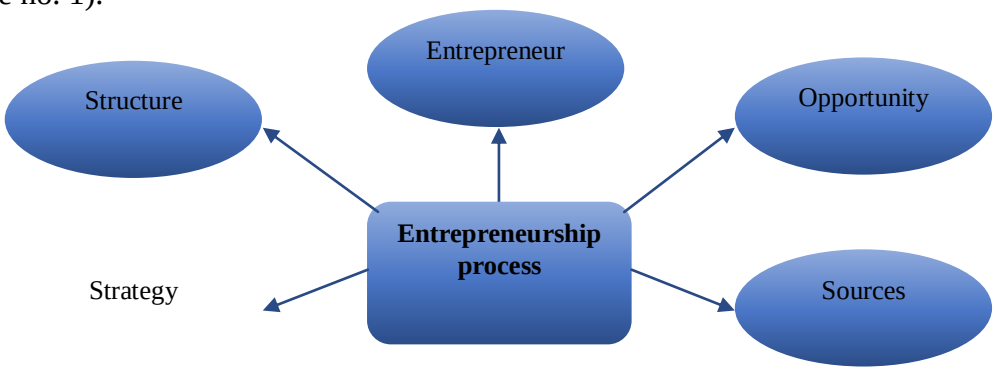

Figure no. 1. Components of entrepreneurship process

Entrepreneurship may be perceived as having a dual stake: the process by which new ideas are turned into new start-ups and, at the same time, the process by which marketplace information is revealed. Related literature has explored, to some extent, the first process but neglected the second one. In the theory of entrepreneurship and growth developed by Acs et al (2008), entrepreneurs utilize knowledge spillovers from established firms to produce useful innovations.

As established companies produce more “innovation” than they use, some ideas are pursued but others are neglect. In their model, entrepreneurs pursue neglected ideas and thereby produce “additional” growth. This result arises because different type of entities assign different expected values to the pursuit of new ideas, where existing companies see unfruitful endeavors, entrepreneurs see an opportunity for profit.

2. Review of literature

Miller (1983), drawing on the work of Mintzberg (1973), proposes to identify archetypes of firms. It's about designating organizational configurations from a given environment. Some key dimensions are studied to better understand how a company adapts to its environment or how it develops strategies to improve its performance (Zahra and Covin, 1995; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Rauch et al., 2009).

The main variables selected are the strategy and its dissemination within the organization, the organization itself, the environment as well as the managerial style of the leader. Miller offers therefore three types of organization: a) the "*simple*" organization - the need for leadership; b) the "*planning*" organization - a strategic vision; c) the "*organic*" organization - the importance of the environment and the structure.

In the continuity of Mintzberg's work, many authors have sought to clarify what the attributes of the entrepreneurial firm would be. According to Miller, three types of variables can explain the success or failure of an organization to adapt or develop: the environment, the organizational structure and the collection of behaviors. Three main dimensions characterize these behaviors: innovation, proactivity and risk taking.

Regarding innovation, it is materialized by the number and the novelty of the products, or services, offered as well as by access to new markets. Other characteristics make it possible to measure this innovation: the level of R & D, the production processes and more generally the change in the manufacturing process. The authors (Miller and Friesen, 1982) identify two types of behavior: some firms value innovation as such without environmental constraints, while others try to innovate only to respond to a threatening environment.

On the other hand, creativity is a field whose study is more recent than innovation and whose content is still unclear. Creativity is both a process and a result of this process that produces ideas. When it is not about products and services for customers, it is described as organizational creativity. Woodman, Sawyer and Griffin (1993) consider organizational creativity as a subset of innovation. For Amabile (1988) creativity is at the origin of innovation through the production of new and useful ideas and can be considered as its antecedent.

Gartner (1988) encourages researchers to go beyond the entrepreneur's study and focus on the business and the entrepreneurial process. Indeed, this approach attributes the success of a company to the strategic actions of the entrepreneur. It draws its sources from the contributions of the theories of organizations and strategy. In this order of ideas, Chandler (1962) highlighted the impact of general policy on the organization and introduced it into its strategic causality analysis model. Similarly, Porter (1980) put the company's strategic responses to its environment at the heart of its model. In this case, it should be noted that there are two types of work: those who seek to identify the best practices of entrepreneurial management and those who try to apprehend the entrepreneurial process.

The debate is not yet settled on a definition of what is the domain of entrepreneurship (Brazeal and Herbert, 1999; Shane and Venkataraman, 2000), therefore it is the responsibility of the researcher to provide a precise definition in relation to a particular problem. The notion of entrepreneurship, an equivocal and polysemic object, must be carefully addressed in a triple concern: definition, clarification and apprehension.

Beyond the various works that propose management practices and describe pragmatic ways to found and carry out a business, some authors focus on identifying the keys to the success of newly created companies. Drucker (1985), in his book, "Innovation and entrepreneurship", presents the characteristics of an entrepreneurial management. Thus, it prescribes the entrepreneur five rules to innovate and four strategies that will allow it to become a leader in its market.

The entrepreneurial process includes all the functions, activities and actions associated with the detection of opportunities, risk-taking, the elaboration of strategies, the creation of a new activity by combining means of production and bringing together scarce resources (Bygrave and Hofer, 1991). At the same time, in order to be interested in the process, it is necessarily to leave previous visions which are narrow and limited because the entrepreneurship is a complex phenomenon which must be approached as a whole in order to be apprehended.

We then see that this vision focuses on understanding the entrepreneurial phenomenon from the analysis of the behavior of the entrepreneur. In addition, it should be emphasized that action-oriented approaches and the entrepreneurial process have contributed significantly to the understanding of entrepreneurship. They also have the merit of emphasizing the relationship and interaction between all the dimensions of the organization and its functioning.

Objective of the Study

Through this study we propose to deepen the reading of the small business through the filter of creativity that can explain part of the mode of operation. Our research goal is to explain and understand how creativity can be a particular mode of operation for small businesses. This involves identifying the forms of creativity that the entrepreneur generates and gathering information about the creative process. An observation in the field was to question the small business entrepreneur about creativity by following the main activity practiced.

3. Research methodology

The choice of an exploratory approach is justified by the fact that we did not know what the interviews were going to state. The data was obtained through semi directive interviews aiming to create the background for an open discussion that does not limit the data collected and allows a methodical opportunism. The data obtained could be both quantitative and qualitative.

The questioning was carried out at company's premises in order to be able, as far as possible, to reinforce the information extracted from the interview by a careful observation of its environment, given the need to describe the context of the case study in order to facilitate the validity and reliability of the results. On the other hand, we must be aware of the parasitizes due to the interaction with the researcher.

In accordance with our choice to study small business, this field research focuses on small business as defined before, a core target represented by the segment of private non-microenterprise SME firms under 50 employees in all sectors of activity. A segment however porous or we allow ourselves not to set precise limits on the size, as seen before. In the same way, we do not select a particular activity, keeping in mind that very different results could be obtained depending on the business of the company.

Observation involves collecting data from the company's first representative, the entrepreneur, who is the bearer of the entrepreneurial dynamic. The study of creativity is difficult in the sense that it often brings us back to studying the psychology of the entrepreneur while we would like to build an explanation of the entrepreneurial situations encountered.

Our approach is therefore not to focus on the actor of entrepreneurship and the traits that characterize it, but to have a vision of the relationships between individuals and their behavior as an entrepreneur. We address the issues of small businesses through representations of entrepreneurial actors in a research framework based on an experienced real-type approach.

4. Results

The chosen field requires contact with the leader and validation that the company and the target person are in line with our study population. The main difficulties are to obtain the agreement of an observation based on a frank and sincere relation, and to relate correctly what the observation shows us. Confidentiality can be a barrier to accessing data, especially on issues related to competitive advantages or accounting data. A semi directive interview guide was developed in order to control the thread of the discussion (Figure no. 2).

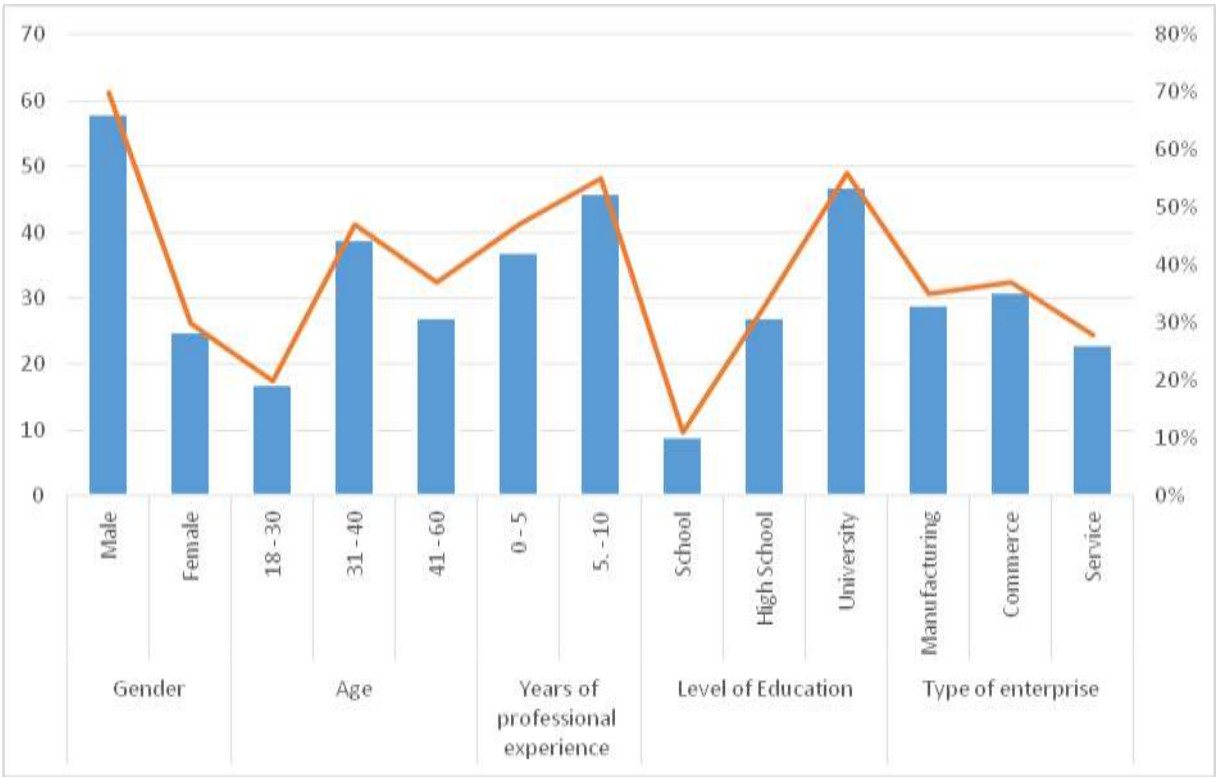

Figure no. 2. Profile of entrepreneurs selected in the research

Creativity is described in the literature as a prerequisite for innovation within a process common to all companies involved in a dynamic and effective entrepreneurial approach. The terrain we have studied gives us a rather nuanced picture of the creativity generated within small businesses. From the entire set of companies selected for this research, consisting in a number of 139, 83 provided answers out of which 47 were consistent enough to be relevant to the study (Figure no. 3).

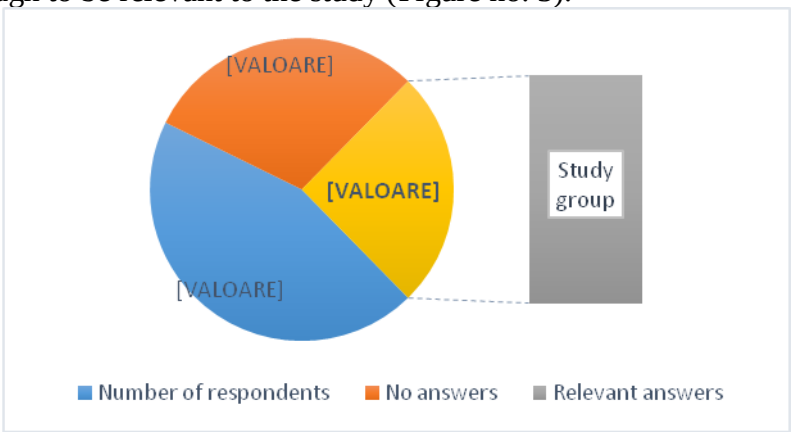

Figure no. 3. Study group

We have chosen to focus only on one of the cases studied, given that we may consider it representative for the group, and explains quite well our purpose and also illustrates how creativity is an important element of entrepreneurship, in view of the profile of the target group.

Given the structure of the group and the similarities found among the answers received we have focused our attention on a small company, highly representative to the group, namely one with 23 employees whose main activity is manufacture of protective

footwear. It is fairly representative in terms of size since over 50% of Romanian SMEs in industry have less than 30 employees with an average of 25,3 (INSSE, 2017).

At the end of 2017, in Romania, a number of 54186 small and medium-sized enterprises and 893 large enterprises were operating within industry sector (fig. no 4).

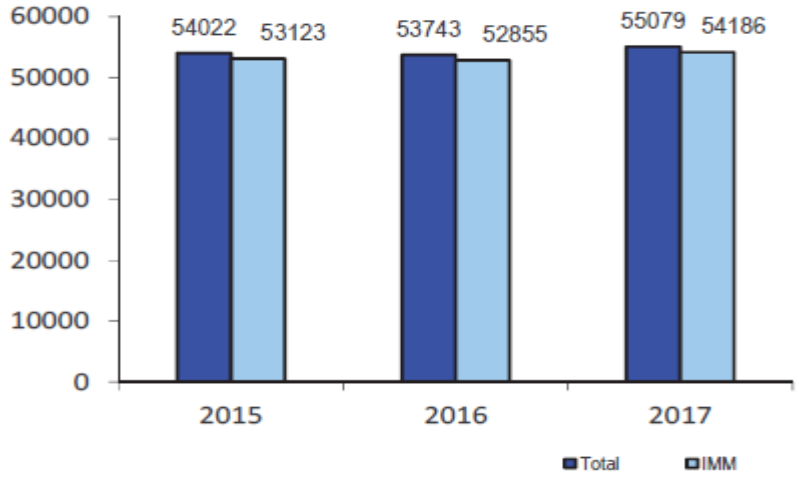

Figure no. 4. Evolution of the number of active enterprises in the industry, by total and SMEs, in the period 2015-2017

Source: National Institute of Statistics, 2019. *Home.* [online] Available at: <http://www.insse.ro/cms/> [Accessed 12 July 2019].

The studied company carries out activities in the protective footwear industry since early 2018 when it achieved a turnover of 0.4 million euros. The entrepreneur arrived in this activity thanks to skills acquired in the related field of activity as a manger of a trader company.

The observation was little guided, the entrepreneur approaching himself the aspects that interested us through his action and his speech. The fact of being immersed in the activity and at the same time collecting the information given by the entrepreneur made it possible to corroborate the speech effectively with the situation. Three fairly specific creative situations were identified over the course of the observation.

The first situation is a fairly classic economic arbitration of the use of labor and capital inputs. A choice of man-machine combination is made according to the availability of the moment of the labor force. Some employees do not have all the qualifications, the planning shows a single main site that requires optimizing the use of all resources available, more or less suitable to the necessary capacity and for all this it makes a choice of allocation for each order received. This task may seem quite routine and identifiable in most businesses. It is difficult to characterize it as an innovation, even managerial, and yet the number of possible combinations of the production system of this small company can quickly reveal solutions never used and considered new for the company.

If we consider the following three variables: employees, planning and materials to be combined with a particular context for each client, the number of combinations quickly becomes very important and the activity then moves away from a routine process.

The entrepreneur, who is constantly focused on the overall management of his activity, focuses at that time on the production function. Each of the orders requires the acquisition of the maximum amount of information from the client and leads to an original

productive organization. It is then not possible to singularly speak of innovation but rather of creative implementation of the elements necessary for the realization of the products.

We can then speak of activity creativity, a form of organizational creativity that is not necessarily based on an intentional process of innovation and which would fall within the theoretical scope of problem-solving methods.

The second situation observed in this company shows the use of a new technology in the manufacturing process: a new type of material that enhances the amortization quality. This one, although planned for other types of applications, allows an improvement of the production through classic criteria of decrease of the costs and maintenance of a quality beyond the required specifications.

The production plant was first tested in order to see if it met the demand of its customers and brought a real advantage, especially in terms of competitiveness. The new process, resulting from a benchmarking approach, modifies the manufacturing process without constituting a real innovation for the market.

The third situation occurred during the course of the activity. It can be described as an urgent problem to be solved during a new product line implementation. The urgency introduced the concept of time because the entire production chain was immobilized resulting in fixed costs of non-use of fixed assets and employees. A solution was found by updating some settings of a new equipment that was not properly put into operation and by adding a new technical solution that enhances the end product quality.

Careful observation, however, brings out a very different aspect. If the creativity generated in this case can be considered useful because the problem has been solved, it can also be described as absurd in the sense that the equipment was not working from the beginning as intended by the manufacturer.

Creativity can take an unexpected form in the sense that it may be useless or irrelevant in cases where a setting provided for a process is not working properly. Given the many possible combinations and the difficulty for an entrepreneur to understand all the possible scenarios, it is likely that this type of situation will happen again.

These three particular situations make us see creativity in singular forms that are not necessarily in line with the usual description of a creativity-innovation process. Through this analytical observation we can consider that this company is home to an effective approach to entrepreneurial creativity while it has no project called research and development, nor patent application in progress.

5. Discussions

Is difficult to mark the company observed with the seal of innovation because it does not meet the criteria of an innovative company. Yet we see that the entrepreneur brings new elements through his creativity, and this recurrently. His activity is impacted by the creative process. However, the creativity created is an entrepreneurial path far removed from what is found in the literature (Figure no. 5).

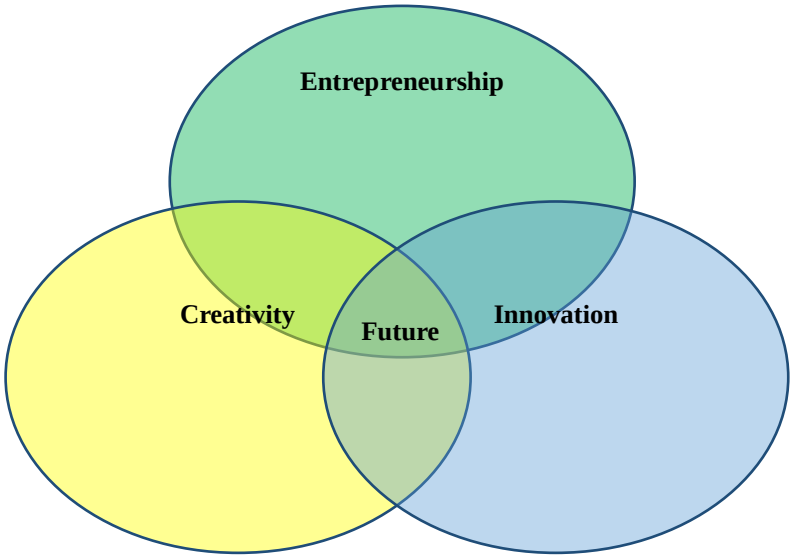

Figure no. 5. The connection between creativity, entrepreneurship and innovation

We can propose to disconnect the notion of creativity from that of innovation: the small business entrepreneur sees his creativity positioned at the heart of his job without it being with a systematic intention to implement an innovation process. This creativity linked to the activity can accompany and facilitate the production process and can help to solve problem. Creativity can lead to innovation in all its forms, but it does not necessarily lead to the expected results of traditional innovation processes.

Entrepreneurial creativity is not innovation. On the other hand, it can be a prerequisite for the reflection of each entrepreneur who must be able to evaluate, sort, select what will remain an element of creativity without follow-up or could become a strategic axis for the company and engage it in a traditional process innovation.

Entrepreneurial creativity shows at least two facets: the one that shapes the activity, modifies it without leading to an intentional process of innovation, and that which is, or will become, a prerequisite for an innovation approach. The first, the creativity of activity, can come from the difficulty to implement the activity, when it is difficult, or impossible, to apply or set up formalized processes, which leads the entrepreneur to generate ideas for solving problems.

This difficulty in applying established routines is rooted in the variability of the problems encountered, insufficient training and / or qualification of staff, time management and the urgency of the tasks to be performed, minimal supervision and also impression of increased estimated profitability for the entrepreneur as a perceived personal performance.

Whatever the form of creativity, it is a creative approach unique to small business entrepreneurs because they evaluate their operation only by their own conception of a situation. If the business grows, the delegation and sharing of the decision can change that, and lead to more formalization and a different creative approach, but it takes us little by little away from the small business setting. The fact that the activity is carried out with few collaborators, not necessarily decision-makers, obliges the entrepreneur to introduce organizational processes.

The evolution of information systems facilitates access to information for the entrepreneur who sees his difficulties reduced to make his choices. The outsourcing of memory, for example, makes information more available in any particular entrepreneurial situation that arises, when and where it appears. A different way of working may appear

between those who know how to exploit the new technologies of information and communication and those who, for various reasons, have been sidelined.

By continuing our reflection, however, we can question the respect of the formalized processes in place that makes the production system very efficient, but which can also become constraining for the entrepreneur's creative approach.

6. Conclusions

This article aims to open a little more the black box of creativity and innovation and to provide explanatory elements as to its place within entrepreneurship. The confrontation of macro data on small business with more detailed observations of the field observation offers us a wide-angle study with a zoom on the entrepreneurial creativity.

Considering creativity to explain entrepreneurship seems very relevant and allows us to propose the disassembly of concepts of creativity and innovation, creativity not necessarily leading to innovation. The forms of creativity that may appear encourage to us to reflect on the problem of ambidexterity in small businesses.

Exploration and exploitation are essential for assuring present and future competitiveness. The small business entrepreneur must again be very creative to bring it all together. Beyond the debate on the importance of creativity we also show the methodological difficulty that arises when we want to collect and exploit evidence on the subject of creativity, entrepreneurial situations being diverse and varied.

Finally, for this article, we used a single business case to complete our theoretical approach and answer our questions. It will be interesting to pursue this study with a larger number of companies in order to build a more theoretical representation of the existing forms of creativity within new companies and also to compare the results according to identified discriminating factors.

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IMPACT OF MANPOWER DEVELOPMENT ON ORGANISATIONAL PERFORMANCE

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Abstract: *The study is based on questionnaire administered on employees of drink producing company in Nigeria. This study examines the impact of manpower development on organizational performance. The sample size for the study is made up of one hundred and eighty seven (187) respondents. Descriptive and inferential statistics method was used to present and analysed the data collected through questionnaire. In testing the formulated hypotheses for this study both regression and correlation analysis was used. The research findings results indicated that there is a positive relationship between Manpower Development and Organizational Performance. The study suggests the need for continuous training and development of employees with focus on the competition, market dynamics, customer satisfaction, business and financial performance.*

Keywords*: Manpower, Development, Performance, Training, Career.*
JEL Classification*: J24, M12, M53.*

1. Introduction

The most effective strategy to improve manpower productivity is to devout resources for its development. Manpower is an important asset organization can leverage on for success and gain competitive edge in the turbulence environment in which the organization operates. Human resources is a key player in actualization of organization goals, it combine others resources together to achieve organizational set goals.

Development of the organizational manpower is a dynamic and evolving practice used to enhance organizational performance. Manpower development focused on turning out human resource that is needed for effective performance in the organization (Drucker, 1999). It focuses on equipping employees with new techniques that will enable them to perform effectively and efficiently (Lawal, 2006).

Emeti (2011) believes that performance should be measured since it helps to monitor employees and provide feedback information for management. Daleney and Huselid (1996) were of the opinion that organizational performance has to do with quality of service or product rendered, employees productivity and retention as well as the level at which the organization satisfies its customers. Bontis, Dragonetti, Jacobsen and Roos (1999) opined that, human resources of an organization have the capacity to bring innovative and creative ideas to the organization which is capable of bringing long term survival of the organization if well managed and motivated. Manpower is the basis of all resources use, it is the indispensable means of converting other resources to man kind's use and benefits. So how well we employ and develop human resources skills is fundamental in deciding how much will accomplish as a nation, man power is plot of every human institution. The concept of manpower development emerged as a strategy to enhance the capacity of available employees in organization in order to improve performance and productivity.

Agwu and Ogiriki (2014) were of the opinion that manpower development is the integrated use of training and development to improve effectiveness in organization.

Different studies have been carried out to consider the effect of manpower development on organizational performance (Agwu and Ogiriki, 2014; Rizov and Croucher, 2008; Shih, Chiang and Hsu, 2006; among others). Despite the establishment of these scholars that manpower development leads to increase in productivity and performance, managers still pay little or no attention to manpower development but focus

more on other resource. This practice renders organizations in Nigeria ineffective. Egwunyenga (2012), observed that lack of manpower development results into mal-administration and underperformance of the employees. Based on these assertions, it becomes pertinent to investigate the effect of manpower development.

Objectives of the study

a) To examine the effect career advancement has on organization performance.

b) To investigate the relationship between on- the- job training and organization performance.

c) To determine the effect off- the- job training has on organization performance.

Research Questions

This study answers the following research questions;

a) What effect do career advancement has no organization performance?

b) What is the relationship between on-the- job training and organization performance?

c) Do off- the- job training has affect organization performance?

Research Hypotheses

a) H_0: Career advancement has no effect on organization performance.

b) H_0: There is no significant relationship between on- the- job training and organization performance.

c) H_0: Off- the- job training has no effect on organization performance.

2. Literature review. Theoretical Framework - Human Capital Theory

The study is based on Human Capital Theory. This theory was proposed by Schultz in the year 1961.The theory argues that a person's formal education determines his or her earning power. Human capital theory holds that it is the key competences, skills, knowledge and abilities of the workforce that contributes to organisations competitive advantage. It focuses attention on resourcing, human resource development, and reward strategies and practices. According to Human Capital Theory, education is an investment because it is believed that it could potentially bestow private and social benefits. Human capital theorists believe that is relationship between education and earning power, which means, theoretically, that the more education one has, the more one can earn, and that the skills, knowledge and abilities that education provides can be transferred into the work in terms of productivity (Dae-bong, 2009).

Concept of Manpower Development

According to Schults (1993), definitions of manpower have shown some essential elements in enhancing organisations resources and help employees to improve productive of the business or organisation. In order to endure business effectiveness in organisations, the manpower becomes an asset and instrument used to grow productivity. This implies that manpower development could lead to better employees' productivity and ultimately improve organisation productivity. Rastogi (2002) stated that manpower is an important resource for organisations especially for employees' continuous improvement of knowledge, skills and abilities. Armstrong (2004) posited that human resource development is concerned with the provision of learning, development and training opportunities in order to improve individual, team and organisational performance.

Training and Development

Training and development are complementary parts of the same process. They are interlinked and interdependent, rather than sequential and hierarchical. Training and development is very crucial to the employees, the organization and their effectiveness (Devi and Shaik, 2012). Increasing job satisfaction and employee morality, enhancing the

employee motivation, improving the efficiencies in processes and financial gain, raising the ability to obtain and use new technologies, developing the innovation in strategies and products and reducing employee turnover are other important benefits of training (Mcnamara, 2010).

Career Advancement

Career advancement normally entails a clearly marked path of progression through the ranks of an organisation. It is based on merit without regard for race, gender, age or ethnicity .Deserving cases become eligible for advancement. Graham and Bennet (1995) noted that the prospect of career advancement is capable enough to motivates employees to give their best to the organization. Capelli and Hamori (2005) point out lack of career advancement for any reason damages a manager's chances of making it to the top. Gill and Kustron (2011) defined career development as a career planning in which there is a continuous process for individuals to develop his own occupational concept that will enable them to reach the peak of their career. Career advancement is the upward movement of employee in the organization.

Off-The-Job Training

Training which takes place in environment other than actual workplace is called off-the job training. Off-the-job training is usually designed to meet the shared learning needs of a group rather than a particular individual's needs. Lectures, computer-based training, games and simulations are the common forms of off-the-job training methods. The purpose of this method of training at a place rather than the work area is to give a peaceful domain to the employees where they can focus just on learning. Learning materials is provided to the trainees, for a complete theoretical knowledge .Usually training programs which are assigned by management, leads to greater employee motivation than those where attendance is optional. Employees take only those trainings seriously, where they are clear about the content, objectives and outcomes (Tai, 2004).

On-The-Job Training

The purpose of on-the-job training session is to provide employee with task-specific knowledge and skills in work area. The purpose of this training is to make the employees get familiar with the normal working environment that is during the training time frame, the workers will get the direct involvement of using of machinery, equipment, devices, material and so forth. The knowledge and skills presented during on-the-job are directly related to job requirements, job instruction technique, job rotation, coaching and apprenticeship training are the common forms of on-the job training methods. MburuMaina and Waithaka (2017) opined that on the job training equips employees with needed knowledge and skill to perform a specific task in the work area. Mentoring, apprenticeship, case study among others are different forms of on the job training. Tukunimulogo (2016) revealed that on the job training has the capacity to increase employees' performance. Ndunguru (2015) confirmed that on the job training has a significant effect on employee performance.

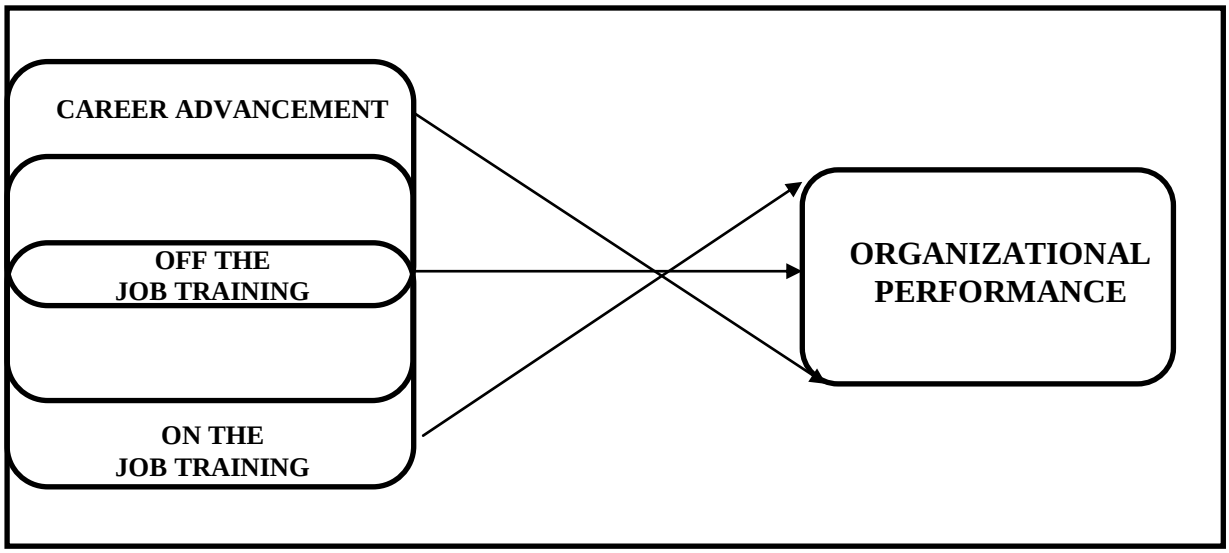
Organisational Performance

Performance of organisation depends on the knowledge and ability of its employees toward understanding the dynamism in the market. Brown (2008) defines performance as how well a person completes tasks and also the attitude with which he/she completes the tasks. Organization performance is an index that can be used to measure how healthy the organization is. Mwita (2000) explains organizational performance as the ability of an organization to achieve its set goals and objectives. Organization performance can be measured in terms of sales growth, financial performance, market share, customer satisfaction and retention.

Manpower Development and Organizational Performance

Manpower development equips employees with the necessary skills needed to perform effectively which translates to organizational effectiveness in the long run. Human resources development and organization performance are highly important and fundamental to good organization performance. Ogbu and Osanaiye (2017), in their study revealed that manpower development have a strong impact on organizational performance. Olusoji, Adedayo, and Godbless (2017) ascertain that manpower development helps in the actualization of organizational goals. Aigbepue and Mammud (2012) suggested that organizations should focus on manpower training to secure improvement in organizational performance.

Conceptual Framework



Source: the researchers, 2019.

3. Materials and Methods

The present study was limited staff of a drinks producing company in Lagos State, Nigeria. Primary data which was generated through self-administered questionnaires to the respondents. Yaro Yamane formula was used to determine the sample size of 200 from total population of 400 employees that work in the organization. Out of the 200 questionnaires that were administered, 187 were found useful for the study. SPSS package was used to analyzed data generated; both descriptive and inferential statistical tools were used in the analysis.

Results and Discussions

Respondents Demography

Table 1. Demography and socio Economic Characteristics of Respondents

	Frequency	**Percentage (%)**
Sex		
Male	114	61
Female	73	39
Total	**187**	**100**
Age		
Below 20	35	18.7
20 – 30 Years	79	42.2
31 – 40 Years	58	31

Above 40	15	8
Total	**187**	**100**
Marital Status		
Single	88	47.1
Married	85	45.5
Other	14	7.5
Total	**187**	**100**
Educational Qualification		
NCE	24	12.8
OND	38	20.3
HND	53	28.3
B.SC	64	34.2
Others	8	4.3
Total	**197**	**100**
Work Experience		
Below a year	30	16
1 – 5 Years	84	44.9
1 – 10 Years	48	25.7
Above 10 Years	25	13.4
Total	**197**	**100**

Source: Field Survey, 2019.

The table above shows the socio economic characteristics of the respondents. 61% of the respondents are male while 39% are female, which implies that male gender dominates the workforce in the case organization. Meanwhile, 18.7 % are below 20 years of age, 42.2% are between 20 and 30 years of age, 31% are between age 31 and 40 years of age while 8% are above 40 years, this implies that majority of the employees are between 20 and 30 years of age. The table also shows that 47.1% of the respondents are single, 45.5% are married while 7.5% of them are either divorce or widow/widower. This implies the workforce is dominated with single employees. Moreover, 12.8% of the respondents are NCE certificate holders, 20.3% hold OND certificate, 28.3% hold HND certificate, 34.2% hold B.Sc. certificate while 4.3% hold other certificates, this implies that B.Sc. holders dominates the workforce in the organization. Regarding years of work experience, 16% of the respondents have less than a year work experience in the organization, 44.9% have between 1 and 5 years work experience, 25.7% have between 6 and 10 years of work experience while 13.4% have work experience that is above 10 years. This implies that the organization is dominated by employees who have spent between 1 and 5 years in the organization.

Test of Hypotheses

Hypothesis 1

H_0: Career advancement has no effect on organization performance.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.327	1.663		15.831	.000
	Career Advancement	.564	.113	.344	4.980	.000

R = 0.344, R^2 = 0 .118, Adj R^2 = 0.113, F=24.801, Sig=0.000

Linear Regression technique was used to explore the effect of career advancement on organizational performance. From the table above, it can be seen that career advancement has a strong effect on organizational performance with a Beta Coefficient of 0.344, which is statistically significant as indicated by the p- value of 0.000.

The R square gives a value of 11.8%. This implies that career advancement account for 11.8% of the variation in the organization performance in the organization. The result from the table has a significance level of 0.000 which is less than 0.05. Therefore, the study rejects the null hypothesis and accepts the alternative hypothesis. Therefore, career advancement has effect on organization performance.

Hypothesis 2

H_0: There is no significant relationship between on- the- job training and organization performance.

Correlations

		On the job training	Organizational Performance
On the job training	Pearson Correlation	1	.337**
	Sig. (2-tailed)		.000
	N	187	187
Organizational Performance	Pearson Correlation	.337**	1
	Sig. (2-tailed)	.000	
	N	187	187

**. Correlation is significant at the 0.01 level (2-tailed).

The result of the analysis as represented in the table above shows that there is a positive relationship between on-the-job training and organizational performance with r value of 0.337 which is significant at P value less than 0.05. The study thereby rejects the null and accepts the alternative hypothesis. Therefore, there is significant relationship between on- the- job training and organization performance.

Hypothesis 3

H_0: Off- the- job training has no effect on organization performance.

Coefficients[a]

Unstandardized Coefficients		Standardized Coefficients	T	Sig.
B	Std. Error	Beta		
21.712	1.687		12.868	.000
.935	.121	.492	7.697	.000

R = 0.492, R^2 = 0 .243, Adj R^2 = 0.238, F=59.237, Sig=0.000

Linear Regression technique was used to explore the effect of off-the-job training has on organizational performance. From the table above, it can be seen that off the job

training has a strong effect on organizational performance with a Beta Coefficient of 0.492 and a statistical significance of 0.000.

The R square gives a value of 24.3%. This implies that off-the-job training account for 24.3% of the variation in the organization performance in the organization. The result from the table has a significance level of 0.000 which is less than 0.05. Therefore, the study rejects the null hypothesis and accepts the alternative hypothesis. Therefore, off-the-job training has effect on organization performance.

4. Conclusion and Recommendations

The result from the study shows that manpower development variables used in the study has effect on organizational performance .Thus, judging from the findings of this study, the ability of any organization to improve on its career advancement, off-the –job-training and on-the –job-training will significantly improve organizational performance.

Based on the hypotheses that were tested in the study, the study concludes that manpower development has positive impact on organizational performance.

From the findings and subsequent conclusion of the study, it is important that organizations that wish to improve performance through manpower development should channel their focus and strategies towards the following recommendation;

a) The firms must continually provide for improvement of employee career through advancement and secure a link to business performance.
b) Provision should be make for adequate on-the-job- training. This has potentials of contributing to the performance of the organization
c) Off-the- job-training should enhance in the organization in order to ensure a befitting organisational performance.
d) Organizations should set aside, separate budget that will cater for manpower development.

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THE USAGE OF NEW ICT TOOLS IN THE CLASSROOM FROM THE STUDENTS' PERSPECTIVE AT "MIHAI VITEAZUL" THEORETICAL HIGHSCHOOL - CASE STUDY

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Abstract: *Modern times translate into modern education, and this, nowadays means the usage of new ICT as a teaching aid during school classes. This article is a case study on the usage of the new means of technology at "Mihai Viteazul" Theoretical Highschool – a school unit in Dambovita County. The main tendency in education, in the contemporary times is to maximize the involvement of technology in teaching in order to have better results. The purpose of the study is not only to establish the degree in which technology is accessible and employed during classes at this school unit, but also, to learn the opinion of highschool students related to this subject matter.*

Key words: *ICT; students; contemporary education; teaching.*
JEL Classification: *I21, O30.*

1. Introduction

The debut of information and communications technology (ICT) in the field of institutionalized education is relative new in our country. Ever since the 1980s, world-wide teachers, researchers and philosophers have embraced the dare to employ them in the process of teaching. The occurrence of the world wide web has changed the world's expectations in relation to education.

The purpose of technology in education is a means of assisance and also a device to increase the learning process. However, educators not always regard computers with a positive attitude which may lead to lack of success in their endevour. Another important barrier is the absence of physical resources (hardware) and expertise in this respect.

Another setback is that rural schools are the last to use the new technology because of poor finances.

2. The usage of New ICT tools in the classroom from the students' perspective at "Mihai Viteazul" Theoretical Highschool- case study. Methodology.

The purpose of this study was to discover the perceptions high school students have about modern education with the aid of the new ICT tools, to determine the possible obstacles if any and to present some solutions

The research was performed at *"Mihai Viteazul" Theoretical Highschool* in Dâmbovița County involving IX-XII grades students.

The research aims to answer the following questions:

1. How wide-spread is the use of the Internet and the tools used to access it taking into account the context (rural)?
2. How much time a day do students allot to educational use of ICT at home?
3. How often are the ICT tools used at school courses?
4. What is the student's opinion about the practicality of modern education?
5. What are the possible issues at *"Mihai Viteazul" Theoretical Highschool* resulted in connection with employing the new technology?

The hypotheses and the studied points:

H1: To a large extent high school students possess the means both at home and at school to use the Internet for educational purposes and not only.

H2: According to the opinion of the participants in the research, the ICT tools are beneficial to education.

H3: The students involved in the study prefer modern education to the classical one. The above hypotheses are expected to be confirmed or denied by the respondents' statements.

About the method used in the research.

The reasearch involved the highschool students attending *"Mihai Viteazul" Theoretical Highschool* in Dâmbovița County. This school has 224 students enrolled in IX-XII grades. The sample size is represented by 142 participants in the survey calculated at 95% confidence level and with a 5% confidence interval. The sampling mode was non-equitable sampling and the research was performed using the opinion poll. The result of the study is a quantitative one based on the questionnaire tool.

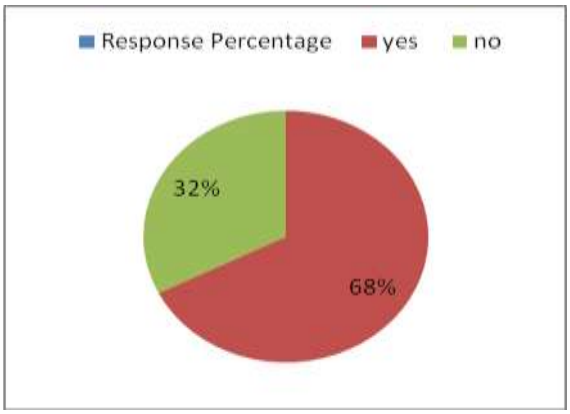
The purpose of this study was to discover the perceptions high school students have about modern education with the aid of the new ICT tools, to determine the possible obstacles if any and to present some solutions.

The study was settled on the questionnaire tool, the questions were explicit about the respondents' opinion and experience. The questionnaire was administeredby means of the face to face method. When establishing the level of importance of some criteria the 5-step Semantic Differentiation Scale was employed.

The questionnaire was processed in the database created in Microfoft EXCEL.

Question 1. Do you have at home Internet connection?

Table 1. The existence of Internet connection at home



Response	Percentage
Yes	68
No	32

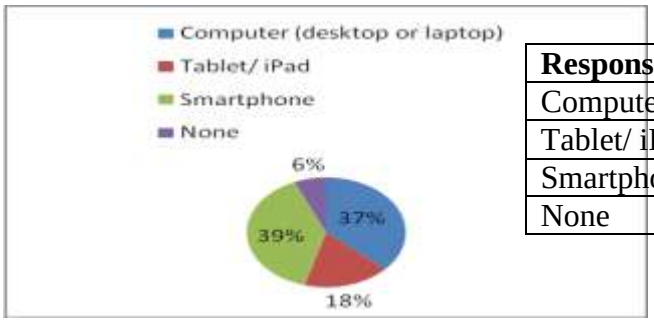
Figure 1. The existence of Internet connection at home

Source: elaborated by the author

A large number of respondents have an Internet connection at home (68%).

Question 2. Do you have available at home one or more of the following?

Table 2. The ICT devices available at home



Response	Percentage
Computer (desktop or laptop)	37
Tablet/ iPad	18
Smartphone	39
None	6

Figure 2. The ICT devices available at home

Source: elaborated by the author

We can observe from the chart that the computer and the smart phone are the most popular and that are still few respondents who do not possess any of the above devices.

Question 3. How often do you use ICT tools at school during classes?

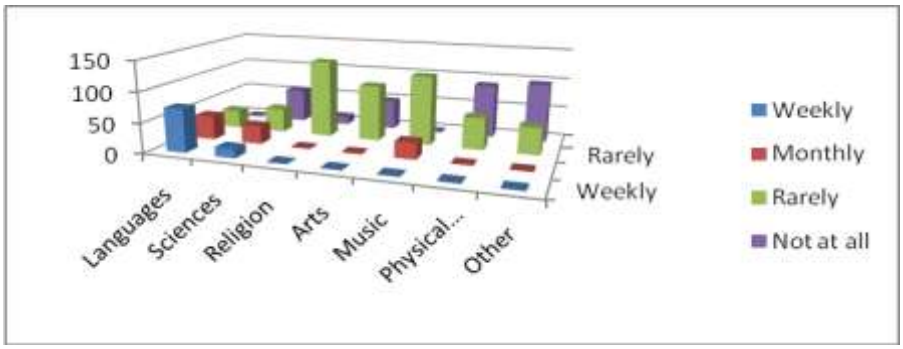


Figure 3. The frequency ICT is employed at school
Source: elaborated by the author).

Table 3. The frequency ICT is employed at school

Subject	Weekly	Monthly	Rarely	Not at all
Languages	72	40	30	0
Sciences	15	30	40	57
Religion	0	0	129	13
Arts	0	0	93	49
Music	0	27	115	0
Physical Education	0	0	53	89
Other	0	0	45	97

We can observe from the chart that the new ICT are mostly used for teaching/ learning languages and there are subjects with low frequency in this respect.

Question 4. How often do you use the following tools?

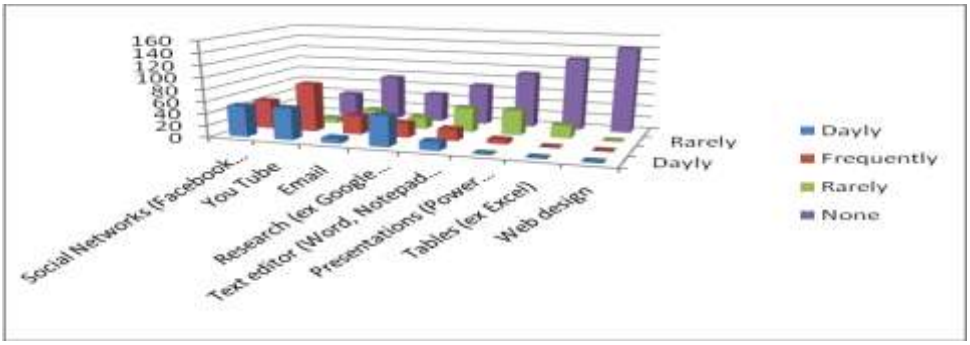


Figure 4. The frequency the respondents use ICT tools
Source: elaborated by the author.

Item	Daily	Frequently	Rarely	None
Social Networks (Facebook etc)	52	48	2	40
You Tube	53	81	8	40
Email	8	31	28	75
Research (ex Google Search etc)	51	24	19	48
Text editor (Word, Notepad etc)	14	19	41	68
Presentations (Power Point, Prezi, etc.)	0	7	42	93
Tables (ex Excel)	0	0	21	121
Web design	0	0	0	142

Table 4. The frequency the respondents use ICT tools

Source: elaborated by the author.

Most respondents use the Internet for relaxation, *Facebook* and *You tube* being the preferred applications while editing, research and others are far behind.

Question 5. What are the ICT tools available in your school?

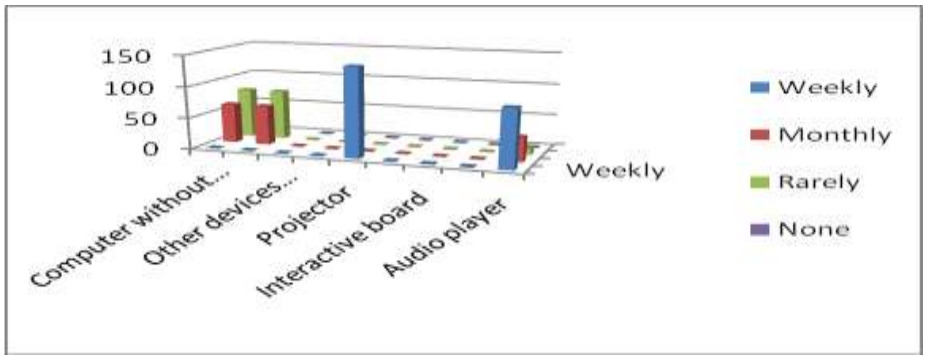


Figure 5. The ICT tools available at school

Source: elaborated by the author.

Table 5. The ICT tools available at school

Item	Weekly	Monthly	Rarely	None
Computer without Internet connection	0	63	79	0
Computer with Internet connection	0	63	79	0
Other devices (tablet, laptop etc) without Internet connection	0	0	0	0
Other devices (tablet, laptop etc) with Internet connection	0	0	0	0
Projector	142	0	0	0
Smartphone	0	0	0	0
Interactive board	0	0	0	0
Video camera	0	0	0	0
Audio player	93	39	10	0
Another	0	0	0	0

Source: elaborated by the author.

Question 6. What is your opinion about modern education through the usage of ICT means?

a) The lessons are more attractive and I understand better the new notions.
b) Generally, I like ICT classes and I consider them useful, but, at the same time I think that a lot of time is wasted on turning on or connecting the necessary hardware.
c) I think they are not that useful since we still have to study/ learn the notions.
d) They are boring and I prefer the classical manner (without the aid of technology).

Table 6. The opinion of the respondents

Response	Percentage
a	34
b	46
c	15
d	5

Source: elaborated by the author.

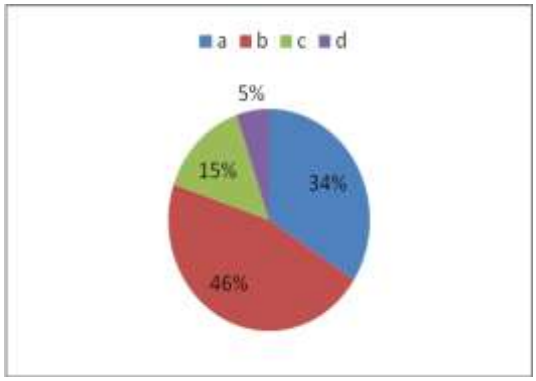


Figure 6. The opinion of the respondents
Source: elaborated by the author.

From the answers of the respondents, most of the respondents agree that ICT classes are useful but consider that turning on or connecting the necessary hardware takes up a lot of time from the 50 minutes alloted to a course.

3. Conclusions

The respondent group composed of high school students from a rural area, IX-XIIth, enrolled at *"Mihai Viteazul" Theoretical Highschool*, a public school unit in Dâmbovița County declared that they have Internet connection at home and the majority posses either a computer or a smartphone they use to access the Internet.

Students state that ICT tools are mostly used for languages courses and that, in their opinion, these tools are beneficial to their education. However, the respondents do use the web mostly for entertainment rather than research or projects. Few often use the email.

All in all, the respondents confirm that their school still has some issues with the physical support necesary to undertake such activities. Though each classroom has its own projector, there are no laptops/ tablets or computers to connect to them, except for the ones in the science lab. Usually teachers bring their own if they want to use the projectors at classes. That is why there is not a high percentage in the use of ICT for teaching.

The target group also affirmed that generally speaking, they prefer modern teaching but still consider a drawback the duration it takes for the teachers to turn on/ connect the devices.

The above mentioned hypotheses have been confirmed to a large extent and the conclusion is that technology has mostly a good impact on education and we should try to overcome all the barriers and adapt to change.

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THE BREXIT FROM THE EUROPEAN UNION - IMPLICATIONS ON THE EXTERNAL TRADE OF ROMANIA

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Abstract: *After briefly presenting the legal framework for the exit of the United Kingdom of Great Britain and Northern Ireland from the European Union, in the article there are analysed in the trade relations between Romania and the United Kingdom. Thus, it stands out an increase in the exports and imports between these countries, as well as the fact that starting with 2013, the United Kingdom ranks first among the countries with surplus of the goods balance in favour of our country. There is a diversification and an improvement in the structure of exports toward the United Kingdom, namely the share of medium and highly processed goods increases. Romania's imports from the United Kingdom are dominated by medium and highly processed goods. Towards the end of the period under review, we can see a concentration of commodity groups imported from the United Kingdom. The author uses qualitative and quantitative assessments, interpretations, comparative analysis and correlations. The analysis is carried out for the period 1991-2017 and it concludes that it is in our country's best interest to close a trade agreement between Romania and the United Kingdom if the Brexit takes place.*

Keywords: *imports, exports, structure, consequences, commercial agreement, further trade relations.*

JEL Classification: *F14, F15, F49.*

1. The legal framework for the exit of the United Kingdom of Great Britain and Northern Ireland (United Kingdom) from the European Union (EU)

The provisions of the Lisbon Treaty corroborated with the results of the referendum of June 23rd, 2016, according to which 51.9% of the British citizens have voted in favour of leaving the European Union, provide the legal framework for the exit of the United Kingdom (UK) from the European Union.

With the enforcement of the Treaty of Lisbon amending the European Union Treaty and the Treaty for establishing the European Community, the right of a Member State to exit the European Union was introduced for the first time in 2009 (Article 50), in accordance with its constitutional rules.

The Treaties of the European Union shall cease to apply to the State concerned from the date of enforcement of the exit agreement or, in the absence of such an agreement, two years after notification of the European Council of the intention to exit EU, unless the European Council, in agreement with the Member State concerned, decide unanimously to extend this period (the Treaty of Lisbon, Article 50).

On March 29th, 2017, the British government formally initiated the exit process from the European Union by activating Article 50 of the Lisbon Treaty.

The UK Prime Minister, Theresa May, characterizes Brexit as a method by which the UK can regain its sovereignty, particularly over immigration, trade and legislation. From the point of view of the Prime Minister, it is desirable to sign a comprehensive free trade agreement with the European Union (Stratfor, 2017). But it should be borne in mind that the negotiation and ratification of a trade agreement can take years because each national and regional parliament must express its opinion by voting the agreement or not.

UK remains a Member State until official exit, which represents having rights and responsibilities, including financial commitments that may extend beyond the date of exit (Soare, 2017), according to the resolution adopted by the European Parliament on key principles and conditions meant to approve the Brexit from the European Union.

Transitional arrangements can not last for more than three years, and the agreement on the future relationship between the United Kingdom and the European Union can be concluded only after the UK has exit completely from the European Union. Furthermore, under the European Union law, the United Kingdom can not negotiate trade agreements with third countries before the exit from the European Union.

At the end of April 2017, the European Council approved the guidelines for Brexit negotiations. These guidelines define the general framework for the negotiations under Article 50 of the Lisbon Treaty and set out the positions and general principles that the Union will pursue during the negotiations (European Council (Article 50), 2017).

Under these guidelines, the European Union will act as a whole during the negotiations, with a view to achieving a fair outcome for all Member States as well as for its citizens. Thus, there will be no bilateral negotiations between the Member States and the United Kingdom. Any agreement with the United Kingdom will be based on a balance between rights and responsibilities, and the four freedoms of the Single Market remain indivisible.

The exit of the United Kingdom from the European Union will affect the business environment in the European Union that engages in trade or other activities in the United Kingdom as well as the UK business taking place in the European Union. This is precisely why the negotiations will aim to prevent a legislative vacuum once the EU Treaties have ceased to apply to the United Kingdom. The aim of the European Union is to minimize the costs for European Union citizens, for business, as well as for the Member States (European Council, 2017).

2. Foreign trade between Romania and the United Kingdom

Analysing the evolution of Romania's exports toward the United Kingdom, one can see annual growth is recorded almost in all years of the analysed period (1991-2017), with the exception of the following years: 1992, 2005, 2008, 2009. The highest annual growth occurs in 2000 (52.5%) and the most significant annual decrease occurs in 2009 (-13.1%) (see Figure 1).

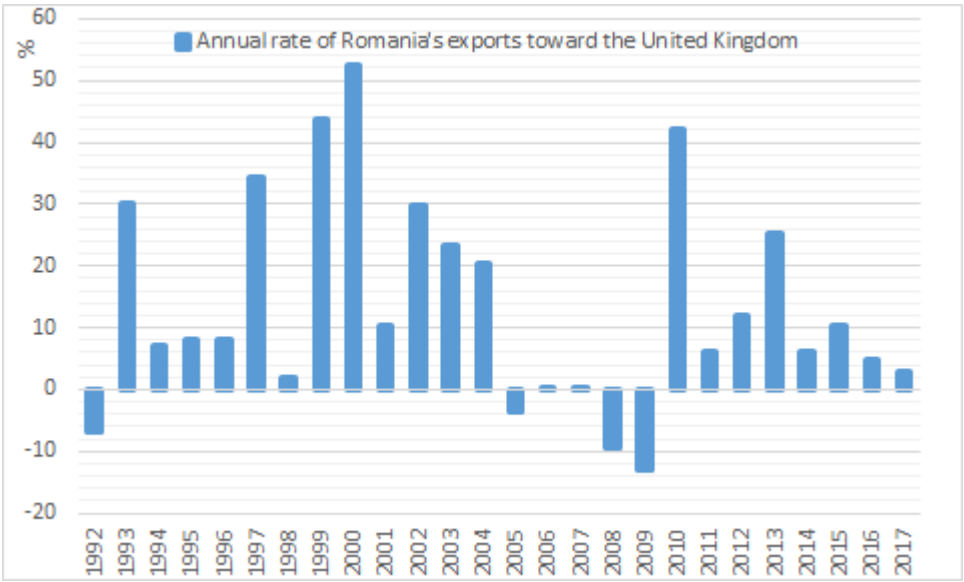

Figure 1. The evolution of Romania's exports toward the United Kingdom between 1992 and 2017

Source: author's calculation based on data from the National Institute of Statistics, 2019

The share of our country's exports toward the United Kingdom in Romania's total exports fluctuates between 3% (in 1995) and 6.7% in 2003. Towards the end of the analysed period, Romania's exports to the UK are around 4% (see Figure 2). In the period 2015-2018, the United Kingdom ranks fifth as a country of destination for Romanian exports (after Germany, Italy, France and Hungary). The United Kingdom has climbed in the hierarchy of the destination countries for Romanian exports after 2009.

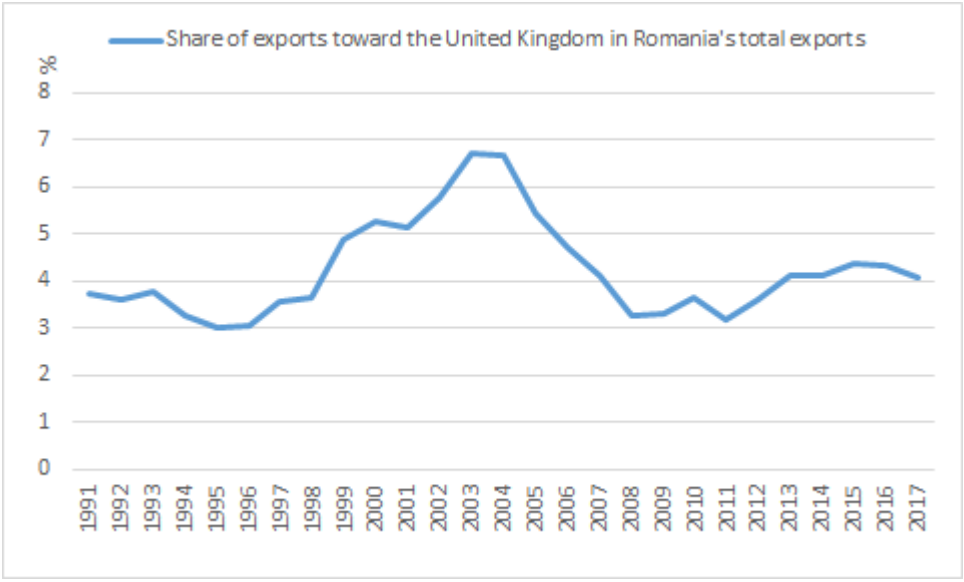

Figure 2. The share of Romania's exports toward the United Kingdom in Romania's total exports between 1991 and 2017

Source: author's calculation based on data from the National Institute of Statistics, 2019

Romanian exports toward the United Kingdom represent between 0.5% and 2% of GDP (see Figure 3). Since 2005, this indicator has values below 1.5%.

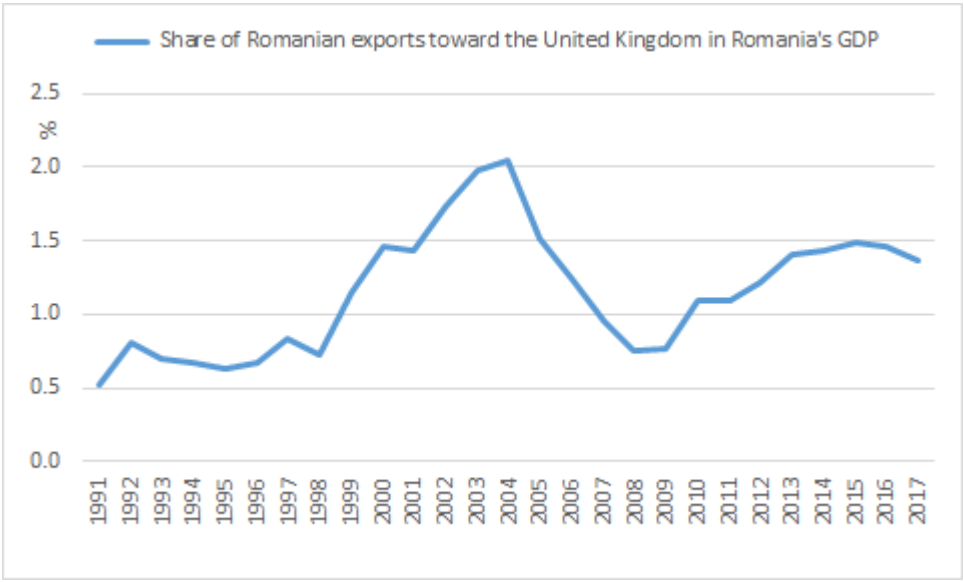

Figure 3. The share of Romanian exports toward the United Kingdom in Romania's GDP during the period 1991-2017

Source: author's calculation based on data from the National Institute of Statistics, 2019

The share of Romania's imports from the United Kingdom in Romania's total imports fluctuates between 1.9% (in 2006-2008) and 4.2% in 1999. Toward the end of the analysed period, the share of Romania's imports from the United Kingdom is slightly above 2% (see figure 4). In 2015-2018, the UK ranks 16th as a country of origin / expedition for Romanian imports. It is noticed that over time (after 2009), the United Kingdom comes down the hierarchy of countries of origin / expedition for Romanian imports.

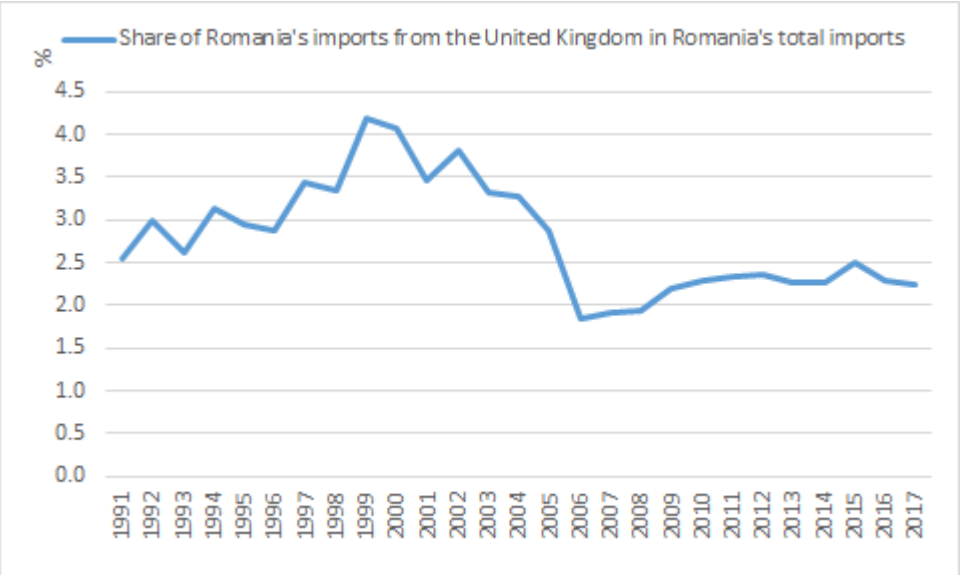

Figure 4. The share of Romanian imports from the United Kingdom in Romania's total imports during the period 1991-2017

Source: author's calculation based on data from the National Institute of Statistics, 2019

Analysing the annual evolution of Romania's imports from the United Kingdom, one can notice that there is an annual increase almost in all years of the analysed period (1991-2017), with the exception of the following years: 2003, 2006, 2009, 2013 and 2016. The highest annual increase takes place in 2000 (39.3%) and the most significant annual decrease occurs in 2009 (-22.6%) (see figure 5). We can say that the effects of the economic and financial crisis have influenced Romania's foreign trade with the United Kingdom in a sense of decrease (both Romania's imports from UK and Romania's exports toward the United Kingdom).

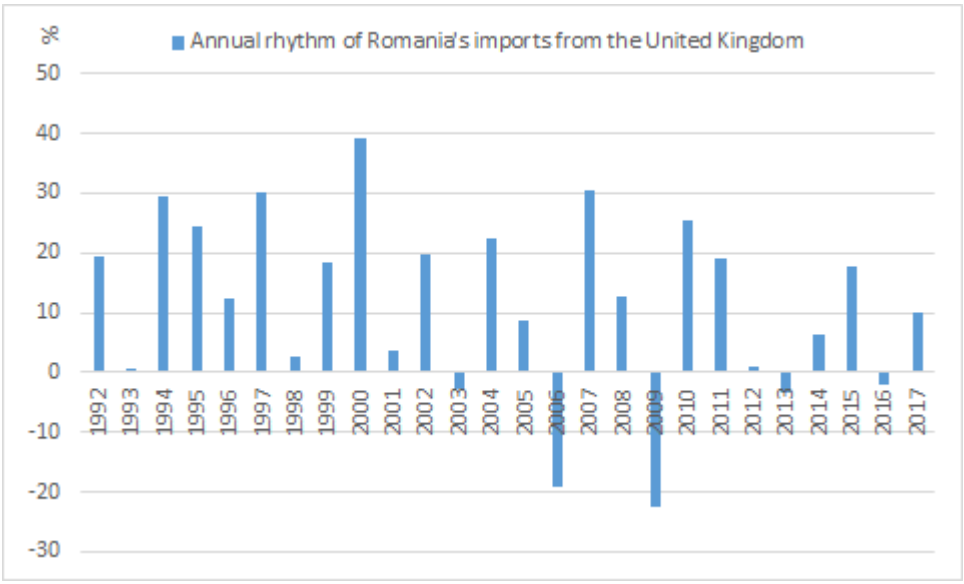

Figure 5. The evolution of Romania's imports from the United Kingdom between 1992 and 2017

Source: author's calculation based on data from the National Institute of Statistics, 2019

Romanian imports from the United Kingdom represent between 0.5% and 1.5% of GDP (see figure 6). Since 2006, they represent less than 1% of GDP.

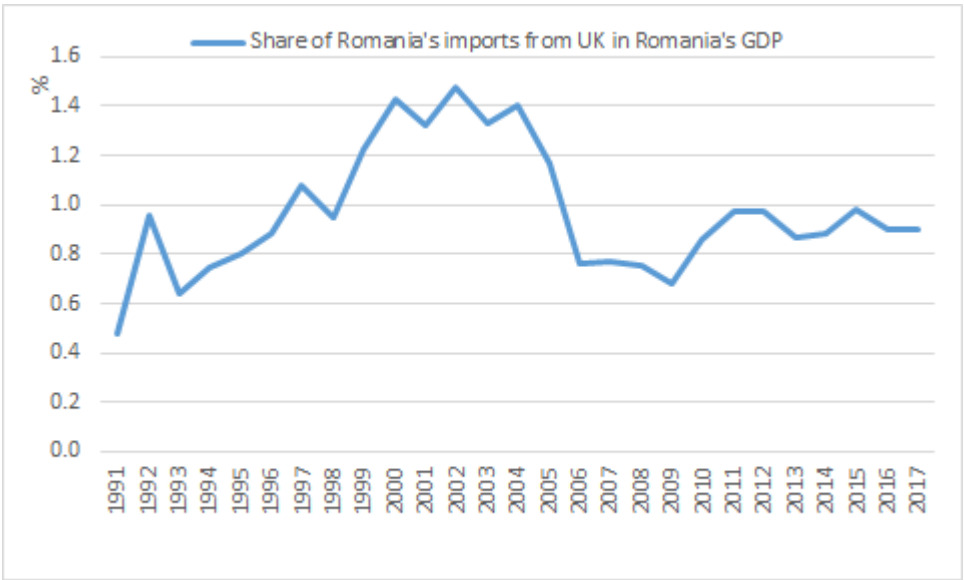

Figure 6. The share of Romanian imports from the United Kingdom in Romania's GDP during the period 1991-2017

Source: author's calculation based on data from the National Institute of Statistics, 2019

From figure 7, we can say that there are two different periods in the evolution of goods balance between Romania and the United Kingdom. Thus, between 1991 and 1999, Romania recorded mainly deficit in the trade relations with the United Kingdom (except for 1991 and 1993). From 2000 to 2017, the goods balance between our country and the United Kingdom is positive (with the exception of 2008). In the last years (2013-2018), the United Kingdom ranks first among the countries with balance of goods surplus in favour of our country.

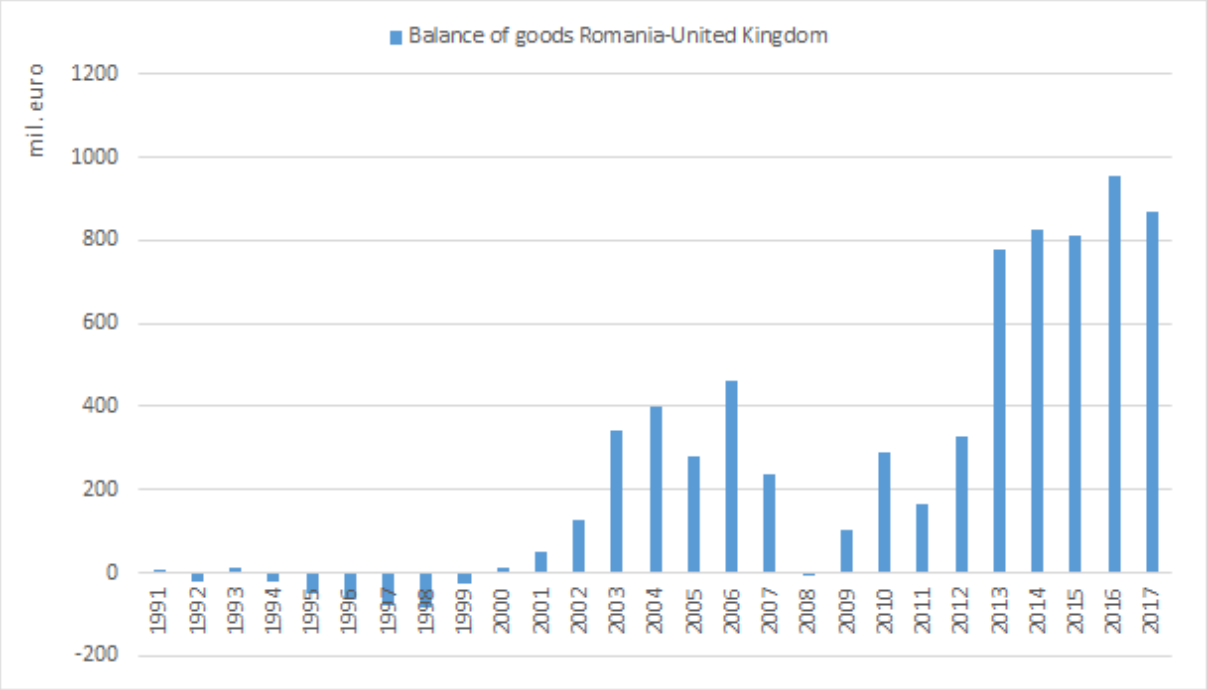

Figure 7. The goods balance between Romania and the United Kingdom in the period 1991-2017

Source: author's calculation based on data from the National Institute of Statistics, 2019

Analysing the evolution of the most important groups of products (according to the Combined Nomenclature), as a share in the exports of our country to the United Kingdom, between 1991 and 2017, we can make the following remarks. Thus, the share of Mineral Products (which ranked first in Romania's exports to the United Kingdom between 1991 and 1993) declined significantly in 1994, since 1997 until present this group of goods has generally less than 1% of total Romanian exports to UK. The share of Machinery and mechanical appliances; electrical equipment; sound and image recorders and reproducers is growing discretely, a major leap taking place in 1999. Since 2008, this group of goods ranks first as share of Romania's exports to the United Kingdom. The share of Textiles and textile articles has been growing until 2001, then it decreased gradually until present. Between 1994 and 2007, it held the first place in the exports of our country to the United Kingdom. The share of Vehicles and associated transport equipment has been growing discretely in Romania's total exports to the United Kingdom, in 2004 and 2013 taking place more significant leaps. The group of Base metals and articles of base metal has shown a discontinuous decline as a share of our country's exports to the United Kingdom, its importance at the end of the period compared to the 1991 values is not very different. The Romanian exports toward the United Kingdom have improved from the point of view of the structure, in the direction of increasing the share of intermediate and highly processed goods and decreasing the share of little processed goods (see figure 8).

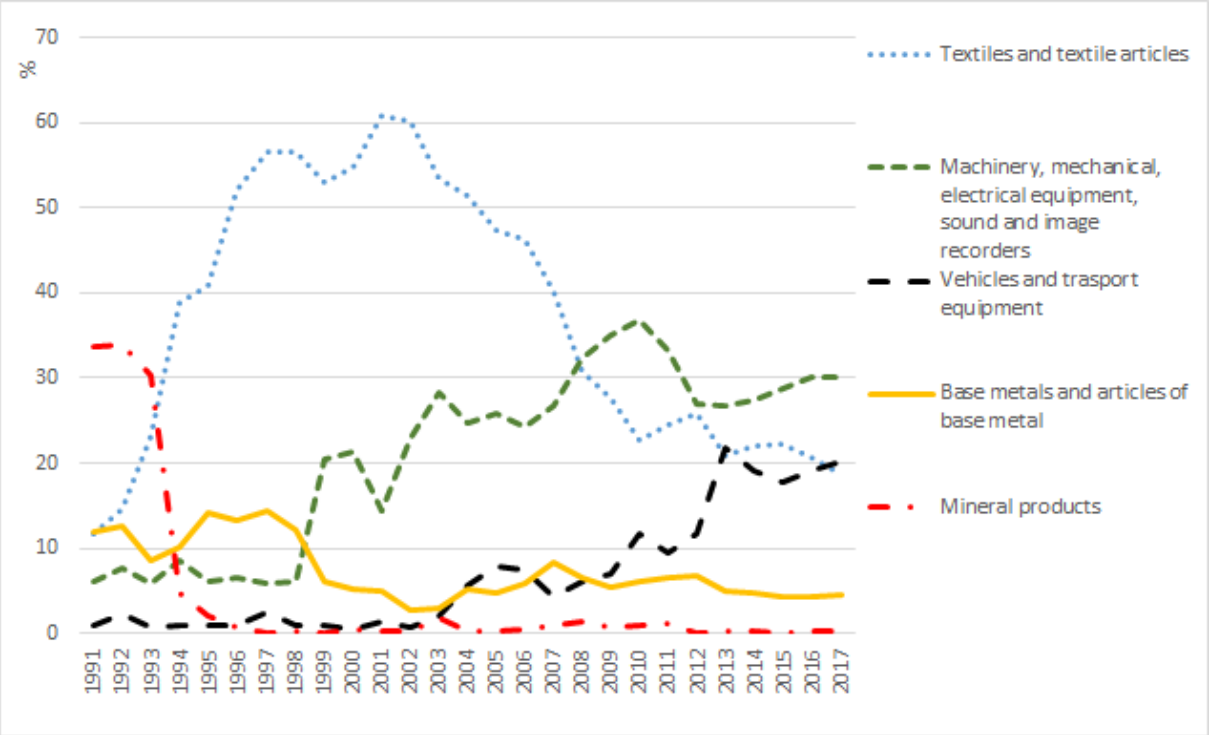

Figure 8. The evolution of Romania's exports toward the United Kingdom by the most important groups of products (according to the Combined Nomenclature) between 1991 and 2017 (shares) (%)

Source: author's calculation based on data from the National Institute of Statistics, 2019

Analysing the evolution of the most important groups of product (according to the Combined Nomenclature), as a share in the imports of our country from the United Kingdom, between 1991 and 2017, we notice some characteristics. After the high values recorded in 1991-1993 (with a peak in 1992), the imports of Mineral products from the United Kingdom decreased significantly in 1994, up to the present being generally below 2% (as a share of Romania's imports from the United Kingdom). The share of the Prepared foodstuffs, beverages and tobacco group of products was high in 1991 (22.6%), then it declined significantly in 1992 compared to 1991, oscillating between 1% and 4% until 2017. Romania's share of imports of Vehicles and transport equipment from UK increased slightly and discontinuously between 1991 and 2003. In 2004 there was an important increase, then is oscillated between 7% and 15% in the following period. The importance of our country's imports of Chemical products from the UK into Romania's imports from the United Kingdom showed a significant drop in 1992 compared to 1991, then, in the next period (1992-2017), it fluctuated between 12% and 20%. The share of imports of Textiles and textile articles increased significantly from 1991 to 2001, then it fell until 2006. Between 2007 and 2017, it fluctuated between 15% and 25%. The share of Machinery and mechanical appliances; electrical equipment; sound and image recorders and reproducers increased significantly between 1992 and 1994, then it declined in 1995. Between 1996 and 2017, it fluctuated between 22% and 34%, with values above 26% after 2004. We can notice that in general Romania's imports from the United Kingdom are dominated by medium and highly processed goods, with increasing share towards the end of the analysed period. There is a tendency of concentration of the groups of goods imported from the United Kingdom (see figure 9).

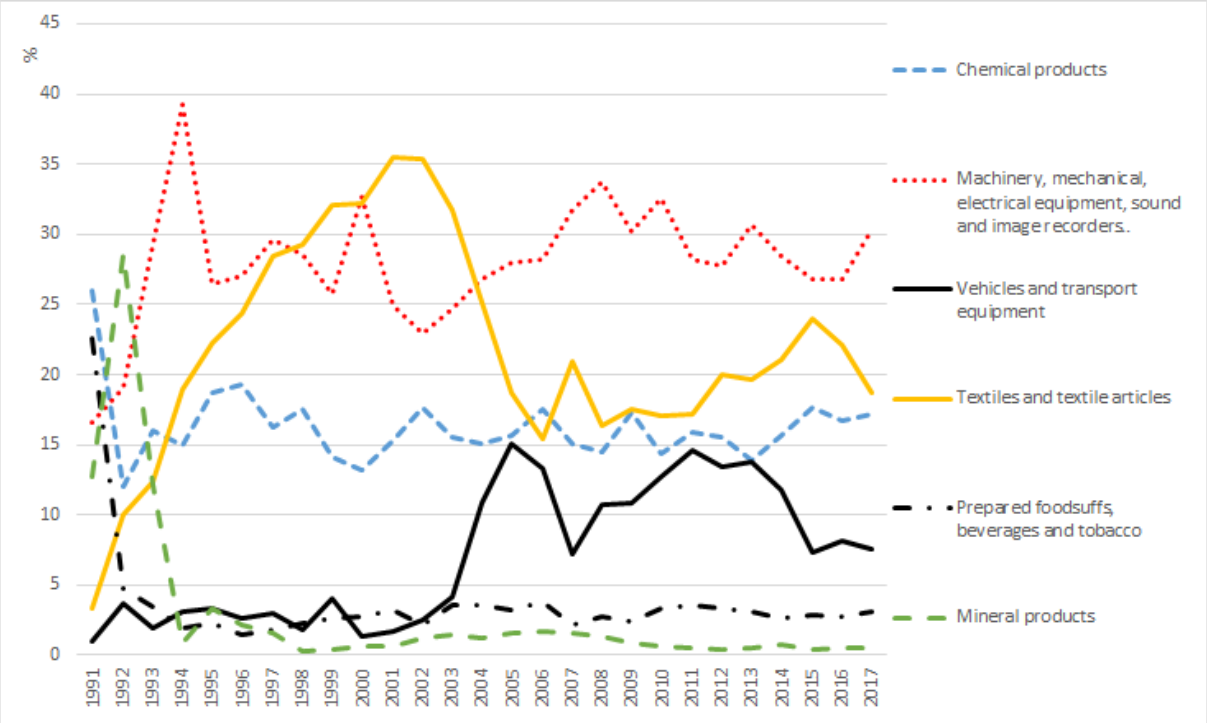

Figure 9. The evolution of Romania's imports from the United Kingdom by the most important groups of products (according to the Combined Nomenclature) between 1991 and 2017 (shares) (%)

Source: author's calculation based on data from the National Institute of Statistics, 2019

3. Conclusions

The analysis shows that Romania's exports to the United Kingdom had annual growth almost in all the years of the analysed period, so that the United Kingdom has climbed in the hierarchy of destination countries for the Romanian exports after 2009.

But, after 2009, the United Kingdom comes down in the hierarchy of origin / expedition countries for Romanian imports, although Romania's imports from the United Kingdom had annual growth almost in all the years of the analysed period.

After a period of deficits in the evolution of the goods balance between Romania and the United Kingdom (1991-1999), between 2000 and 2017, Romania's goods balance with the United Kingdom is mostly positive. Since 2013, the United Kingdom ranks first among the countries with surplus of the goods balance in favour of our country.

The Romanian exports toward the United Kingdom have improved their structure in the direction of increasing the share of intermediate and highly processed goods and decreasing the share of little processed goods

Generally, Romanian imports from the United Kingdom are dominated by medium and highly processed goods, whose share increased towards the end of the period under review. There is a tendency of concentration of the groups of goods imported from the United Kingdom.

Therefore, although the size of the trade between Romania and the United Kingdom is not high, given the existence of a surplus of the goods balance between these countries in favour of our country as well as the size of the British market, we consider it is necessary to conclude a trade agreement between Romania and the United Kingdom, in the case of the Brexit, in order to preserve the positive effects of our country's trade with the United Kingdom.

It would be desirable to introduce a wider trade and investment agreement between Romania and the United Kingdom with a view to harmonizing the legislation between the two countries in order to bring not only the disposal of tariff barriers to trade in goods and services between Romania and the United Kingdom, but also to the removal of non-tariff barriers to trade.

In conclusion, regarding things from the perspective of Romania's direct interests, it is important and useful to continue the trade relations with the United Kingdom.

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CASE STUDY ON THE VIEWPOINT OF PARENTS FROM A RURAL AREA CONCERNING MODERN EDUCATION AND ICT

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Abstract: *Technology is present in almost all aspects of live. It is generally considered that people living in the countryside are more reluctant to adapt to innovation. This study is designed as a questionnaire aiming at discovering the viewpoint of parents with children at secondary level in education (V-VIII) towards new ICT at school and at home and their awareness on the multitude of possibilities offered by communication technology. All of the students involved in the case study attend Răscăieți Elementary School (I-VIII) in Dâmbovița.*

Key words: *rural area, parents, ICT, education.*
JEL Classification*: I21, O30.*

1. Introducere

Society adapts to social, economic, technological evolution changes through education. Thus, the institutionalized education, the school has the task of educating the population according to the requirements of the labor market. Globally, education is modernized through the involvement of ICT tools in learning.

The process of adapting to the new technologies does not only concern students but also their parents. In both urban and rural areas, most homes have Internet connection and have various technological means of accessing the web such as computer or laptop, smart phone and more.

Although the new technologies have many advantages and are increasingly being introduced into learning, researchers' studies indicate that people in general spend a lot of their lives using new technologies that seem to create addictions and generate new health problems both physical and mental. This is why moderate use of new technologies is recommended especially for young children.

2. Case study on the viewpoint of parents from a rural area concerning modern education and ICT. The methodological context.

This study aimed at identifying the perceptions of rural parents about the extensive use of new technologies in their children's daily activities, both for educational and for relaxation purposes. It was carried on at *Răscăieți Elementary School (I-VIII) in* Dâmbovița County involving parents with children in grades V-VIII.

The research aims to answer the following questions:

1. How wide-spread is the use of the Internet and the tools used to access it taking into account the context (rural area and young students from 12 to 15 years old)?
2. What is the parents' opinion regarding the usefulness of ICT?
3. To what extent are the parents familiar with some of the positive features of communication through technology?

The hypotheses and issues studied:

H1: To a large extent homes have an Internet connection and at least two types of devices used to access the web.

H2: In the opinion of most of the participants in the research the new ICT tools used both in education and for communication or relaxation purposes are useful.

H3: Respondents are familiar and use some features the technology has to offer in communication.

The hypotheses formulated above are intended to be confirmed or denied by the respondents' answers.

The research method

The targeted group is made up of parents of young students (of gymnasium) from a rural school in Dâmbovița County, Romania. There are 79 students enrolled in grades V– VIII. The sample size is represented by 66 parents calculated at 95% confidence level and with a 5% confidence interval. The sampling mode - Non-equitable sampling was used. The research was conducted through the opinion poll and is a quantitative research based on the questionnaire tool.

The purpose of the questionnaire is to identify the perception of rural parents about the extensive use of new technologies in their children's daily activities. In the questionnaire, nominal questions were used. The questionnaire was applied through the face to face method. Identifying the level of importance of some criteria was achieved using the 5-step Semantic Differentiation Scale.

The questionnaire was processed in the database created in Microfoft EXCEL.

Question 1. Does your home have Internet connection?

Table 5. The existence of Internet connection at home

Response	Percentage
Yes	91
No	6

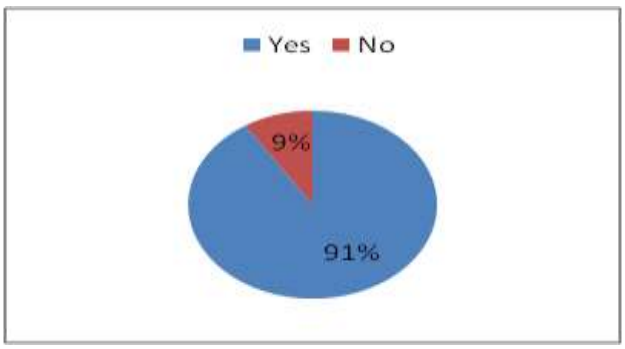

Figure 6. The existence of Internet connection at home

Source: elaborated by the author

Most of the respondents have an Internet connection at home (91%).

Question 2. Do you have available at home for your child/children?

Table 6. The ICT devices available at home

Response	Percentage
Computer (desktop or laptop)	47
Tablet/ iPad	24
Smartphone	29
None	0

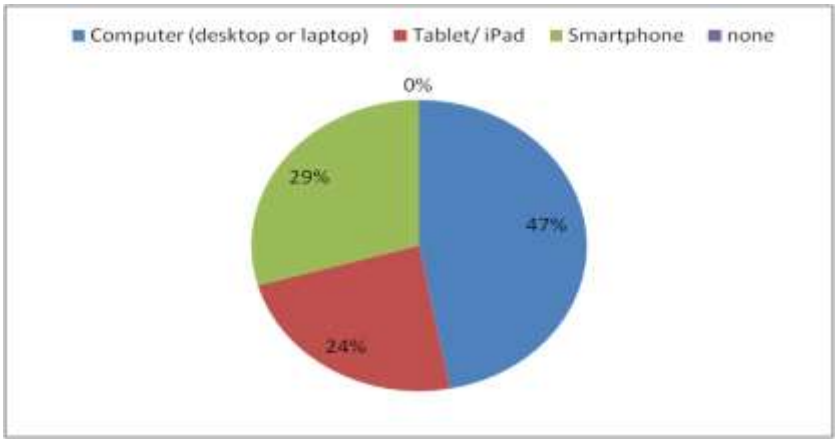

Figure 7. The ICT devices available at home

Source: elaborated by the author

We can observe from the chart that the computer and the smart phone are the most popular and only few have tablets or iPad.

Question 3. How many hours a day does your child spend using ICT?

Table 7. The time spent by children using the new technology

Response	Percentage
None	0
2 hours	58
4 hours	42
More than 4 hours	0
I don't know	0

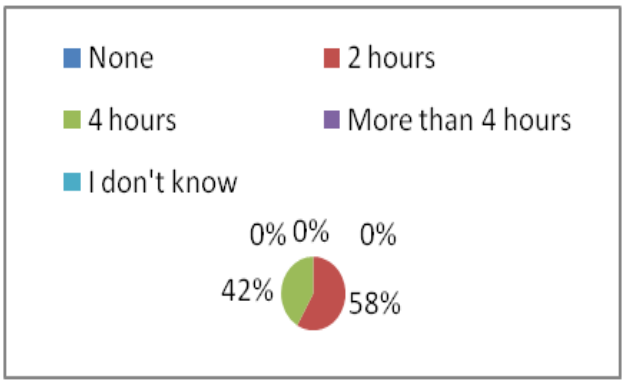

Figure 8. The time spent by children using the new technology
Source: elaborated by the author

Most children spend between two to four hours a day using the new media either for study or for enjoyment.

Question 4. How often does your child use the NICT for study or homework?

Table 8. The hours spent using ICT for study/ homework

Response	Percentage
Weekly	58
Monthly	17
Rarely	10
Not at all	0
I don't know	15

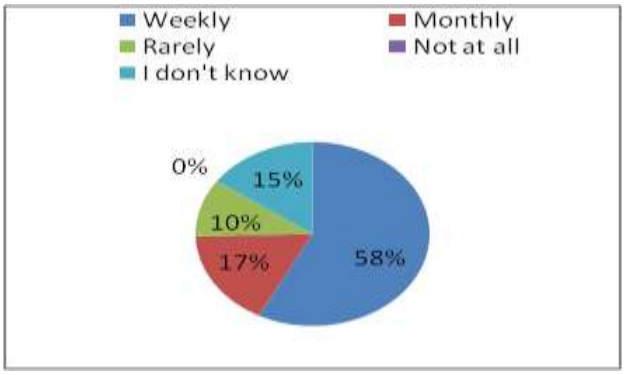

Figure 9. The hours spent using ICT for study/ homework
Source: elaborated by the author

From the answers of the respondents, most of the parents consider that their children use the new information and communications technology every week for study and homework, few – only monthly and a small number of parents answered rarely. However, a number of parents are not aware of the hours spent by their children for educational purposes.

Question 5. Do you consider the employment of ICT for school courses useful?

Table 9. The importance given to ICT in school

Response	Percentage
Very useful	31
Useful	54
Not useful	5
I don't know	10

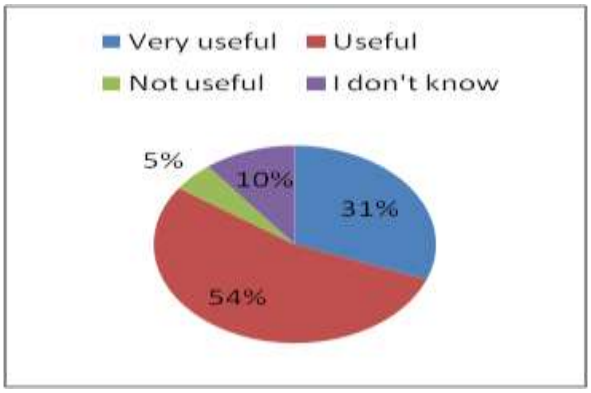

Figure 10. The importance given to ICT in school

Source: elaborated by the author

Most of the respondents acknowledge the usefulness of the ICT tools in teaching.

Question 6. How do you keep in touch with the school?

Table 10. Means of knowing the school report

Response	Percentage
Meetings	56
Telephone	27
Social group (whats up/messenger etc)	17
Electronic school report	0
School website	0

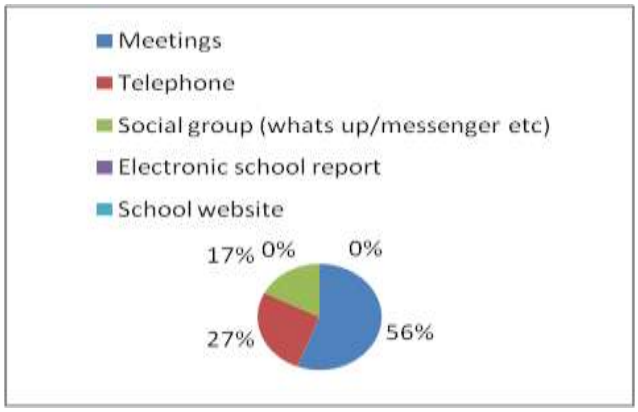

Figure 11. Means of knowing the school report

Source: elaborated by the author

Most of the respondents prefer the classic teacher-parent meetings while a few of the parents prefer using the telephone to obtain information about their child's school situation. None of the parents find information from the last two variants because they are not available at this school.

Question 7. What is your age?

Table 11. The age group of the respondents

Response	Percentage
35 or less	74
36-40	23
40-45	3
over 45	0

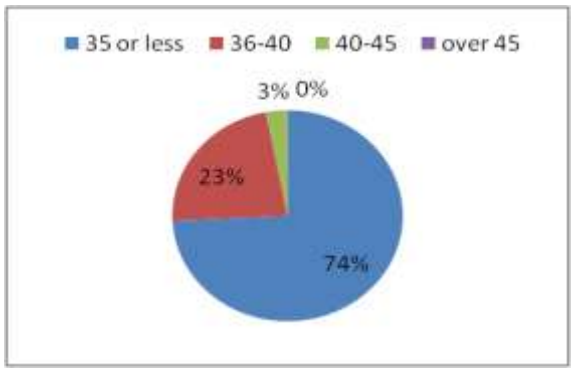

Figure 12. The age group of the respondents

Source: elaborated by the author

From this question we can conclude that the respondent group is mostly made up of young parents, age being an important factor in adapting to new technology and to new ideas.

3. Conclusions

The respondent group comprised young parents of 5-8th grade children attending *Răscăieți Elementary School (I-VIII) in* Dâmbovița County, a public rural area school unit

stated that they have Internet connection at home and a computer and at least a smartphone to access the Internet.

To a great extent, parents recognize the benefits of using NICT in teaching and learning. Though only 45% of them have a computer at home most of them answered that their children use ICT for study weekly.

Although parents are aware of the expansion of the new manners of communicating, most prefer face-to-face meeting with the teachers.

Regarding social groups for school purposes, there is only one group and it has about 17 members, parents only.

Also we are compelled to mention that the respective school unit does not have a website.

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AN EFFECTIVENESS MODEL IN PROCESSING ACTIVITIES OF AGRICULTURAL RAW MATERIAL

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Abstract: *In this thesis, it is proposed an algorithm that can be definitely used, starting with the simplicity and efficiency of the examined case of agricultural foodstuff industry in the Republic of Moldova – by this is meant the necessity of reducing the export of the primary agricultural materials, and gaining new technologies in the processing industry.*

Keywords: *raw material, processing, optimal program, product, economic-mathematic model, function, profit, eficiency.*

JEL Classification*: Q13, Q18, Q16.*

1. Introduction

The contribution of agriculture, forestry and fishery, according to Moldova data in figures - 2018 is relatively far under potential level. In 2014-2017, the gross added value constitutes respectively 84.3; 84.8; 85.3; 84.1 %.

The share of agriculture makes only 13.0; 12.2; 12.1; 12.2%. The explanation is simple: the processing structures of the agricultural raw materials are underdeveloped in Moldova. Unfortunately Republic of Moldova is mostly specialized in the export of agricultural raw materials. As a result of it, the number of jobs is in reduction, the gross value added is not in increasing. In addition, technologies for processing agricultural raw material, for transforming raw material into finished products are not always optimally used. Sometimes these (technologies) are not completely used, and agricultural raw material is exported. The export of raw material, economically is equivalent to the export of job places, with an increase of the unemployment level in the Republic of Moldova. In order to provide food companies with processing activities for agricultural raw materials, (companies) must be provided with an algorithm model for effectiveness in processing of agricultural raw materials. For this purpose the problem is formulated for the general case; by an explicit example the algorithm interpreted for solving forthcoming issues.

2. Model in processing activities of agricultural raw material

NORD company for processing of agricultural products dispose of ***n*** technologies, capable of production ***m*** finished products.

The profit, gained by the NORD company for an unit of finished products *i*, i=1, 2,..., *m* realized by using technology *j*, j=1, 2, ..., *n* is equal to P_{ij}, i=1, 2, ..., *m*; j=1, 2, ..., *n*;

is the market demand for product *i*, i=1, 2, ..., *m* constitute$\boldsymbol{D_i}$, *i*=1, 2, ..., *m*;

is the NORD company offers – $\boldsymbol{S_j}$, j=1, 2,..., *n*. Proceeding out of these the issue arises: to what extent the NORD company must use the technologies *j*, j=1, 2, ..., *n*, in the production processes of the finished products to achieve a maximum profit. We note by $\boldsymbol{X_{ij}}$ - the intensity of technologies used by the NORD company *j*, j=1, 2, ..., *n* in the production processes of the output finished products *i*, i=1, 2, ..., *m*. The initial data set out above can be entered in a matrix form (Table 1). Summary offer for finished products $\sum_{j=1}^{n}(S_j)$, in this case it will not exceed the overall demand on the market $\sum_{i=1}^{m}(D_i)$. In this case, the

issue is an open model and in the economic-mathematical language it has the following form:

determination of the maximum value of the function

$$f(x) = \sum_{i=1}^{m} \sum_{j=1}^{n} P_{ij} X_{ij}$$

Table 1. The initial data: general case; open model

Technologies / Finished product	**1**	**2**	**...**	**j**	**...**	**n**	**Demand**
1	P_{11} X_{11}	P_{12} X_{12}	...	P_{1j} X_{1j}	...	P_{1n} X_{1n}	$\leq D_1$
2	P_{21} X_{21}	P_{22} X_{22}	...	P_{2j} X_{2j}	...	P_{2n} X_{2n}	$\leq D_2$
...	...	...	...	...	...	...	...
i	P_{i1} X_{i1}	P_{i2} X_{i2}	...	P_{ij} X_{ij}	...	P_{in} X_{in}	$\leq D_i$
...	...	...	...	...	...	...	...
m	P_{m1} X_{m1}	P_{m2} X_{m2}	...	P_{mj} X_{mj}	...	P_{mn} X_{mn}	$\leq D_m$
Total Offer	S_1	S_2	...	S_j	...	S_n	$\sum_{j=1}^{n} S_j \leq \sum_{i=1}^{m} D_i$

$$\sum_{j=1}^{n} P_{ij} X_{ij} \leq D_i, \quad \text{i=1, 2, ..., m}$$

Volume of products **i**, i=1, 2, ..., m, achieved by all technologies, will not exceed the demand $\boldsymbol{D_i}$, i =1, 2, ..., **m** in the market;

$$\sum_{i=1}^{m} P_{ij} X_{ij} \leq S_j, \quad \text{j=1, 2, ..., n}$$

The agriculture food staff company NORD makes full use of technological capacities in processing of the agricultural raw material.

$X_{ij} \geq 0$, i=1, 2, ..., m; j=1, 2, ..., n

Intensity of using technologies ***j***, j=1, 2, ..., n

The optimal program can be identified, using the potential method [Maximilian S. "Modeling of economic processes", USM, 2009]. For this purpose the closed model in table 1 can be transformed into a balanced model, by introducing the fictitious variables $\mathbf{X_{i,\ n+1}}$, i=1, 2, ..., m (Table 2). Depending on the number of technologies used in processing the agricultural raw material and of the number of finished products, this (issue) can be solved manually by the potential method. To this end, here is an example.

Table 2. Initial data: general case; balanced model

Technologies / Final product	1	2	...	j	...	n	(n+1)	Demand
1	P_{11} X_{11}	P_{12} X_{12}	...	P_{1j} X_{1j}	...	P_{1n} X_{1n}	0 $X_{1,n+1}$	$=D_1$
2	P_{21} X_{21}	P_{22} X_{22}	...	P_{2j} X_{2j}	...	P_{2n} X_{2n}	0 $X_{2,n+1}$	$=D_2$
...	...	...	...	...	...	...	...	...
i	P_{i1} X_{i1}	P_{i2} X_{i2}	...	P_{ij} X_{ij}	...	P_{in} X_{in}	0 $X_{i,n+1}$	$=D_i$
...	...	...	...	...	...	...	...	...
m	P_{m1} X_{m1}	P_{m2} X_{m2}	...	P_{mj} X_{mj}	...	P_{mn} X_{mn}	0 $X_{m,n+1}$	$=D_m$
Total Offer	S_1	S_2	...	S_j	...	S_n		$\sum_{j=1}^{n} S_j \leq \sum_{i=1}^{m} D_i$

Example:

The agricultural food staff company NORD dispose of four technologies in processing agricultural raw materials in output of three finished products. Production capacities of the products 1; 2; 3 in the profit of the available technologies constitute: S_1 = 52 tons; S_2 = 60 tons; S_3 = 85 tons; S_4 = 200 tons. Market demand for products 1; 2; 3 constitutes: D_1 = 200 tones; D_2 = 100 tons; D_3 = 150 tons. The specific profit (per unit) realized after products marketing 1; 2; 3 in the profit of technologies in processing the agricultural raw material is known (Table 3). The issue to be set: to identify optimal use of technological capacities in processing of agricultural raw material for total profit realized by the NORD company, will be maximal one.

For this purpose by the variable $\boldsymbol{X_{ij}}$, i=1; 2; 3; j=1; 2; 3;4, it noted the intensity use of technologies for processing agricultural raw materials 1; 2; 3;4, for a profit of the finished products 1; 2; 3. The overall profit in this case will make:

$$P(x) = 2{,}5X_{11} + 2{,}2X_{12} + (-M)X_{13} + 2{,}8X_{14} + 1{,}6X_{21} + 1{,}0X_{22} + 1{,}9X_{23} + 1{,}2X_{2,4} + 0{,}8X_{31} + 1{,}0X_{32} + 0{,}6X_{33} + 0{,}9X_{34}$$

, when M > 0, i. e. it means technology 3 cannot output product 1 (profit is negative). The economic - mathematical model has the form:

$P(x) \Rightarrow$ maximum în the following conditions:

Table 3. Initial data: open mode

Technologies / Finished product	1	2	3	4	Need for finished products
1	2,5 X_{11}	2,2 X_{12}	-M X_{13}	2,8 X_{14}	≤200
2	1,6 X_{21}	1,0 X_{22}	1,9 X_{23}	1,2 X_{24}	≤100
3	0,8 X_{31}	1,0 X_{32}	0,6 X_{33}	0,9 X_{34}	≤150
Total	52	60	85	200	

$$\left.\begin{aligned} X_{11}+X_{12}+X_{14} &\le 200 \\ X_{21}+X_{22}+X_{23}+X_{24} &\le 100 \\ X_{31}+X_{32}+X_{33}+X_{34} &\le 150 \end{aligned}\right\}$$

The volume of the finished products 1; 2; 3 will not exceed the market demand for finished products. respective.

$$\left.\begin{aligned} X_{11}+X_{21}+X_{31} &= 52 \\ X_{12}+X_{22}+X_{32} &= 60 \\ X_{23}+X_{33} &= 85 \\ X_{14}+X_{24}+X_{34} &= 200 \end{aligned}\right\}$$

Company NORD for processing of agricultural raw amterial use the production capacities to maximum. ximum...capacitățile de producțiedisponibile.la

The problem can be solved by one of: MODI, FORD-Falcherson, POTENTIAL models. For this purpose, the initial data, the open model in the table 3, need to be transcribed in table 4, where technologies 1; 2; 3; 4 are supplemented with 5 - fictitious technology; variables X_{15}, X_{25}, X_{35} are introduced to transform inequalities into equalities. The initial data become balanced (Table 4).

Based on the data in table 4, the economic-mathematical model will have the form:
To determine the maximum value of the a funcţion $P(x)$ in following conditions:

Table 4. The initial data: balanced model

Tehnologies / Finished products	1	2	3	4	5	Need for finished products
1	2,5 X_{11}	2,2 X_{12}	-M X_{13}	2,8 X_{14}	0 X_{15}	=200
2	1,6 X_{21}	1,0 X_{22}	1,9 X_{23}	1,2 X_{24}	0 X_{25}	=100
3	0,8 X_{31}	1,0 X_{32}	0,6 X_{33}	0,9 X_{34}	0 X_{35}	=150
Total	52	60	85	200	53	

$$X_{11}+X_{12}+X_{13}+X_{14}+X_{15}=200$$

$$X_{21} + X_{22} + X_{23} + X_{24} + X_{25} = 100$$

$$X_{31} + X_{32} + X_{33} + X_{34} + X_{35} = 150$$

$$X_{11} + X_{21} + X_{31} = 52$$

$$X_{12} + X_{22} + X_{32} = 60$$

$$X_{13} + X_{23} + X_{33} = 85$$

$$X_{14} + X_{24} + X_{34} = 200$$

$X_{15} + X_{25} + X_{35} = 53$ (The demand is 200+100+150=450; the offer constitues 52+60+85+200=397; 450-397=53)

The initial data are transcribed in table 5.1.

Table 5.1. The initial data

2,5	2,2	-M	2,8	0	200
1,6	1,0	1,9	1,2	0	100
0,8	1,0	0,6	0,9	0	150
52	60	85	200	53	450

Proceeding out of the table 5.1 it is was determined:
$\max\{2{,}5;\ 2{,}2;\ -M;\ 2{,}8;\ 0;\ 1{,}6;\ 1{,}0;\ 1{,}9;\ 1{,}2;\ 0\} = 2{,}8$

We fill in square (1; 4) with minimum $\{200; 200\} = 200$.

We set up table 5.2

Table 5.2. Iteration 1

2,5	2,2	-M	2,8 200	0	-
1,6	1	1,9	1,8	0	100
0,8	1	0,6	0,8	0	150
52	60	85	-	53	250

According to table 5.2 it is determined:
$\max\ \{2{,}2;\ -M;\ 0;\ 1{,}6;\ 1;\ 1{,}9;\ 1{,}8;\ 0;\ 0{,}8;\ 1;\ 0{,}6;\ 0{,}8;\ 0\} = 1{,}9$

fill in the square box (2;3) with $\min\{100;\ 85\} = 85$.

It was designed table 5.3. where are performed iterations 1 şi 2.

Table 5.3. Iteration 2

2,5	2,2	-M	2,8 200	0	-
1,6	1,0	1,9 85	1,8	0	15
0,8	1,0	0,6	0,8	0	150
52	60	-	-	53	165

According to table 5.3 we determine:
$\max\ \{1{,}6;\ 1;\ 0;\ 0{,}8;\ 1;\ 0\} = 1{,}6$. We fill in square box (2;1) with $\min\{52;\ 15\} = 15$.

it was designed out table 5.4, where iterations 1; 2; 3 are performed.

Tablel 5.4. Iteration 3

2,5	2,2	-M	2,8 200	0	-
1,6 15	1	1,9 85	1,8	0	-
0,8	1	0,6	0,8	0	150
52-15=37	60	-	-	53	165

According to table 5.4 we determine:
max $\{0,8;\ 1;\ \ 0\} = 1$. We fill in the square (3;2) with minimum $\{60;\ 150\} = 60$.

It was worked out table 5.5, where iterations 1; 2; 3; 4. are performed.

Table 5.5. Iterations 4.

2,5	2,2	-M	2,8 200	0	-
1,6 15	1	1,9 85	1,8	0	-
0,8	1 60	0,6	0,8	0	90
37	-	-	-	53	90

According to table 5.5 we determine:
max$\{0,8;\ 0\} = 0,8$. Fill in the quare (3;1) with minimum $\{37;\ 90\} = 37$.

Table 5.6 was worked out, where all iterations have been performed.

Table 5.6. The optimum solution.

2,5	2,2	-M	2,8 200	0	-
1,6 15	1	1,9 85	1,8	0	-
0,8 37	1 60	0,6	0,8	0	53
-	-	-	-	53	53

In the Table 5.6 the obtained optimal solution is shown. In the agricultural food company NORD, technologies 2; 3; 4 will be used to output the products 3; 2; 1.

$$P^* = 2,8 \cdot 200 + 1,6 \cdot 15 + 1,9 \cdot 85 + 0,8 \cdot 37 + 1 \cdot 60 = 835,1\ (thousand.MDL)$$

Technology 1 will be used to output products 2 and 3. The total profit will be:

3. Conclusions

Application of economic-mathematical methods in the economic analyses and studies generates two effects: (1) - proposes well-reasoned theoretical and practical modalities in solving the problem under study; (2) – a concept is proposed, which must be based on the policies, economic development strategies, in the above examined case of the agriculture food industry in the Republic of Moldova. The algorithm proposed in this thesis

may be easily used proceeding out from its simplicity and efficiency. One of the most important economic problems in the Republic of Moldova is the need to reduce the export of agricultural raw materials, to create the most diverse and original technologies for processing agricultural raw materials, and to obtain original finished products of no analogue out of the country. In this way the export of finished products can be increased. The quality, originality and the relatively low price of the products serve as basis of increasing demand for these products out of the Republic of Moldova.

The development of the industry of processing of agricultural raw material, can contribute indirectly to the increase of the demand for most diverse working professions, therefore to a higher quality of life.

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THE LEADERSHIP, STIMULATING FACTOR IN MANAGEMENT IMPROVEMENT. CASE STUDY – CULTURAL INSTITUTIONS OF ARGEŞ COUNTY

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Abstract: *The current premise is given by leadership as a moral factor in the process of management improvement within the organization. The research methods used are the following: Observation and analysis of documents and quantitative analysis based on questionnaires. The question of this research: Is the leadership in the cultural institutions of Argeş County accepted as the most performing form of management? The leadership is a stimulating force in improving organizational management into the cultural institutions in Argeş and influence organizational performance. The purpose of this research: Leadership positively influences organizational performance.*

Keywords: *leadership, culture, organizational performance, management improvement.*
JEL Classification: *A14, M12, M54.*

1. Introduction

The current challenge of cultural institutions in Romania consists in the existence and interdependence between leadership and the performance of the organization.

Institutional management's ability to accept and promote leadership as a form of leadership can lead to organizational performance (Luthans, 1992).

Against the backdrop of substantial changes in culture, managers must demonstrate leadership skills, paying particular attention to changing working conditions and promoting a new culture of training based on innovative concepts.

The leadership skills are: the tools, behaviors and capabilities that a person needs to be successful in motivating and coordinating others (Goleman et al., 2015). However, real driving skills imply something more, the ability to help people believe in their own abilities.

2. Content

Performing institutions are distinguished from the least efficient ones in that the managers of the former treat innovation as a permanent process of adapting activity to changes occurring in the internal environment but also in the external environment (human, economic, socio-cultural factors , informational, technological) (Gardner et al., 2014).

It comes to managers' concerns to analyze and develop innovative strategies, projects, plans, methods, organizational structures within the institutions they administer without ignoring the degree of risk, unpredictability, and uncertainty of the innovative process.

The leadership is a factor contributing to the proper formation and capitalization of the human potential of employees in coordinating spiritual, intellectual, emotional and professional work (Goleman, 2015).

The leadership is the link between the members of a working team and is considered an innovative management.

Researcher R. Daft (1988) defines leadership as the mutual link between the leader and the team members, they show mutual influence and act for the common purpose of achieving organizational goals and performance.

Leaders are distinguished from managers through the human interaction relationship they develop with their employees. On the one hand, leaders have

collaborative and cooperative relationships with team members, on the other hand, managers give orders and expect to be executed by subordinates without comments (Goleman, 2016).

Studies show that organizations that are led by leaders are achieving organizational performance faster and keep it on long term.

These things are possible due to the qualities that a leader has, namely:

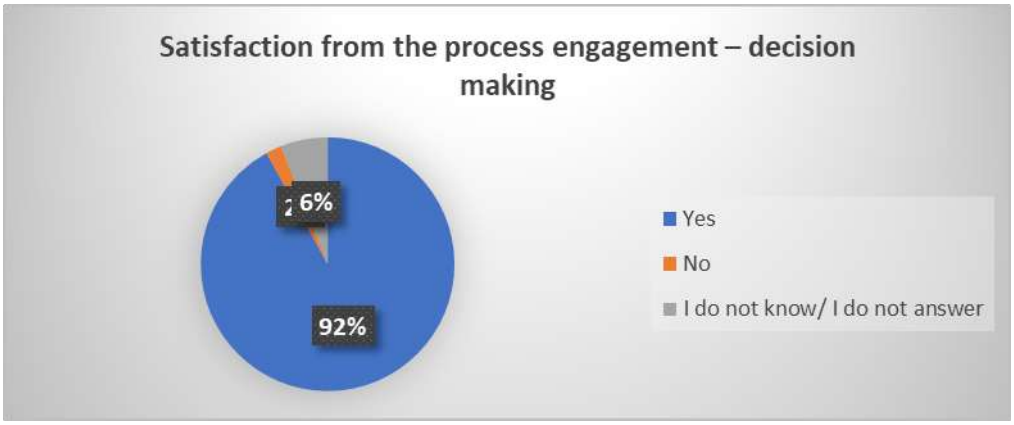
- maintain a balance in the social distance towards the team members on the co-ordination;
- encourages loyalty to the group;
- encourages teamwork to achieve common goals;
- support employees to develop their professional performance;
- encourages the initiative of team members;
- they are flexible and adapt their leadership style to different contexts and situations;
- they show emotional intelligence, empathy with each member of the team;
- execute a balanced control over the employees;
- they are firm in their decisions and assume success, but also the failure with the team;
- represent a model to follow for employees;
- they act to solve conflicts through communication and involvement;
- are the promoters of the difficult activities and guide the team members;
- are the ones who define and follow the vision of the organization;
- are the ones who efficiently allocate the resources of the organization;
- are an example of ethical behavior to follow.

Based on a study of the theoretical aspects of leadership, we examined the practical aspects of the subject investigated within several cultural institutions in Arges County.

Respondents' responses to the importance of leadership as a driving factor in improving management have been distributed according to the charts as follows.

Thus, we applied a questionnaire to the employees of 5 representative cultural institutions, on a sample of 97 respondents, of which 5 managers and 92 respondents with execution positions, different ages, different genres, different level of education.

Chart 1. Satisfaction from the process engagement – decision making



Source: Author

After centralizing the results, 92% of respondents feel themself appreciated if they are involved in decision-making, if they are asked for professional opinions that management takes into account in making final decisions. This approach requires

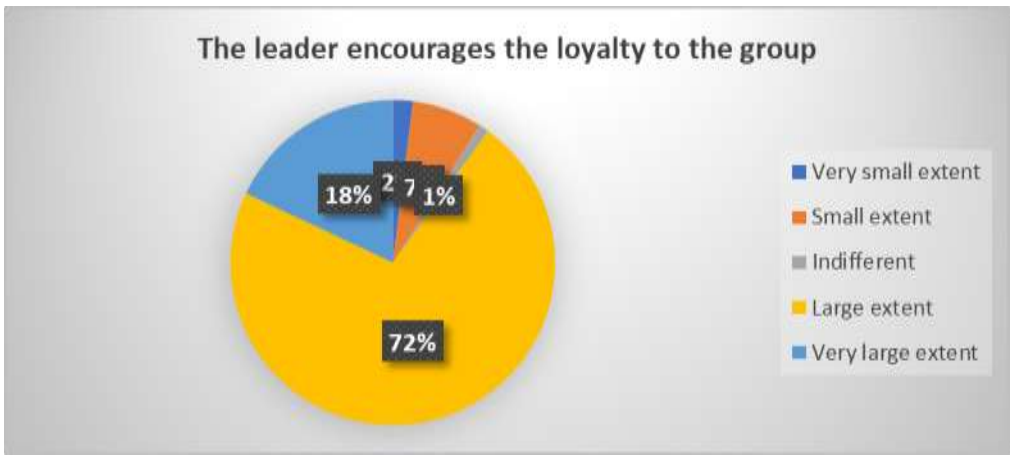
employees to be informed, to work with more dedication and to be more confident in their own power, the ultimate benefit of the institution, by increasing labor productivity.

Chart 2. The leader encourages the teamwork to achive the goals

Source: Author

80% of respondents appreciated, to a great extent and to a very great extent, the leader's quality to encourage teamwork, to keep the team toghether, all of which are at the service of achieving the organization's goals.

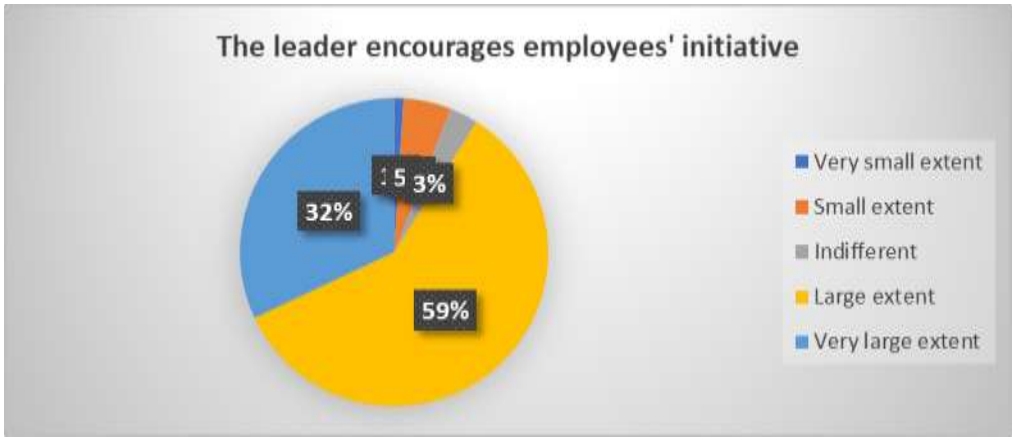
Chart 3. The leader encourage the loyalty to the group



Source: Author

90% of respondents appreciated the positive impact they have on self-confidence, self-reflection and self-development, encouraging group loyalty promoted by the leader.

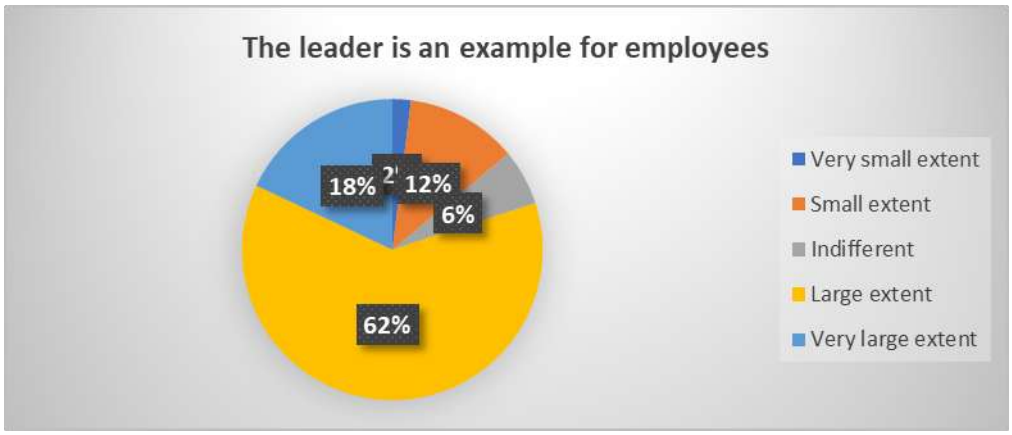
Chart 4. The leader encourages employees' initiative



Source: Author

91% of respondents appreciate the encouragement of employees' initiatives by leaders in leadership positions as beneficial to competitive and willing people to advance their careers and to achieve the institution's goals.

Chart 5. The leader is an exemple for employees



Source: Author

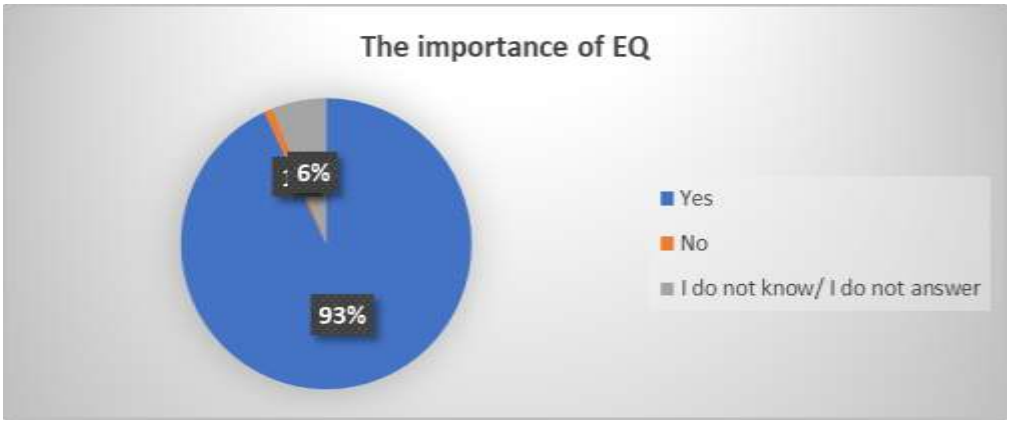
80% of respondents consider the leader an example to follow, a model of ethics and professionalism. Leaders are more introspective about their impact on others and are confident in their own power.

Chart 6. The leader defines and follows the vision of the organization

Source: Author

96% of those interviewed said that it is the leader who defines and follows the vision of the organization. It is imperative that the leader has a clear vision and strategy at the same time.

Chart 7. The importance of EQ



Source: Author

Interpersonal sensitivity, as a leader's attribute, reflects social skills, tact, and perceptions. The high score, that is, 93% of respondents appreciate the importance of the presence of emotional intelligence, which indicates a friendly, warm, popular and empathetic person.

Chart 8. The level of influence of leadership on the performance of the cultural institution

Source: Author

From the analysis of the results, following the application of the questionnaire, it was revealed that, to a great extent and to a very great extent, as having a significant impact on the performance of analized cultural institutions, the level of influence that the leaders exercise.

3. Conclusions

The performed scientific, theoretical and practical research, allows the following conclusions and recommendations:

- it requires the continuous improvement of the leadership, in the conditions of rapid changes, for the successful development of the institution and the achievement of the organizational performance;
- the leadership and teamwork contribute to the optimal valorisation and increase of the level of employee satisfaction and motivation, which leads to a high work productivity;
- leadership is a driving factor in improving management.

Leaders make decisions, taking into account the team members' opinions on: allocation of resources, evaluation of collective and individual results, quality of work, plans and work projects.

There is no ideal leaderchip style, but according to the main management functions, appear the need for leadership training to apply behaviors such as: producer of positive results, contractor, integrator and administrator.

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ROLES OF LEADERS IN IMPLEMENTING ORGANIZATIONAL CHANGE MANAGEMENT

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Abstract: *During times of complex changes, a leader must be able to rely on a wide range of skills and attributes and be able to apply them at the right time and in the right way. The present paper aims to explain the importance of efficient management of the transformations that take place in an organization and the role played by the leaders in the effective implementation of changes within a company. The purpose of the study is to explore the role of leadership in organizational change and how leaders manage the change in organization. For the elaboration of this article were used secondary information drawn from books, articles, reports and studies related to leadership and organizational change. Research on the role of leaders in organizational change shows that leaders who attach importance to employee participation in making organizational decisions, who are charismatic, have a democratic approach and keep communication channels open, are more successful in implementing change management.*

Key words*: organizational change, change management, efficient leader skills, leadership models.*
JEL Classification*: M1, M21.*

1. Introduction

Change is natural, the weather and the times also change, our (economic, social, political) environment changes, attitudes and mentalities change. The last decades have been characterized by periods of unprecedented transformations in all areas of activity and no one is immune to the revolutions. The world is changing, and change will happen with or without our will. Today's environment is inherently uncertain and unpredictable. Successful organizations, however, are converting uncertainty into opportunity and growth but, to do this, leaders need new approaches to navigate successfully the increasing pace of change and complexity.

Organizational change has become the rule rather than the exception for many organizations (Kieselbach et al., 2009). The ability of organizations to manage and survive change is becoming increasingly important in an environment where competition and globalization of markets are ever intensifying. With the ever-increasing complexity of the organizational environment, the systems concept no longer seems adequate in dealing with complex phenomena. This shortcoming, among others, has led to the emergence of complexity theory. The complexity of the organizational environment makes the system concept no longer adequate in dealing with complex phenomena. This shortcoming has led to the emergence of complexity theory being more of use. In the complexity paradigm, systems are usually considered to be evolving or self-organizing into something new. By integrating complexity and systems theories, the disruptive, and fluid processes of organizational change may be better understood.

Change has always been an important issue for an organization, as it has always been a common thing, specific of human life.

Lorenzi and Riley (2000, pp.116-124) identify four types of changes, with the definite possibility of overlap among them:

• Operational changes, affecting the way the ongoing operations of the business are conducted;

• Strategic changes, that occur in the strategic business direction;

• Cultural changes, which affect the basic organizational philosophies by which the business is conducted;

• Political changes, occurring in staffing primarily for political reasons of various types.

Change is a given and a top priority across all types of organizations, but studies consistently show between 50 and 70% of planned change efforts fail. It doesn't bode well for organizational ambitions if critical change is (at best) just as likely to fail as it is to succeed (Dinwoodie et al., 2015, p.4).

2. Roles of a leader during organizational change

To analyze how leadership intends to achieve sustainability in organizational change, we need to analyze the role and responsibilities of leaders during change processes.

According to By (2005), change is a feature present in organizational life, both operationally and strategically, so organizational change is a challenge for all participants in the change process.

A change effort or initiative must start with a vision. Whether change is prompted by external (political, economic, social or technological) or internal factors (policy, systems or structure), creating a vision will clarify the direction for the change. In addition, the vision will assist in motivating those that are impacted to take action in the right direction (Ryerson University, 2011).

Leadership is being capable of influencing others in order to achieve the specified goals, leading the organization to become more consistent and harmonious (Sharma and Jain, 2013, p. 310).

Leaders play an important role in setting an example for all those values, behaviours and considerations expected from employees, in order to be more flexible and adaptable to organizational change. In actual business context, leaders must increase their vigilance because it is crucial to be receptive to the clues that appear. It is imperative that their attention is not distracted by the routine, the many tasks they must do, and it is vital not to be blinded by the habit, the familiarity of the environment and the context. An efficient leader has to be a good detective - to see those things that happen, but which others do not see and whose consequences on the organization remain totally foreign.

A good leader is the connected leader - connected to himself, connected to the common purpose of the team and organization and connected to his people. For a leader to lead the people through the process of organizational change it is no longer enough to stand out, but he need to know his team and find the elements that connect people to each other and to them for the common purpose of the organization. The connector leader brings together and maintains the unity of a diverse grouping and creates a common space, in which different perspectives and stories are invited and welcomed. Get to know yourself and get to know your people, because those who feel represented by you in concerns, aspirations, experiences and destiny will follow you.

Effective leaders acknowledge that their support is crucial to success of the change and commit to doing their part.

The following are some of the roles leaders may play as they drive change in their organization.

- **Sponsor.** Leaders act as advocates for the change at their level in the organization. They are representatives who keep the change in front of their peers, the "higher-ups." A Sponsor is the person who won't let the change initiative fail from lack of attention and is willing to use their political capital to make the change happen.
- **Role Model.** Leaders of change must be willing to go first. They demonstrate the behaviours and attitudes that are expected of everyone else. Employees

watch leaders for consistency between words and actions to see if they should believe the change is really going to happen.

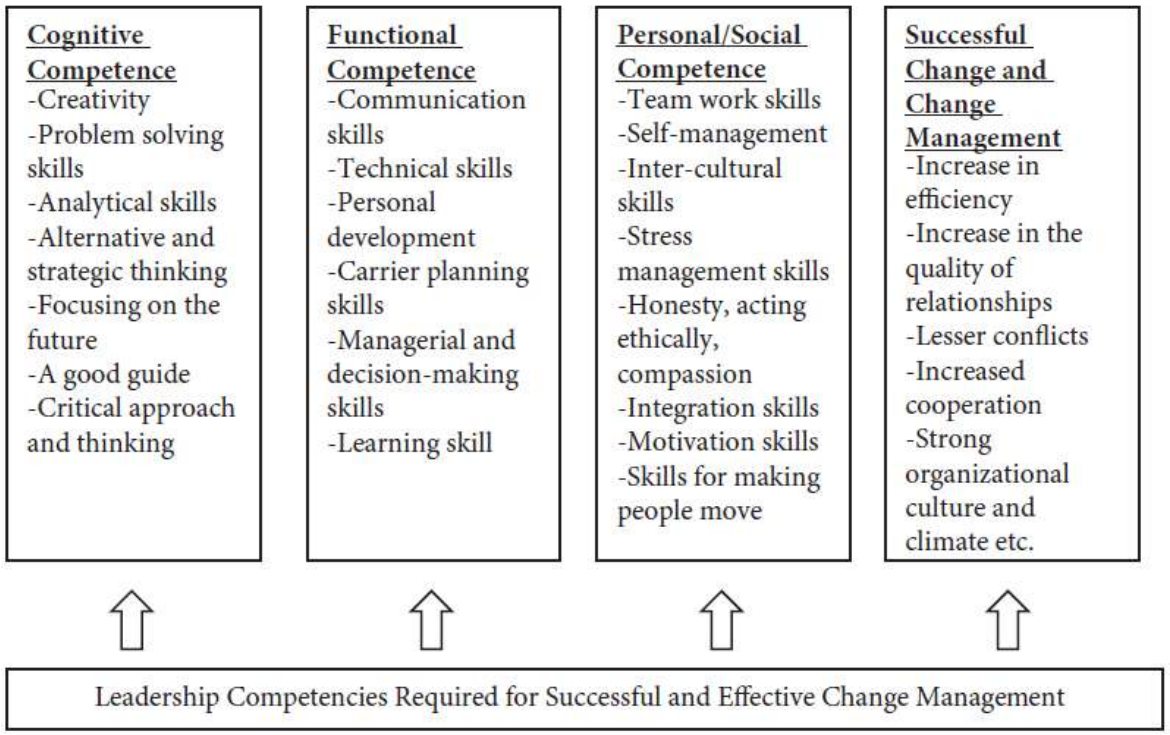
- **Make Decisions.** As managers, leaders usually control resources such as people, budgets, and equipment, and thus have the authority to make decisions that affect the initiative. During change, leaders must leverage their decision-making authority and choose the options that will support the initiative. Leaders are decisive and set priorities that support change.
- **Communicate.** Leaders are the face and the voice of change. They communicate often to share information, keep people updated and offer encouragement. When employees hear multiple messages in the organization, the one they listen to the most is their immediate leader. Leaders interpret the change message to be relevant for their reports, while still matching the overall message. So, it is always critical for leaders to be strong communicators, but especially when the organization changes. During times of change employees are faced with uncertainty, and, in the absence of official information, will fill in the blanks themselves. Leaders that keep employees informed and allow employees an open environment in which to express questions and concerns, will be most effective in managing during times of change.
- **Engage.** Leaders provide the motivation to change and get the members of the organization involved. They have the role to create a sense of urgency and importance about the change and show commitment about getting things done. Leaders realize that change can be difficult and understand the need for people to be motivated. So, the change leader should be energetic and empathetic.
- **Hold Accountable.** Leaders hold people in the organization accountable for the change. They uphold agreements and make sure others do the same. They don't let people get away with not changing, and work to understand the underlying reasons so they can remove obstacles.

3. Competencies of leaders and a model of leadership for changing times

Leaders play an important role in the institutionalization of organizations, creating an environment where change can take place or affecting the perceptions and attitudes of members of the organization (Hirlak and Kara, 2018, p.13)**.**

According to Pagon et al. (2008, p.4), competencies that leaders should have for a successful and effective change management are presented in Figure no. 1.

Figure no. 1. Leaders' competencies for change managment



Source: Pagon, M., Banutai, E. and Bizjak, U., 2008. *Leadership Competencies for Successful Change Management, A Preliminary Study Report*. University of Maribor, Slovenia, p.4.

The 4D model of leadership for organizational change

- **DISCOVER.** The process of organizational change begins with understanding. The leaders should find the best answers for the following questions: What is the need for change? What is the scope? What is the urgency? What communities, stakeholder groups and change agents need to be taken into consideration? What is the level of commitment?
- **DECIDE.** The vision is formed, the change terrain is mapped, and plans are created. The core team and early adopters begin to engage employees in decisions about the change. At this stage, deciding about how to frame the change initiative, build relationships, motivate others, and create alignment and commitment are key leadership functions.
- **DO.** Communicating and taking steps to enact the change begins. The rollout may be slow, or fast-paced, but leaders should recognize that no matter how quickly they choose to move, people still need time to adapt to change. Change leaders must show commitment to the change initiative and, above all, to the people who are affected by the change. Cracking the code of change is an emotional undertaking, which requires relationship-building across an interrelated web of change agents.
- **DISCERN.** We consider very important for a successful organizational change that the leaders have to discern what is working and what isn't in order to maintain focus, energy, resources, and support to ensure change sustains over time. Learning, what has and has not been effective in the change process and adapting future plans to ensure progress are critical to success.

Leaders in all industries are recognizing the challenge of leading in complex times. It is necessary a rethinking of leadership models in the context of today's rapidly changing and uncertain environment.

Tabel no. 1. Mindset Shift for Leading in A Complex Environment

Move From	Move Towards
Top down control	Building connections and local level actions
Building consensus only	Inviting and clarifying differences
Moving towards an ideal set out in the strategic plan	Moving constantly towards a better fit with the environment
Linear, cause- and- effect thinking	Noticing patterns and leveraging self-organizing potential
Centralized leadership	Unleashing the collective intelligence of the whole organization
Solving problems	Holding the container for paradoxes and tension in the system
Protecting the boundaries of the organization	Co-creating with wide ranging stakeholders/customers
One-way influence	Multi- directional influence

Source: Osborne, D. and Hinson, J., 2011. Leading in complex times. *Practising social change*, Issue Four, November, p.27.

4. Ways leaders should approach the implementation of change

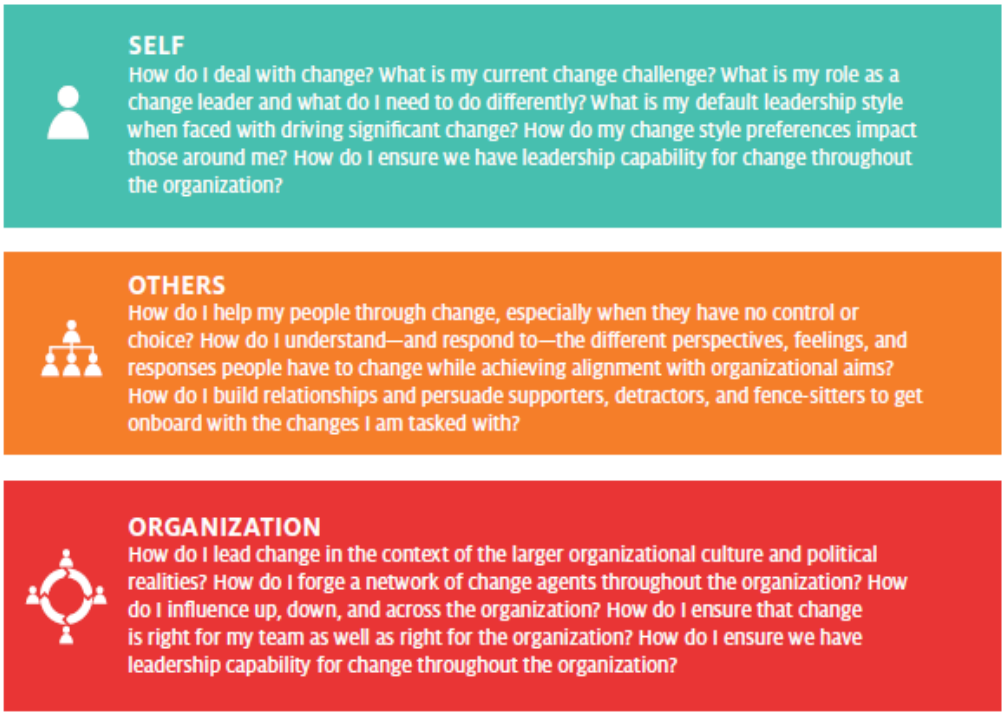
1. ***Adapt the approach to fit the challenge***. One - size - fits - all doesn't work anymore. Diagnose the organizational challenge and tailor the approach to change and implementation so that it precisely fits the scope of the organizational challenge.

2. ***Approach every strategic initiative as an opportunity to enhance adaptive skills***. Change and implementation efforts typically require a meaningful investment of organizational time and energy. Leader should seek to enhance the adaptive capabilities of the organization whenever a major change initiative is undertaken.

3. ***Shift leadership behaviours today to prepare for greater future complexity***. In such a complex world, one business leader cannot have all the answers. Develop a wider range of leadership approaches to engage people both inside and outside your organization. As uncertainties get larger and the stakes get higher, tap into the intelligence and energy of all your people, not just a critical few.

Mid- and senior-level managers both create change and respond to change directives coming from above. To effectively lead these efforts, managers need to navigate change at three levels—Self, Others, and Organization (Figure no. 2).

Figure no. 2. Levels of leaders driving change



Source: Dinwoodie, D., Pasmore, W., Quinn, L. and Rabin, R., 2015. *Navigating Change: A Leader's Role.* Center for Creative Leadership. [pdf] Available at: <https://www.ccl.org/wp-content/uploads/2016/09/navigating-change-a-leaders-role-center-for-creative-leadership.pdf> [Accessed 4 October 2019].

Navigating change is an organizational, team but also an individual process. Top leaders and executive managers will have better results from strategic and operational change when they:

• recognize the imperative to both *lead change* and *manage change*.

• communicate to mid- and senior level managers that part of their job is to guide other people through the emotional upheaval that comes with change.

• invest in key managers to develop the mindsets, skillsets, and toolsets to be effective leaders of change.

• reframe the change message and pitch it in a way that engages team members, direct reports, senior leaders, and system-wide change agents.

• listen to the concerns of those close to the front lines as their insights and experience

With effective change leadership, organizations will overcome the pitfalls of failed change efforts and drive towards a stronger, more effective, and more prosperous future.

According to Hao and Yazdanifard (2015), leadership skills also enable the leaders to lead their employees into the correct direction, in accordance to the organization vision and mission. When an organization's leader leads the employees in the correct direction and motivates them to continuously improve and innovate, the organization's performance will surely increase and be able to sustain the organization in the current complex business environment.

Conclusions

Research on the role of leaders in organizational change shows that leaders who attach importance to employee participation in organizational decisions, who are charismatic, have a democratic approach and keep communication channels open, are more successful in implementing change management.

The leaders of change have a critical role to play in ensuring that the change process is successful. Change leaders at all levels of the organization respond to changes in the business environment by seizing opportunities, giving up old models and instruments and developing different ways of doing business through a new vision. They try to change the contagious thinking, integrating it into everything they do from the most fundamental daily interactions to the most complex strategy (Harvey-Onderick, 2018, p.2).

Business leaders who can respond effectively to business changes, which come from both internal and external sources, have adaptive leadership styles. They are willing to try new things and are open to the potential for risk.

A successful change leader have to know how to involve all the members of the organization and to find the best way to lead a team that feels valued and included in the corporate transition.

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EVOLUTION OF DIRECT TAXATION IN ROMANIA. TAX REGULATIONS AND COSTS

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Abstract: *In this paper we present the main tax measures regarding the profit tax and the income tax that were implemented during the period 2005-2017 and we try to identify the share of direct taxes (income and profit taxes) in the total costs for the population and for the companies, as well as the amount allocated by National Agency for Fiscal Administration (NAFA) to administer these direct taxes. In order to achieve these objectives, we use a descriptive methodology, as well as an analysis based on the balance sheet, the documents needed being the Consolidated General Budget of the Ministry of Finance, the NAFA Expenditure Balance, Financial State (Centre for Financial and Monetary Research "Victor Slavescu", 2017, "Financial Indicators of the population"), as well as tax legislation in Romania.*

Keywords: *direct taxes, direct tax regulations, direct tax costs for companies and population, administration costs.*

Jel Classification: *H 25, H 31, H32.*

1. Introduction

In Romania, until 2004, a progressive system with differentiated rates for individuals' income, namely from 18% to 40%, was applied, and from 2005 a single rate of 16% has been implemented. Regarding the profit tax, its rate has changed, so in 2000 this quota was 25%, and since 2005 it has moved to the flat rate of 16%. Also, other important moments were 2009, when the economic crisis started in Romania and the observed effects were reduction of both consumption and VAT collection, introduction of the minimum tax, increasing the VAT rate from 19% to 24% by mid-2010, and the year 2015, when it has been rewritten the Law no. 227/2015 regarding the Tax Code.

The structure of the paper is the following: we briefly present, in the first part, the main tax measures regarding the profit and income taxes implemented in the period 2005-2017 and we will determine the costs / expenses with these fiscal measures, namely, their share in the total cost of population, companies and NAFA.

2. Main tax regulations in the period 2005- 2017

Since 2005, Romania has introduced a flat tax of 16% on personal income and companies profit, the expected effects being: business expansion, increasing direct investment, reducing the share of shadow economy, sustainable economic growth, more jobs, savings and investment growth.

As stated above, progressive taxation of individuals' income (between 18% and 40%) was replaced by a single 16% rate, combined with a degressive personal deduction, which led to a slightly progressive taxation. The profit tax was also reduced, from 25% to 16%. Dividends were taxed in 2005 at 10%, lower than income tax rates, and from 2006 the quota has been of 16%.

In addition, if we look at the data below, we notice that the share of tax revenues related to corporate income tax in 2006, 2007 and 2008 remained relatively constant, between 2,5-2,6% of GDP. The same can be said about the revenues from personal income tax (2,7 – 2,9% of GDP).

Table no.1. Evolution of tax revenues (% og GDP)

	2004	2005	2006	2007	2008
Total revenues	31,1	33,5	32,9	32,2	31,9
Tax revenues	28,4	28,5	28,4	28,3	28,1
Taxes on profit, income, capital gains	16,0	15,5	15,2	15,2	14,8
Profit tax (CIT- corporate income tax)	2,8	2,5	2,4	2,5	2,6
Income tax (PIT- personal income tax)	3,0	2,6	2,7	2,8	2,9

Source: Văcărel, I., 2007. Trends in the evolution of tax systems of OECD and EU member countries and Romania.

For 2006, no essential changes to the tax system are foreseen, maintaining the principle of the single tax rate. However, in order to secure the necessary sums from the perspective of joining the European Union, certain measures will be taken to increase the budget revenues.

In 2009 (May), the minimum tax was introduced (companies will still pay a 16% tax, but not less than the minimum threshold). The minimum tax rate is estimated to have resulted in the closure of over 100.000 small businesses (implicit cost). The measure entered into force on 1 May, which led to two fiscal years. The measure was abolished starting with 1 October 2010 by Emergency Ordinance, but at the same time it also created two tax years.

The tax rate on micro enterprises' income is 3% in 2009 compared to 2,5% in 2008. If the tax due by micro-enterprises is lower than the annual minimum tax, they are obliged to pay the tax at this level.

Dividend tax remains constant during the period analysed (10% -16%), with the exception of reinvested dividends, from 2009, with the view to preserving and increasing new jobs for the development of the Romanian legal persons distributing dividends, which are exempt from paying it.

According to the authorities, it appears that 119 charges and tariffs have been reduced, canceled or merged, thus their number reaching approximately 300.

New taxes are being introduced in 2010, as well as the fact that from 1 October 2010, the minimum tax is abolished. The latter measure had a positive impact on the companies, by reducing the tax burden, but a negative impact on the state budget revenues, generating a minus of 1000 million lei (according to the Emergency Ordinance for amending and supplementing Law No. 571/2003 on the Code fiscal, Official Monitor No. 0669 of 30 September 2010)

For the next period, fiscal consolidation measures aim at a new approach, namely development, equity, discipline, namely the general reduction of taxation; widening the tax base; simplifying the tax system; increasing revenue collection; reducing tax evasion.

Therefore, starting with February 1, 2013, it is applied the system of compulsory payment of the tax on micro enterprises' income for Romanian legal entities, which on December 31 of the previous fiscal year had a turnover of less than 65,000 euro; the requirement to have between 1 and 9 employees is eliminated; companies so listed can no longer choose between corporation tax or income tax, and are required to pay a 3% tax on revenues from 1 February 2013.

Microenterprises that exceed a 65,000 euro income ceiling in one year will pay tax on profits at the beginning of that year - the income tax paid being regularized with the corporation tax due.

For the budget, the government estimates the measure will triple the revenues from 207 to 678 million.

We should also mention the introduction of the "construction tax" as a special measure of extending the tax base on buildings, other than those for which building tax is due, of 1,5% of the accounting value; the budget impact was 488 million lei (according to the Macroeconomic Situation Report for 2014 and its projection for the years 2015-2017, the Ministry of Public Finance).

According to Emergency Ordinance no. 8 / 23.01.2013, income tax on agricultural, forestry and piscicultural income is introduced according to pre-established income rules. The 2% retention of the value of the products handed over to collection centers is eliminated.

During 2015 is written the Tax Code, namely Law no. 227/2015 regarding the Fiscal Code, aiming to continue the measures for increasing the efficiency of the tax system.

The main measures were:

a) Profit tax:

● elimination of the holding conditions considering as non- taxable income from dividends;

● changing the general principle of deduction of costs, including those incurred by the employer - employee relationship;

● Increase of the minimum turnover limit from 0,3% to 0,5% for the deduction from the corporate tax of ammounts representing sponsorship / mecenate / private scholarships;

● Extending the application of the exemption for reinvested profits in the production / acquisition of electronic computers and peripheral equipment, cash registers, cash for control and billing, as well as in computer programs;

● increasing the social deductibility ceiling from 2% to 5% of the value of staff salaries;

● Introducing specific tax rules for legal entities that are dissolved with liquidation, in order to define an extended fiscal year, correlated with the period of application of the winding-up procedure and clarifying the issues related to the declaration and payment of corporate income tax in the extended fiscal year.

b) Tax on dividends paid to Romanian legal persons

● Reduction of dividend tax rate from 16% to 5% for dividends paid to Romanian legal entities.

c) Income tax for micro-enterprises:

● Increasing the ceiling for enforcing this tax system from 65.000 euro to 100.000 euro, as well as introducing a differentiated system of tax rates between 1% and 3%.

Tax rates on micro-enterprise income are: 1% for micro-enterprises with more than 2 employees; 2% for micro-enterprises with one employee; 3% for micro-enterprises with no employees.

● Introducing a support measure for newly created micro-enterprises by applying a 1% tax rate in the first two years of existence of the legal entity, conditioned to hire one employee.

Tax measures for introducing a differentiated tax rate system for micro-enterprises between 1% and 3% of total revenues, based on the number of employees, compared to 3% previously, increasing the income ceiling to which a firm is considered a micro enterprise from the equivalent in lei of 65.000 euros to 100.000 euros, resulted in an estimated budgetary impact of Ministry of Finance of about -300 million Lei. Also, the exemption of reinvested profits and the revision of dividend income received from Romanian legal entities by non-taxation of dividends received from a Romanian legal entity had a budgetary impact of - 56 million lei, namely -57 million lei.

It was estimated that micro-enterpirses, almost entirely with domestic capital, will be more committed to fairness in business and reducing the hidden economy. It was also estimated that around 80.000 micro-enterprises, which in 2013 not recorded any turnover or number of employees, will remain inactive. These measures aimed to increase the number of jobs by about 101 thousand, increase of profit / loss reduction for micro-enterprises with more than 2 employees, increase of revenues from income tax and social contributions if some of these micro-enterprises will change their entrepreneurial approach and hire one or two employees to benefit from the 1% tax.

d) Construction tax: in 2016 the agricultural constructions are excluded from the tax base for determining the tax on construction. In 2017 it will be eliminated.

e) Income tax - regulations on income from self-employment, income from wages and salaries, income from the use of goods, investment income, pensions, etc.

The year 2017 was characterized by low revenues to the state budget due to:

- Emergency Ordinance in January 6, 2017, regarding the change of the micro-enterprise regime (increase of the threshold up to which a company is considered a micro enterprise from 100,000 euros in 2016 to 500,000 euros as of 1 January 2017), a group of companies to which the tax rate on profit ratio is significantly lower than other types of firms,

- wage increases in the whole economy with potential negative effect on companies' profits and, implicitly, lower corporate income tax than in 2016;

- the introduction, from 1 January 2017, of the specific tax for businesses in the tourism and food sectors that basically replaced the corporate tax (but with a reduced tax rate!).

- income from dividend tax declined, compared to the previous year - the reduction in dividend tax rate at that time changed the behavior of companies in the sense that they have paid dividends well above the usual levels. Although the immediate consequence was the improvement of the budgetary impact of the tax rate reduction, it has been appreciated that large dividend distributions were temporary, the loss of income being felt in the coming years.

In the year 2017 other tax measures were adopted, but generated negative impact on revenues collected from income tax:

- tax exemption for pensions of less than 2.000 lei,

- the revenues from the income tax on the transfer of the real estate assets in the personal patrimony decreased by almost 400 million lei, in the context of the introduction of a non-taxable ceiling of 450.000 lei for the revenues obtained as a result of the transfer of the ownership right.

Also, in order to identify the potential effect of the tax changes in 2017 on microenterprises, Iancu Guda (Coface) realised an impact study, and the conclusion was that the ordinance will generate, during this period, a reduction of taxes paid by micro-enterprises with income below 500.000 euro of about 955 million lei, but the entire fiscal saving should be directed to cover additional salary costs, the latter increasing by 936 million lei, due to the increase of the gross minimum wage by 16%, from 1.250 lei to 1.450 lei, starting with February 2018.

3. Costs determined by the tax regulations

Tax costs are an important element of the cost of any business; it does not only mean tax rates, but also the payment terms and the recovery time of tax receivables or losses. The tax costs of a taxpayer are influenced by a multitude of factors, some of which are directly controlled by the taxpayer. The way each taxpayer chooses or uses each of these factors in his activity will also determine the level of his tax costs.

Tax measures have a stronger impact on small firms, as they are unable to cope with the growing costs of adapting to permanent changes (Chittende, F., Foster, H., Sloan, B). There are also some factors that influence the costs of taxation, such as: the number of tax payers, the structure of the tax system, tax evasion, technological progress that helps businesses to comply with the law. The issue of hidden costs of taxation has become more important as countries have introduced new taxes to ensure a fair and equitable tax system to increase the amount of revenue collected to the budget.

With regard to the business environment, economic agents face increasing costs to cope with frequent changes in legislation. Although the Tax Code provides principles of taxation (principles according to which taxation must be clear, legal regulations should be clear and the provisions of the Tax Code must have long-term stability in order not to affect the activity of individuals and legal entities and to ensure efficiency), these principles are not respected in practice. Thus, firms must provide their employers the necessary training to properly enforce the law – fact which generates an extra and perhaps unforeseen cost for the company. The more legislation is harder to understand, the more companies need to allocate resources for understanding legislation, enforcing it and ensuring compliance.

Other hidden costs might be: cost of hours when the employe/ employee fills documents (at first glance this is a normal cost of business, but when changes occur, attention and time to fill the documents in order to conform increase), the cost of consultants' services.

When proposing new tax reforms, not only the budgetary impact, but also the costs of new taxes should be considered. Romania, in present, has a single tax system, both in terms of personal income tax and that of companies (among the new EU Member States, only Poland and Slovakia do not have a single tax rate. One of the main advantages of a single tax rate is its simplicity, which increases compliance and reduces the administrative burden for both taxpayers and tax authorities, which ultimately means lower tax collection costs.

Thus, given the absence of different tax deductions and tax credits, a single tax system is expected to come at lower collection costs than a progressive taxation system. Consequently, when the authorities want to give up the single tax, they have to look not only at the revenue side of the budget, but also at the part of the expenses, meaning the costs of collecting taxes.

In this paper we try to identify the share of direct taxes (profit and income taxes) in total costs, for population and firms.

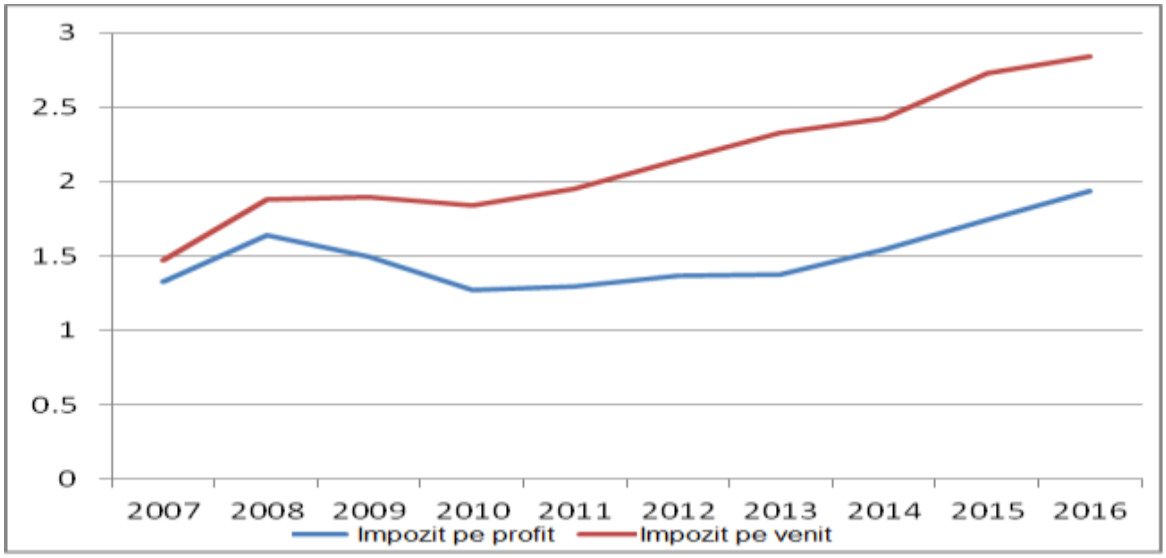
The methodology is as follows: information on expenses/ costs with profit tax and income tax is related to tax revenue from profit tax and income tax, which are found in the Consolidated General Budget of the Ministry of Finance. The total expenditures of the population are collected from the Financial Statement 2017, from the „Financial Indicators of the Population" and the total expenses of the companies are taken from the Balance Sheets - the annual financial statements of the active trading companies in the real economy of Romania. We also want to see what amount is allocated by NAFA (National Agency for Fiscal Administration) for managing direct taxes (profit and income tax). We use in this context the amount of direct taxes (iprofit tax and income tax) reported to the total expenditure of NAFA (taken from the NAFA Expenditure Balance) for the years 2013-2016.

Table no.2. Total direct taxes (profit tax and income tax) in the period 2006-2016-million lei

Tax	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Profit tax	7939	10558	13046	11893	10115	10309	10855	10926	12238	13825	15394
Income tax	9764	14375	18366	18551	17957	19076	20957	22736	23692	26640	27756
∑ taxes	17703	24933	31412	30444	28072	29385	31812	33662	35930	40465	43150

Source: Ministry of Finance, General consolidated Budget 2007-2017.

Figure no.1. Evolution of profit and income taxes in the period 2007- 2016



Source: Ministry of Finance, General consolidated Budget 2007-2017

Both taxes have a peak in 2008, then a sharp drop (during 2009- 2010), followed by a slight increase of income tax (2011-2013). In 2010, the income tax records a minimum, then it has a growing trend.

A. For the population

We note: CHB = Total Population Costs

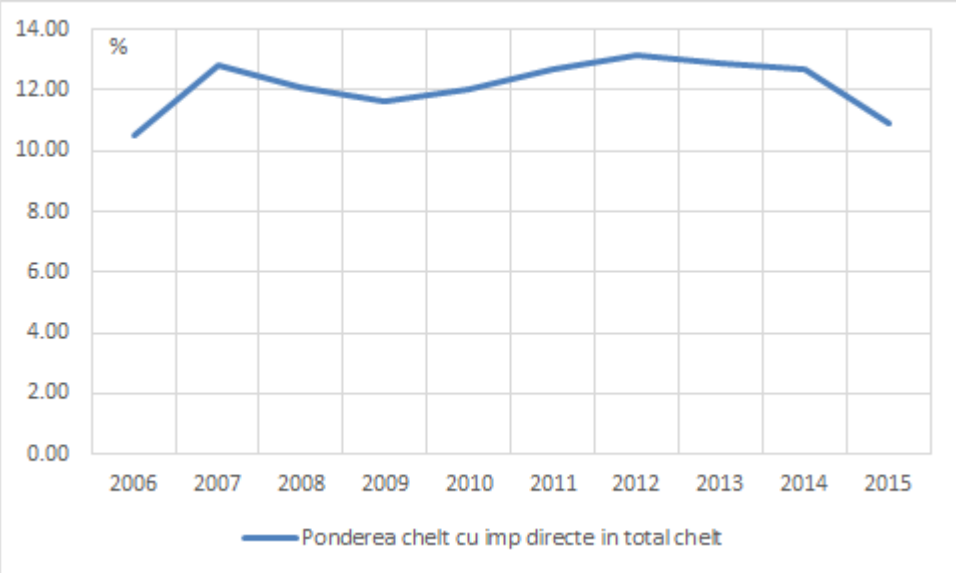
IV = income tax; value taken from the Consolidated General Budget and represents the tax income from income tax

Table no.3. The share of direct taxes costs in total costs for population

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
CHB	98100	136480	143443	153427	154003	158928	165379	173291	183398	209825	254450
IV	9764	14375	18366	18551	17957	19076	20957	22736	23692	26640	27756
%	9,95	10,53	12,80	12,09	11,66	12,00	12,67	13,12	12,92	12,70	10,91

Source: Table 2, Financial Statement 2017, Consolidated General Budget 2007-2017.

Figure no.2. The share of direct taxes costs in total costs for population



Source: Financial Statement 2017, CCFM, 2017, Consolidated General Budget 2007-2017.

While total population costs increase each year, the share of direct tax costs tends to fall. After a peak in 2013 (13,12%), in the following years the trend is declining, reaching the 2007 level, before the financial crisis. We note that in 2016, the costs were 2,59 times higher than in 2006 (between 2016 and 2006).

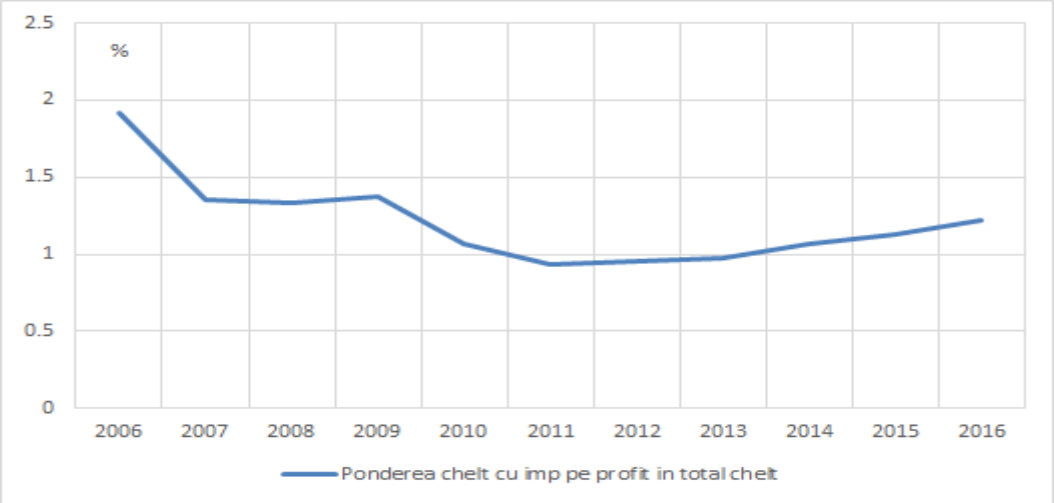
B. For firms

Table no.4. Share of profit tax costs in total company costs

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Total profit tax (mld.lei)	7939	10558	13046	11893	10115	10309	10855	10926	12238	13825	15394
Total costs (mld.lei)	414276	777946	979544	864712	946090	1110211	1139672	1120975	1145710	1221633	1260804
%	1,92	1,36	1,33	1,38	1,07	0,93	0,95	0,97	1,07	1,13	1,22

Source: Table no. 2, Consolidated general budget 2007-2017, the annual financial statements of the active trading companies in the real economy of Romania**.**

Figure no. 3. Share of profit tax costs in total company costs



Source: Consolidated general budget 2007-2017, the annual financial statements of the active trading companies in the real economy of Romania**.**

The profit tax depends on the taxable amount and the tax rate. During the crisis, the share of corporate (profit) tax costs in total costs decreased (reached a minimum in 2011). In the following years, we observe a slight growth, approaching the level of the 2007-2009 period.

***C.* NAFA costs with administration**

The role of NAFA is tax administration. Therefore, we want to find out which amount of the tax revenues from the profit tax and the income tax it collected at 1 leu "invested" by the state, namely, the share of the costs with the administration of the taxes on profit and income in the NAFA total costs.

Table no.5. The efficiency of NAFA activity
(Evolution of Tax Administration Costs and Income collected by NAFA)

	2013	**2014**	**2015**	**2016**
Total amount of revenue collected from direct taxes (mil.lei)	33662000	35930000	40465000	43150000
Annual costs NAFA (mil.lei)	239035	503854	441159	552484
Efficiecy (%) (rd.1/rd.2)	140,82	71,31	91,72	78,10

Source: Table no. 2, NAFA 2013-2016 balance sheets.

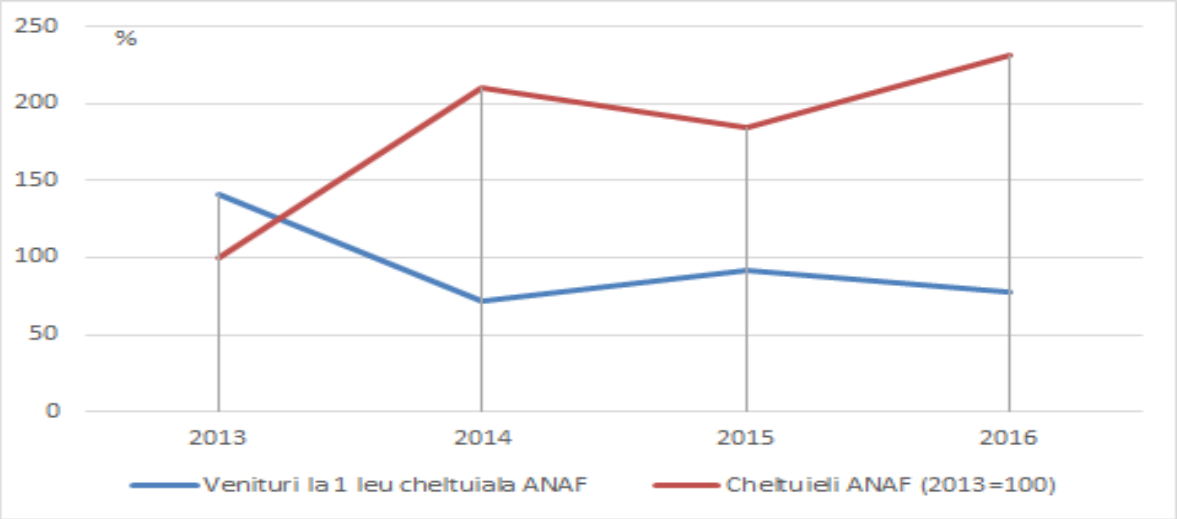
In dynamics, while efficiency is being reduced in the three years by about 62pp, the costs are 2,31 times higher.

Table no. 6. NAFA costs vs. NAFA Activity Efficiency

	2013	2014		2015	2016
Efficiency (%)	140,82	71,31		91,72	78,10
Evolution of costs (2013=100%)	100,00	210,79		184,56	231,13

Suggestively, the data is shown in the following figure:

Figure nr. 4. Evolution of Tax Administration Costs and Income collected by NAFA



Source: graph made on the basis of table no.

4. Conclusions

This paper presents the main tax measures for profit tax and income tax that were implemented during the period 2005-2017, namely the flat tax measure and other important tax changes implemented in 2009-2017. We also try to identify the share of costs with direct taxes (profit and income tax) on total costs for the population and companies, as well as the amount allocated by NAFA for the administration of these direct taxes.

About the costs of these tax changes, we refer to the implicit and explicit ones. The explicit ones refer to the actual figure found in the state budget (a plus / minus in the tax revenues related to these taxes) and the implicit ones are considered to be, for firms, for exemple, the effects of the breakdowns (bankruptcy, insolvency) or the number of newly created firms / number of records. For the population, the cost is reflected in the increase / decrease of inequality or the degree of poverty.

Exemplifying, the implicit costs are the 100.000 firms closed following the introduction of the minimum tax in 2009, or the increase in disruptions following the introduction in 2015 of differentiated rates on the taxation of microenterprises. As for the explicit costs, the same measures in 2015 on the introduction of the differentiated tax system for micro-enterprises, the increase in the income ceiling led to an estimated cost of Ministry of Finance at about -300 million Lei; or, exemption of the reinvested profit: the cost was - 56 mil lei; the elimination of the minimum tax, in 2010, led to a cost of - 1000 million lei.

We believe that multiple tax changes have primarily caused costs for all economic actors (state, firms, population), but have brought instability and fiscal uncertainty (factors that have contributed to the development of the underground economy), increased bureaucracy and also growth of non-compliance.

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PUBLIC DEBT ANALYSIS IN THE EUROPEAN UNION

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Abstract: *The global financial crisis of 2007-2008 has led to a rapid build-up of public debt in some euro area countries, highlighting the vulnerabilities of indebted economies - this accumulation being perceived as a problem for the European Union as a whole. In an environment of financial instability, the rapid rise in public debt and low economic growth have determined the increase of the concerns about the need for debt sustainability assessment in many EU countries since the crisis. There has been a significant increase in government debt rates in the EU Member States, reaching in 2017 over 87% of GDP. In Romania, the public debt trend, over the period 2006-2017, the period under review, has been steadily rising, reaching in 2017 EUR 66647.10 million, compared to EUR 12585.6 million in 2007, indicating financing needs with an ascending trajectory and inevitably leading to increased interest rates. Reducing public debt is essential for restoring market confidence and generating room for maneuver for the state so that in the event of a future crisis, macroeconomic stabilization measures can be promoted.*

Keywords: *Sustainability, public debt, analysis, indicators, indebtedness.*
JEL Classification: *H63.*

1. Introduction

The 2007-2008 global financial crisis has led to a rapid build-up of public debt in some Eurozone countries, and despite the fact that debt has only increased in a few countries, it is beginning to be perceived as a problem for the European Union as a whole. In a financially unstable environment, the rapid rise in public debt and low economic growth have prompted intensified concerns about the need for debt sustainability assessment in many European Union countries, especially in the Eurozone, starting in the years following the crisis. The financial and economic crisis has fully highlighted the vulnerabilities of indebted economies. Both the difficulties in the financial system and the rise in real interest rates as well as economic recession are conditions that make the level of public debt extremely difficult to control.

2. Public debt in the Member States of the European Union

As a result of this financial and economic crisis, there is a strong increase in the level of public debt in the countries of the European Union, with the Eurozone being hit hardest by the impact of the global crisis. The years that followed the crisis required huge budget allocations that caused a serious deterioration in public finances, especially in the periphery of the euro area. Public debt in the Eurozone reached an average of 68,5% of GDP in 2007.

When the crisis began to impact the euro area, its Member States reacted with massive packages of incentives and injections of public money into their banking systems, with debt and deficits far exceeding the Maastricht benchmarks.

At Eurozone level, a public debt of 65% of GDP was released, and in 2014 we had the highest value in the area of 91,8% of GDP and by the end of 2017 the value was slightly improved, of 86,8% of GDP. Thus, public debt has far exceeded the reference value of the Treaty of the European Union of 60% of GDP in 2007 (Table no.1).

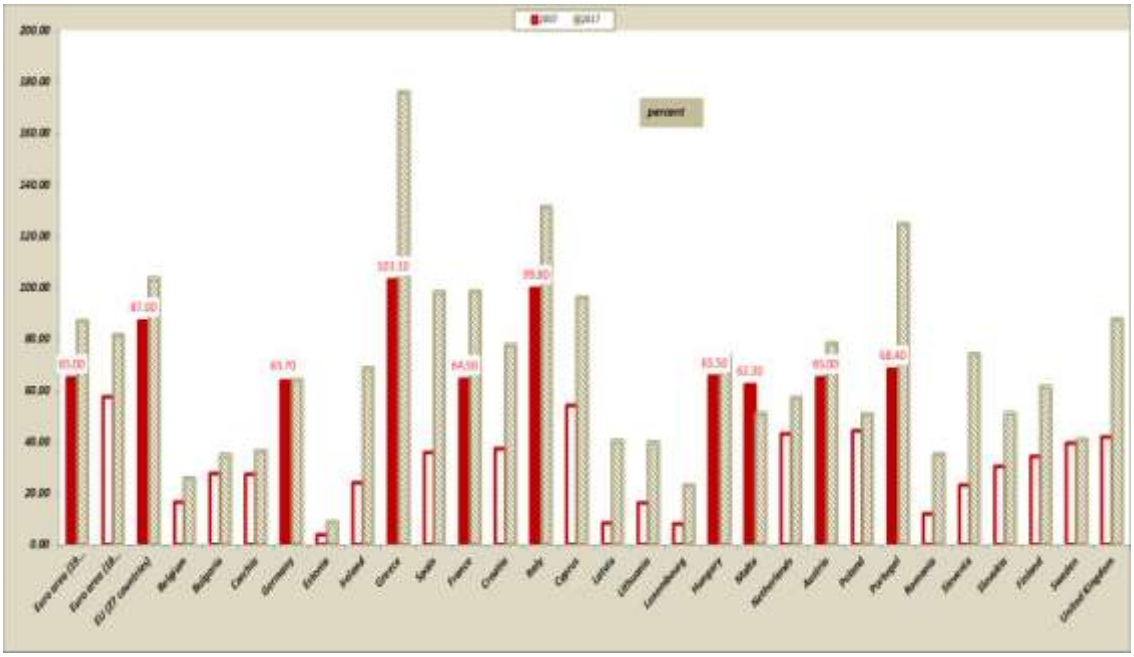
Table no.1. General gross debt is public in the EU Member States - Annual data – Percentage of gross domestic product (GDP)

Country \ Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Euro area (19 countries)	67.40	65.00	68.70	79.20	84.60	86.60	89.70	91.60	91.80	89.90	89.10	86.80
Euro area (18 countries)	67.50	65.20	68.90	79.40	84.70	86.80	89.80	91.70	92.00	90.00	89.20	87.00
EU (28 countries)	60.10	57.50	60.70	73.30	78.80	81.40	83.80	85.70	86.40	84.40	83.30	81.60
EU (27 countries)	60.20	57.60	60.80	73.40	78.90	81.50	83.80	85.70	86.40	84.40	83.30	81.70
Belgium	91.10	87.00	92.50	99.50	99.70	102.60	104.30	105.50	107.60	106.50	106.10	103.40
Bulgaria	21.00	16.30	13.00	13.70	15.30	15.20	16.70	17.10	27.10	26.20	29.60	25.60
Czechia	27.70	27.50	28.30	33.60	37.40	39.80	44.50	44.90	42.20	40.00	36.80	34.70
Denmark	31.50	27.30	33.30	40.20	42.60	46.10	44.90	44.00	44.30	39.90	37.90	36.10
Germany	66.50	63.70	65.20	72.60	81.00	78.60	79.90	77.40	74.50	70.80	67.90	63.90
Estonia	4.40	3.70	4.50	7.00	6.60	6.10	9.70	10.20	10.50	9.90	9.20	8.70
Ireland	23.60	23.90	42.40	61.50	86.00	110.90	119.90	119.70	104.10	76.80	73.40	68.40
Greece	103.60	103.10	109.40	126.70	146.20	172.10	159.60	177.40	178.90	175.90	178.50	176.10
Spain	38.90	35.60	39.50	52.80	60.10	69.50	85.70	95.50	100.40	99.30	99.00	98.10
France	64.60	64.50	68.80	83.00	85.30	87.80	90.60	93.40	94.90	95.60	98.20	98.50
Croatia	38.60	37.20	39.00	48.30	57.30	63.80	69.40	80.40	84.00	83.70	80.20	77.50
Italy	102.60	99.80	102.40	112.50	115.40	116.50	123.40	129.00	131.80	131.60	131.40	131.20
Cyprus	59.30	54.00	45.60	54.30	56.80	66.20	80.10	103.10	108.00	108.00	105.50	96.10
Latvia	9.60	8.00	18.20	35.80	46.80	42.70	41.20	39.00	40.90	36.80	40.30	40.00
Lithuania	17.20	15.90	14.60	28.00	36.20	37.20	39.80	38.80	40.50	42.60	39.90	39.40
Luxembourg	7.80	7.70	14.90	15.70	19.80	18.70	22.00	23.70	22.70	22.20	20.70	23.00
Hungary	64.50	65.50	71.60	77.80	80.20	80.50	78.40	77.10	76.60	76.60	75.90	73.30
Malta	64.50	62.30	62.60	67.60	67.50	70.10	67.70	68.40	63.70	58.60	56.30	50.90
Netherlands	45.20	43.00	54.70	56.80	59.30	61.70	66.20	67.70	67.90	64.60	61.90	57.00
Austria	67.30	65.00	68.70	79.90	82.70	82.40	81.90	81.30	84.00	84.80	83.00	78.30
Poland	46.90	44.20	46.30	49.40	53.10	54.10	53.70	55.70	50.40	51.30	54.20	50.60
Portugal	69.20	68.40	71.70	83.60	96.20	111.40	126.20	129.00	130.60	128.80	129.20	124.80
Romania	12.30	11.90	12.40	22.10	29.70	34.00	36.90	37.60	39.20	37.80	37.30	35.10
Slovenia	26.00	22.80	21.80	34.60	38.40	46.60	53.80	70.40	80.40	82.60	78.70	74.10
Slovakia	31.00	30.10	28.50	36.30	41.20	43.70	52.20	54.70	53.50	52.20	51.80	50.90
Finland	38.20	34.00	32.70	41.70	47.10	48.50	53.90	56.50	60.20	63.60	63.00	61.30
Sweden	43.90	39.20	37.70	41.30	38.60	37.80	38.10	40.70	45.50	44.20	42.40	40.80
United Kingdom	40.70	41.70	49.70	63.70	75.20	80.80	84.10	85.20	87.00	87.90	87.90	87.40

Source: Eurostat.

At EU level (EU 28), government debt rose from 57.5% of GDP in 2007 to 86.4% in 2014 (Eurostat 2018), followed by a slight recovery, reaching 2017 , 6% of GDP. Extending debt sustainability to meet payments, Greece, Ireland and Portugal have received emergency financial packages from both the IMF and the European Union.

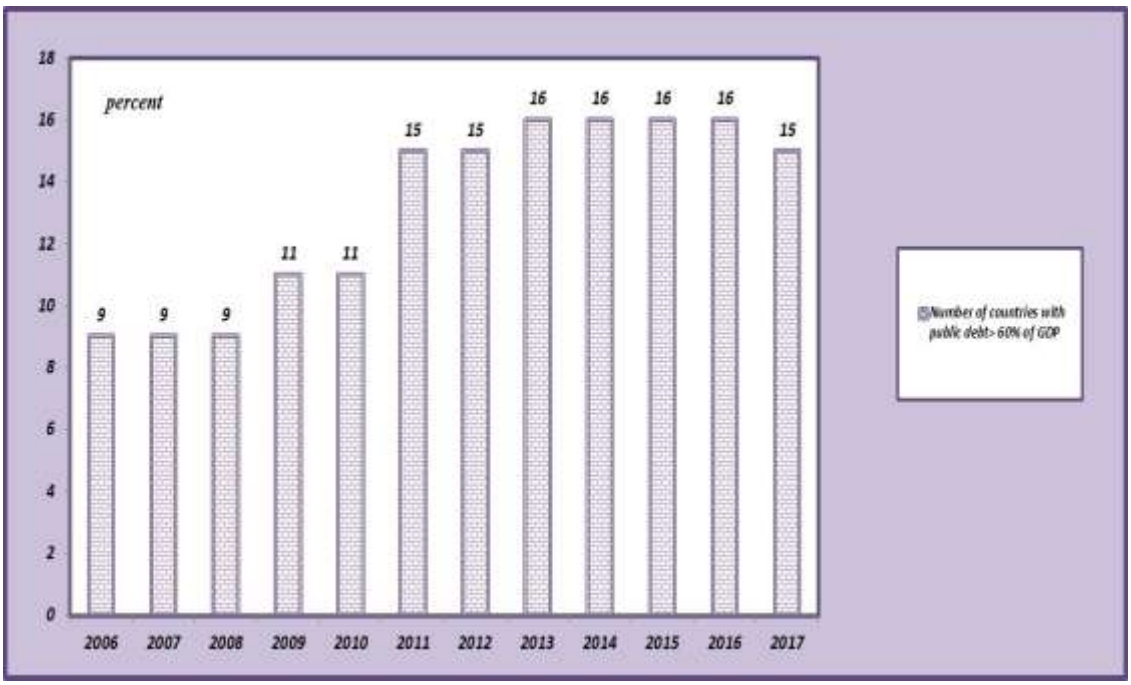
Generally, there has been a significant increase in public debt rates in the EU Member States, reaching 20% in 2017 at over 87% of GDP. At the start of the crisis, in 2007, there were nine EU Member States whose share of public debt in GDP exceeded 60%: Belgium, Germany, Greece, France, Italy, Hungary, Malta, Austria and Portugal (Figure no.1).



Source: Eurostat, authoring data processing

Figure no.1 Gross general government debt in EU member states in 2007 and 2017 - Percentage of gross domestic product (GDP)

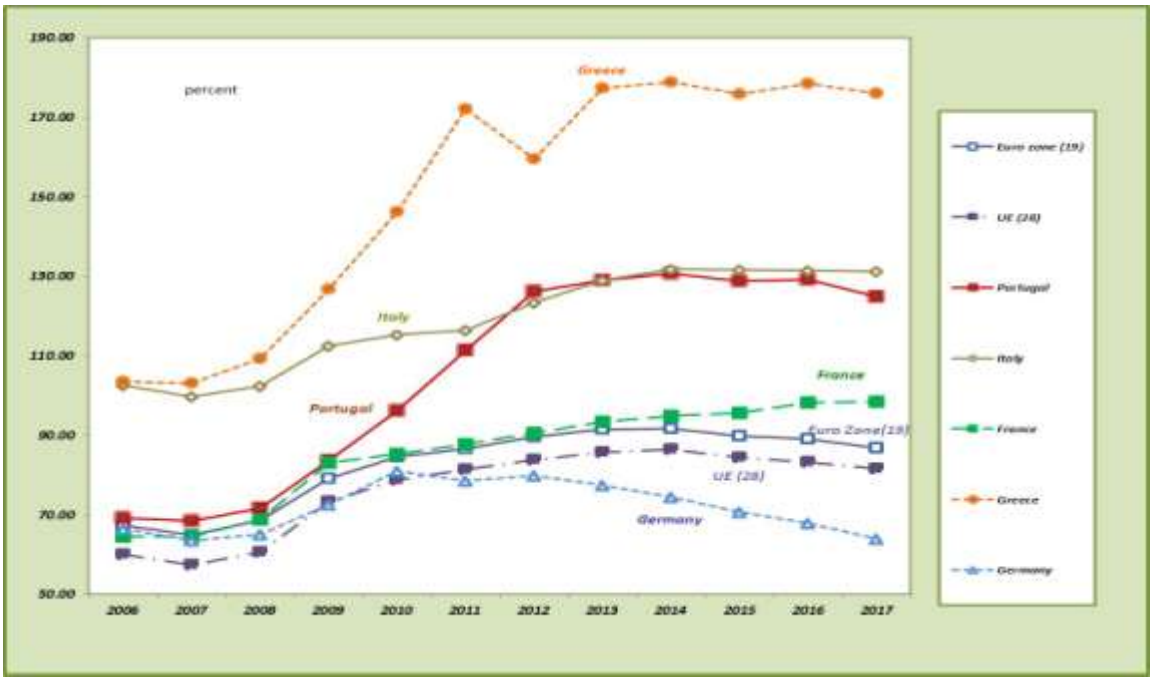
Over time, the number of these countries has increased (Figure no.2), reaching 16 in 2016, reaching unprecedented levels since World War II (Figure no.3).



Source: Eurostat, authoring data processing

Figure no.2 The number of European Union countries whose share of public debt in GDP was more than 60%

Such a value well above the 60% of GDP reference value of the Treaty of the European Union is that recorded by Greece, whose public debt-to-GDP ratio was over 170% of GDP during the 6th none of the 12 analyzed. Italy also has debt ratios of over 130% of GDP over 4 years (Figure no.3).

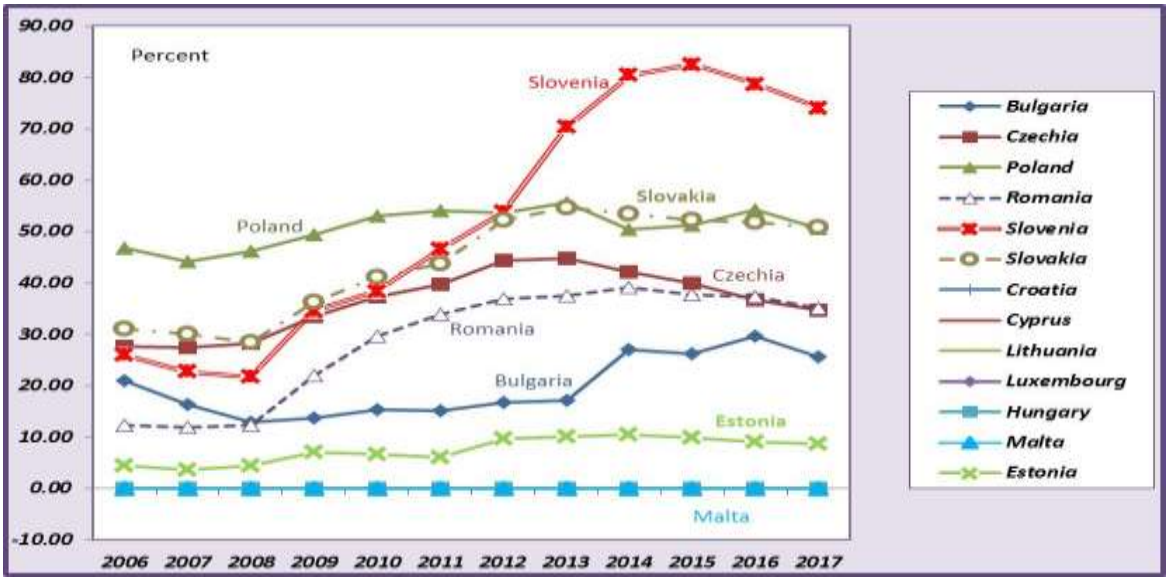


Source: Eurostat, authoring data processing

Figure no. 3. EU countries with the highest levels of government debt, share in GDP, 2006-2017

However, compared to the United States and Japan, budget imbalances were overall more limited in the euro area and fiscal consolidation was better prepared and more comprehensive.

Among the new Member States of the European Union, two states (Hungary and Malta) had, over the whole period considered, public debt values, percent of GDP, more than 60%; then Cyprus and Croatia have exceeded their value from 2011 and continued until 2017 inclusive, and from 2013 until the end of the analyzed period Slovenia. The other states, New Member States, were in the public debt percent in GDP lower than 60% (Figure no.4).



Source: Eurostat, authoring data processing

Figure no. 4. General Gross Debt in the New EU Member States, Percent of GDP

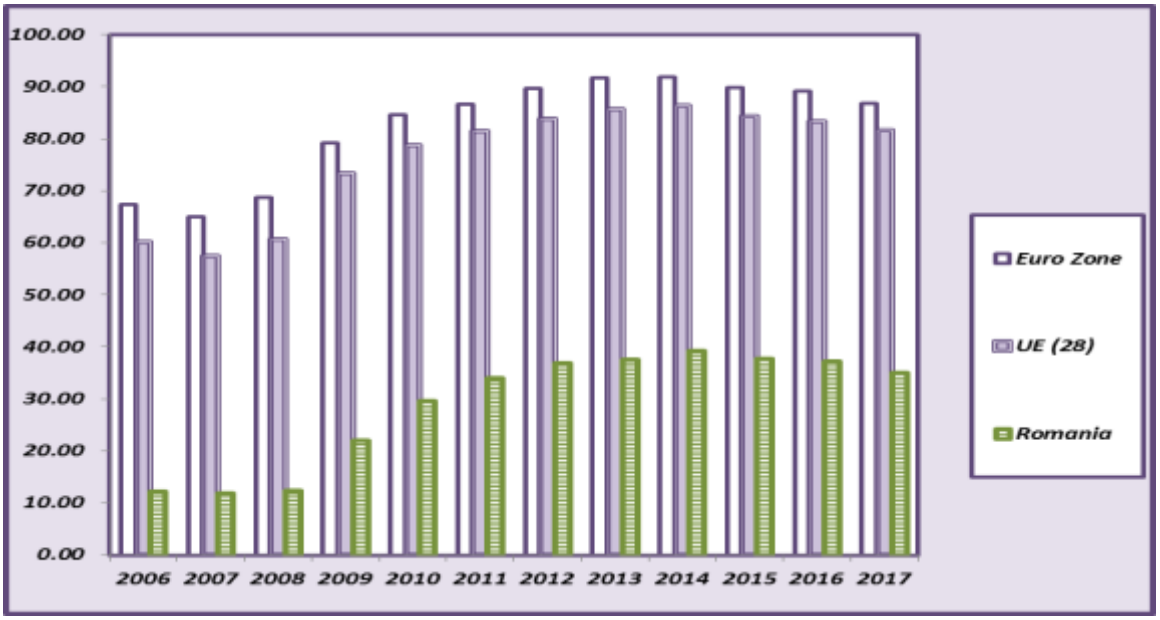
In response to this rapid rise in public debt and financial market pressure, in order to prevent future sovereign debt crises and stronger oversight across the European Union, most Member States underwent a considerable fiscal consolidation between 2011 and 2013. Also, through the reform of the Stability and Growth Pact, but also by introducing the Macroeconomic Imbalances Procedure in 2012, the European Union has significantly improved its macro-fiscal surveillance framework.

From a methodological point of view, the focus on debt sustainability analysis (DSA), in the context of the financial and economic crisis, has led to the improvement of DSA frameworks used by international organizations. Thus, both the European Commission in 2014-2016 and the IMF in 2013 have strengthened their DSA frameworks.

The challenges raised by the high level of debt in the public and private sector in a number of European Union countries after the peak of the crisis have prompted the European Commission and the IMF to place a particular emphasis on the importance of contingent commitments by governments, especially in the banking sector, on the structure of public debt financing, and on the design of enriched sensitivity scenarios, including the additional use of stochastic debt projections as a complementary tool to standard deterministic projections.

3. Public debt in Romania

In the period under review (2006-2017), Romania's government debt ratio (in GDP) was almost parallel to the trajectories of the Eurozone public debt and debt in the European Union from 2009 to 2017 (Figure no.5). In Romania, the increase in public debt (in GDP) started in the year following the global crisis, ie in 2009, in exchange for the Eurozone but also for the EU this growth trend started already in 2008. Until 2014, followed by a slight downward trend until the end of the analyzed period for all three situations.



Source: Eurostat, authoring data processing

Figure no. 5. Government Debt Developments (% of GDP) in Romania, in the Eurozone and in the European Union in the period 2006-2017

Concerning the public debt - EUR millions, (Table no. 2), the trend for the period 2006-2017 in Romania was steadily increasing, reaching 2017 at EUR 66,647.10 million compared to the level recorded in 2007 by 12585,6 EUR millions, reflecting financing needs with an ascending trajectory and inevitably leading to increased interest rates.

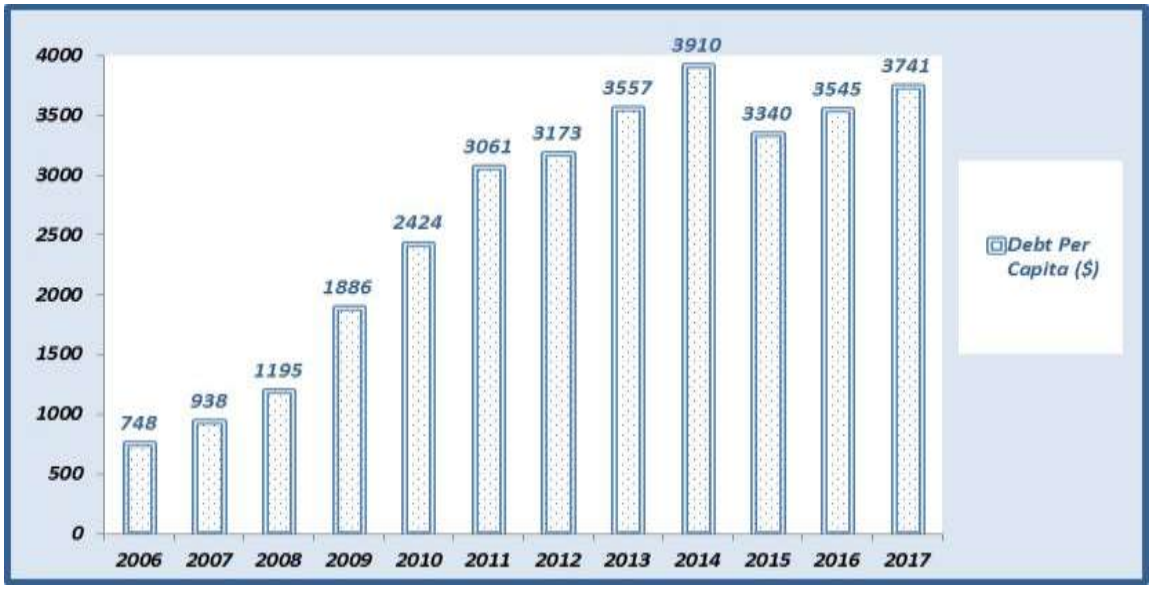
Table no. 2. General gross debt is public in the member countries of the European Union,(million euro) 2006-2017

Country \ Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Euro area (19 cou	67,4	65,00	68,7	79,2	84,6	86,6	89,7	91,6	91,8	89,9	89,1	86,8
Euro area (18 cou	67,5	65,2	68,9	79,4	84,7	86,8	89,8	91,7	92,0	90,0	89,2	87,1
EU (27 countries	60,2	57,6	60,8	73,4	78,9	81,5	83,8	85,7	86,4	84,4	83,3	81,7
Belgium	91,1	87,0	92,5	99,5	99,7	102,6	104,3	105,5	107,6	106,5	106,1	103,4
Bulgaria	21,0	16,3	13,0	13,7	15,3	15,2	16,7	17,1	27,1	26,2	29,6	25,6
Czechia	27,7	27,5	28,3	33,6	37,4	39,8	44,5	44,9	42,2	40,0	36,8	34,7
Germany	66,5	63,7	65,2	72,6	81,0	78,6	79,9	77,4	74,5	70,8	67,9	63,9
Estonia	4,4	3,7	4,5	7,0	6,6	6,1	9,7	10,2	10,5	9,9	9,2	8,7
Ireland	23,6	23,9	42,4	61,5	86,0	110,9	119,9	119,7	104,1	76,8	73,4	68,4
Greece	103,6	103,1	109,4	126,7	146,2	172,1	159,6	177,4	178,9	175,9	178,5	176,1
Spain	38,9	35,6	39,5	52,8	60,1	69,5	85,7	95,5	100,4	99,3	99,0	98,1
France	64,6	64,5	68,8	83,0	85,3	87,8	90,6	93,4	94,9	95,6	98,2	98,5
Croatia	38,6	37,2	39,0	48,3	57,3	63,8	69,4	80,4	84,0	83,7	80,2	77,5
Italy	102,6	99,8	102,4	112,5	115,4	116,5	123,4	129,0	131,8	131,6	131,4	131,2
Cyprus	59,3	54,0	45,6	54,3	56,8	66,2	80,1	103,1	108,0	108,0	105,5	96,1
Latvia	9,6	8,0	18,2	35,8	46,8	42,7	41,2	39,0	40,9	36,8	40,3	40,0
Lithuania	17,2	15,9	14,6	28,0	36,2	37,2	39,8	38,8	40,5	42,6	39,9	39,4
Luxembourg	7,8	7,7	14,9	15,7	19,8	18,7	22,0	23,7	22,7	22,2	20,7	23,0
Hungary	64,5	65,5	71,6	77,8	80,2	80,5	78,4	77,1	76,6	76,6	75,9	73,3
Malta	64,5	62,3	62,6	67,6	67,5	70,1	67,7	68,4	63,7	58,6	56,3	50,9
Netherlands	45,2	43,0	54,7	56,8	59,3	61,7	66,2	67,7	67,9	64,6	61,9	57,0
Austria	67,3	65,0	68,7	79,9	82,7	82,4	81,9	81,3	84,0	84,8	83,0	78,3
Poland	46,9	44,2	46,3	49,4	53,1	54,1	53,7	55,7	50,4	51,3	54,2	50,6
Portugal	69,2	68,4	71,7	83,6	96,2	111,4	126,2	129,0	130,6	128,8	129,2	124,8
Romania	12,3	11,9	12,4	22,1	29,7	34,0	36,9	37,6	39,2	37,8	37,3	35,1
Slovenia	26,0	22,8	21,8	34,6	38,4	46,6	53,8	70,4	80,4	82,6	78,7	74,1
Slovakia	31,0	30,1	28,5	36,3	41,2	43,7	52,2	54,7	53,5	52,2	51,8	50,9
Finland	38,2	34.0	32,7	41,7	47,1	48,5	53,9	56,5	60,2	63,6	63,0	61,3
Sweden	43,9	39,2	37,7	41,3	38,6	37,8	38,1	40,7	45,5	44,2	42,4	40,8
United Kingdom	40,7	41,7	49,7	63,7	75,2	80,8	84,1	85,2	87,0	87,9	87,9	87,4

Source: Eurostat

The increase in the volume of related costs, respectively the volume of total public expenditures, is the main consequence of this increase in public debt.

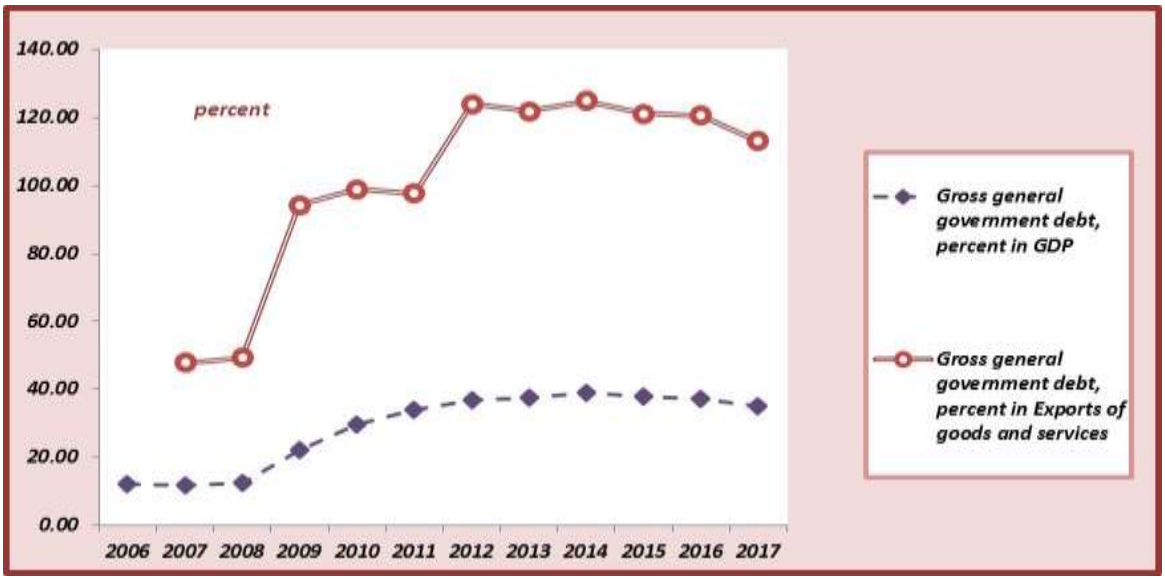
The effects of these public debt developments are also reflected in its per capita growth. Thus, we can observe the trajectory of public debt per capita in dollars (figure no.6). with an upward trend throughout 2006-2014; there is a fall in 2015, after which the upward trend, reaching 2017, is significantly higher than the figure recorded in 2006 at the beginning of the analysis (the increase being fivefold, from $ 748 in 2006 to 3741 $ 2017).



Source: Countryeconomy.com, 2019. *Romania National Debt*. [online] Available at: <https://countryeconomy.com/national-debt/romania> [Accessed 3 March 2019].

Figure no. 6. Public debt per capita, Romania, in dollars, 2006-2017

The most commonly used indicator that measures the level of indebtedness relative to a country's economic activity is the Public Debt/GDP Indicator. In Figure no. 7, we have seen this indicator, being recognized as the most important in the measurement of the indebtedness rate, being the one that emphasizes the country's solvency, together with another indicator of the analysis of the sustainability of the public debt, useful in analyzing the country's reimbursement capacity: Government Debt / Exports of Goods and Services Indicator.



Source: Eurostat, authoring data processing

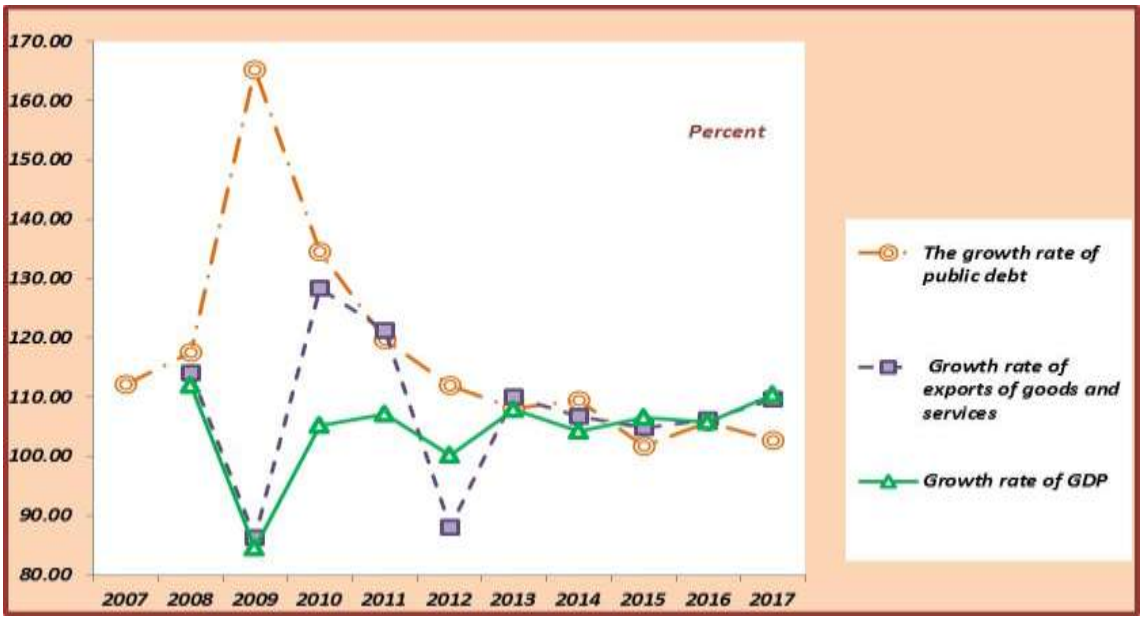
Figure no. 7. Evolution of public debt versus GDP and exports of goods and services in Romania, 2006-2017

As can be seen from the graphical representation, during 2006-2017 the analyzed indicator representing the share of public debt in exports of goods and services had a

strong increase in 2009, almost double compared to 2007. The trajectory continues upward until 2010 when a slight declines continued in 2011, 2013 and 2015-2017, with a fall due to the increase in export volumes, while government debt-to-GDP had a smooth upward trend until 2014, when the slope of the downhill started slightly.

Figure 8 shows that the growth rate of public debt exceeded that of GDP growth over the period 2006-2014, assuming that the level of indebtedness in relation to Romania's economic activity in this period increased from year to year. Between 2015 and 2017, the growth rate of government debt is lower than GDP growth.

It should be emphasized that, given the sustained growth rate of public debt outstripping the growth rate of the economy, the solvency risk will increase.



Source: Eurostat, authoring data processing

Figure no. 8. Evolution of the growth rate of public debt, exports of goods and services and GDP in Romania between 2007 and 2017

4. Conclusions

The years that followed the crisis required huge budget allocations that caused a serious deterioration in public finances, especially in the periphery of the euro area. When the crisis began to impact the euro area, its Member States reacted with massive packages of incentives and injections of public money into their banking systems, with debt and deficits far exceeding the Maastricht benchmarks.

At EU level (EU 28), government debt rose from 57.5% of GDP in 2007 to 86,4% in 2014 (Eurostat 2018), followed by a slight recovery, reaching 20.1% to 81.6% of GDP. At Eurozone level, a public debt of 65% of GDP was released, and in 2014 we had the highest value in the area of 91,8% of GDP and by the end of 2017 the value was slightly improved, of 86,8% of GDP. Thus, public debt has far exceeded the EU Treaty's 60% of GDP reference value since 2007.

Extending debt sustainability to meet payments, Greece, Ireland and Portugal have received emergency financial packages from both the IMF and the European Union.

According to the analysis, it was noted that the public debt - EUR millions - in the period 2006-2017, in Romania, was constantly increasing, reaching 206,700 euro in 2017

compared to the level of 12585,6 in 2007, EUR millions, reflecting financing needs with an ascending trajectory and inevitably leading to increased interest rates.

Another observation is that the level of growth of public debt (in Romania) exceeded that of GDP growth, during 2006-2014, this implies that the level of indebtedness in relation to Romania's economic activity in this period increased year on year. Between 2015 and 2017, the growth rate of government debt was lower than GDP growth.

It should be emphasized that, given the sustained growth rate of public debt outstripping the growth rate of the economy, the solvency risk will increase.

Levels, previously considered to be sustainable for debt, are now perceived as excessive and generate serious solvency problems. The level of tolerance for public debt in emerging countries is significantly lower, probably below the Maastricht Treaty and also difficult to estimate. In this context, the reduction of public debt is essential to restore market confidence and create sufficient room for the state, so that in the event of a future crisis, macroeconomic stabilization measures can be promoted.

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OBJECTIVES AND STRATEGIES REQUIRED FOR A LEADER FOR ACHIEVING EFFECTIVE MANAGEMENT WITHIN A CLINICAL SECTION OF A STATE HOSPITAL UNIT. SPECIFIC FEATURES OF THE ROLE

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Abstract: *The management of a hospital section from a health system subject to upper-level reforms and changes requires a coherent administration with internal solutions adapted locally to the existing resources and needs demanded by the beneficiaries. At the level of each section, their managers should set goals designed to optimize the activity of each section in such way that the medical service offered is of high quality, meets the requirements of the population segment served by the qualified hospital unit, and should find alternatives, depending on the specific, to provide on-demand medical services that supplement the revenues which the section determines. We will discuss the case of a psychiatric section of chronic patients, where the main sources of funding are the settlement of the medical services provided within the framework contract with the Healthcare Organization and the paid hospitalizations consisting in the payment of the period of hospitalization with a minimum of 14 days between two periods of admission under the regime with the Healthcare Organization. These paid admissions are ways to increase own incomes by providing on-demand medical services. The methodological course will imply the mix of qualitative with quantitative research and finalize with the validation of hypotheses established on the basis of the criteria for internal and external validation.*

Keywords*: Effective Management, Objectives, Strategies, Leadership, State hospital unit, Health system.*

JEL Classification*:D91 Role and Effects of Psychological, Emotional, Social, and Cognitive Factors on Decision Making.*

1. Introduction

It is necessary to outline a strategy by which to increase the incomes from on-demand medical services, adapted to each section with its specific. A strategy that remains under the responsibility of the chief doctor of the section to implement it, which aims at a multitude of aspects that need to be thoroughly analyzed and applied: the management of the human resource with maximum efficiency of performance, of admission cases in the clinic, of the resources necessary for the optimal functioning of the sections.

For effectively meeting the needs of healthcare service customers, it is necessary to acquire marketing skills and understanding patients, identifying their desires and needs and to build the trust which will determine the acceptance of solutions proposed via an European perspective (aiming at improving healthcare security of the citizens, generating and disseminating knowledge of the health domain, promoting health to improve prosperity and solidarity), in the effort to provide: an effective response to health threats, concrete and sustainable measures for disease control and prevention, an increase of

cooperation between healthcare systems for adaptation to key health aspects, as well as those that may arise unexpectedly and require urgent attention.

Change in the medical world really requires maintaining a sense of direction, acting at the right time, and now - in the context of the high quality of healthcare services responding to the expectations of healthcare customers, is a recognized priority for the European citizens - the time of recourse to marketing has come as a new method for identifying innovation opportunities in the delivery of healthcare services. In fact, we are in the full process of implementing the new European Health Strategy, which aims at safe, high quality and efficient healthcare services.

2. Content

The main strategic concern will be that all unit employees will adequately meet patients' requirements, the medical services provided to meet their needs and be designed to improve their health condition. For this, proactive approaches must be created to know on a permanent basis people's needs and to approach the quality from the healthcare consumer point of view, according to patients' expectations and each individual's needs. Each and every patient has to be analysed separately, considering their specific requirements as a bio-psycho-social assembly which makes them fit into different typologies. Therefore, taking into account these aspects, it would become necessary to treat the patient, to adapt the medical act to the patient and not to treat the disease in fact.

This approach is even more necessary in the case of the psychiatric patient, who develops in parallel a significant social side and with serious components that interfere with the medical act itself. In the case of the psychiatric patient it is necessary to work in a multidisciplinary team, including the psychiatrist, the psychologist, the social assistant included in the section, the social assistant within the territorial administrative unit within the are of which the patient has his domicile, the family doctor, etc.

The psychiatric patient is most of the times characterized by the lack of socio-familial support, is often marginalized in the socio-professional environments to which they belong, this fact deriving on the basis of misinformation at the population level regarding the aspects that involve a mental illness: how it manifests itself, the special needs involved, the need for therapeutic intervention, the need to maintain treatment and the importance that family, social support can bring in the evolution that the disease can take.

In order for a hospital unit to provide high quality services, it is absolutely necessary that the internal processes that are developed and followed to comply with certain clear and defined standards, despite the fact that there are accusations of authoritarianism: "Money is still spent without anyone being counted" (Cojocaru, 2005):

- Professional competency; whole team to be fully trained;
- The knowledge/skills/ performance of the medical team, managers and support team to be competitive;
- Accessibility - the provision of healthcare services is not restricted by geographical, social, cultural, organizational or economic barriers;
- Effectiveness - the applied procedures and treatment lead to obtaining the desired results;
- Efficiency - Providing necessary, proper care at the lowest cost; - interpersonal relationships - the interaction between suppliers, between suppliers and patients (customers), among managers, suppliers, payers, as well as between the healthcare team and the community; Practitioners feel painfully these facts "it is very difficult to do your job, one month you have half and one month not at all and the patients come in abundance, the suffering is not scheduled" (Cinteza 2004), "doctors are missing what their colleagues from neighboring countries have on a regular basis" (Sinescu 2005).

- Continuity - the patient benefits from a complete set of healthcare services that he or she needs, in a well-defined order, without interruption, or procedure repeats of diagnosis and treatment;

- Safety - minimal risk for the patient from complications or adverse effects from the treatment or other healthcare services related hazards;

- Infrastructure and comfort - cleanliness, comfort, privacy and other important aspects for patients;

- Choice - as much as possible, the customer chooses the supplier, the insurance type or the treatment.

The problems identified in the institutional history create the premises of strategic interventions that lead to a quality of the perfect medical act by solving them.

Given that improving the quality of medical and healthcare services provided is a wish and a basic principle in the health domain, I believe that it should also be the goal of a management project.

Total Quality Management extends the concept of quality management, encompassing both the participation and motivation of all members of the organization. Total Quality Management is an organizational model that involves overall participation with a view to planning and implementing a continuous quality improvement process that exceeds customers' expectations.

This model assumes that 90% of the problems are process-related rather than personnel-related. Three principles govern the concept of total quality:

- focus on customer
- continuous improvement of quality
- teamwork.

Also, this fully addressed quality management model is sensitive to external aspects, such as the admission method, social status, patients' genotypes, etc.

The indicators which measure its efficiency are the most difficult to accept by health professionals given that patients' experience can be quantified only as a result of questioning or direct observation. Often the results depend on the geographical region, cultural aspects, etc. The implementation of total quality management within this unit is useful to the management team for more efficient management of available resources and helps to achieve short and long term goals.

Quality management principles determine the orientation of the activity towards patients, develop a process-based operational approach, build up relationships with healthcare partners, NGOs, and public institutions, increase patients' satisfaction, and help guide the results of the entire team.

Periodic assessments of all activities in the institution will be done quarterly by the management team according to ROF (Organization and Functioning Regulation).

In conclusion, implementing a continuous Quality Management System:

- Will determine the objectives of the short, medium and long term quality and their achievement,
- Will help to comply with the rules of health security and to identify risks, prevent and eliminate deviations;
- Also involves a reduction of the costs;
- Increases the clarity of the decision-making process and helps to standardize the medical act by implementing procedures at the level of the whole staff. The complex and accelerated changes produced in the organizational institutions' action environment demand an adaptive response.

The pace with which an institution learns, in order to anticipate and adapt to the evolution of the ambient environment, is a source of competitive advantage.

The manager needs to know how to develop the fundamental "adaptive skills" of the respective unit. Furthermore, Oprescu (2005) mentions that ”the attempt to blame the hospital directors for the current situation of the healthcare system was totally wrong ”.

These are manifested by:

- initiating organizational programs;
- improving competitiveness by implementing quality management;
- incorporating information systems into the general strategy of the hospital;
- creating an attitude and mentality centered on ensuring quality services;
- dimensioning the workforce according to internal and external requirements;
- developing a flexible and adaptable human resources strategy to individual needs.

3. Conclusions

For the medical act improvement, an eficient communication between Section Chiefs and the rest of employees is mandatory, the daily work to be carried out in a functional, united team, which will allow the implementation of the projects customized to the needs and requirements of the beneficiaries of health care services.The human resources are part of the overall integrated system and in order for the system to respond correctly to the requirements, it is critical that the medical personnel, in other words the provider of the medical services to ensure the compliance of this process by utilizing their full knowledge and professional skills. In order to reach this goal, the medical personnel has to be motivated, somehow the fulfillment of this objective to intersect the individual employee’s objective.

From a psychological standpoint, the human being si distinguished by features of different personalities that outline a particular individuality. One of the key responsibilities of the Manager or Section Chief is to get to know all these aspects, discover each member of the team that he or she is leading so as to be able to create a motivational framework for everyone. A happy employee becomes a better worker.

If the communication between the manager and employees is continuous through teamwork, projects can be realized that permit adapting to the new, but for this to happen, people need to be motivated and trained continuously.

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