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## FEMALE WORKERS IN THE NON-FARM SECTOR IN INDIA: EVIDENCE FROM NSSO AND PLFS REPORTS

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**Abstract:** *This study explored the role of female workers in the non-farm sector in India. Hence, the non-farm sector engages in a variety of economic activities and contributes significantly to the creation of employment. The study is based on secondary data from the Periodic Labour Force Survey (PLFS) and the National Sample Survey Office (NSSO). The PLFS reports for 2019-20, 2020-21, and 2021-2022 were utilised to analyse variables such as workforce participation rate, labour force participation rate, and the employment status of females. Specifically, age, gender, and sector (rural and urban) were considered in the analysis. Descriptive statistics and cross-tabulation have been used as the primary statistical methods to analyse the following variables in this study. The study's findings show the gap between males and females has widened in the labour force participation rate in the labour market. As a result, females are leaving the workforce at a faster rate. Thus, it must provide new job opportunities for various jobs and advance them from a policy viewpoint as well.*

**Keywords:** *Non-farm sectors, female workers, PLFS, descriptive statistics, India.*

**JEL Classification:** *J0, J07.*

### 1. Introduction

The Rural Non-Farm Sector (RNFS) includes a wide range of economic activities in rural areas, and covers all rural productive substances along with farm holdings. The non-farm sector is heterogeneous and includes all economic activities i.e., mining and quarrying together with other secondary and tertiary sector activities apart from agriculture, livestock, hunting, and fishing (Lanjouw and Lanjouw, 2001). Non-farm sector plays a significant role in the inclusive development of rural areas of India, by rising the employment skills of rural labour, that might be decrease income disparities. By reducing the vulnerability of rural households due to various reasons, the existence of proper functioning of rural non-farm sector can operate as a complementing force in balancing variations in agricultural income. However, the degree of agricultural success in the affected areas determines how the development of the non-farm sector functions. Low incomes put farmer households, in particular, in danger of failing, and economically disadvantaged places may not be able to offer sufficient employment possibilities in agriculture. Non-farm activities consequently emerge as a coping mechanism for the scarcity of the push forces related to the farm sector (Rajeev & Bhattacharjee, 2018). Alternatively, agricultural surplus earnings in agriculturally developed districts are also invested in non-farm activities (pull forces) to create a diverse income stream.

For the growth of economy, the non-farm sector is very essential. Global data indicates that, in Africa, non-farm revenue accounts for approximately 35 per cent of rural household income, whereas in Asia and Latin America, it accounts for roughly 50 percent (Hagblade & Hazell, 2010). Compared to emerging countries, where it accounts for 20–30 percent of total household income, the RNFS contributes 25–35 percent of rural households' total income (Coppard, 2011). In keeping with the 2011 census, 45 percent of India's total

workforce was employed within the non-farm sector. A phase of structural employment transformation was also experienced by the Indian economy, during which jobs in agriculture and related sectors fell by roughly 5 million annually, while the number and share of workers in non-farm sectors increased by roughly 7.5 million annually (Himanshu, 2011; Mehrotra et al., 2014; Kannan and Raveendran, 2019). Both the decline in the proportion of poor people and the decline in the labour force working in agriculture were new trends in India.

Globally, Men are more probably than women to participate in the labour market. Despite progress, disparity between genders in labour force participation is one of the most pressing challenges in today's world of work. One of the, very common phenomena observed by several researchers is the U-shape association between national income and women's labour force participation. These phenomena illustrate, the disparity between genders in the labour market for developed, low-income countries or developing countries. As a developing country, India has experienced, a major issue of the gender gap in labour markets past three decades, especially low female labour force participation as well declined position found mid of 2000 (Mehrotra & Parida, 2017; Mehrotra & Sinha, 2017). It can be shown from the latest Periodic Labor Force Survey (PLFS, 2021-22), where labour force participation rate is 57.3 and 24.8 percent for males and females, respectively in India with all ages. It has one of the lowest female labour force participation rates (LFPR) among developing countries, standing at 24.53 per cent in 2018-19. It is well below the global average and has been widening. Among the all-Indian state, Bihar has extremely low female LFPR, which is 6.7 percent as compared to male is 46.5 percent with all ages (PLFS, 2021-22).

Bihar is amongst the less developed states in India with approximately 87 percent of the population living in rural areas (Census, 2011). However, there has been structural economic change within the state which will be noticed where the pattern of labour employment is shifting from farm to non-farm sector. It is estimated that the income from non-agricultural sectors is more than twice that of activities concentrated on agriculture. Since around 70 percent of Indians live in rural areas, the agenda for rural development is crucial to the country's economy. Therefore, a similar agenda is necessarily relevant for Bihar too which needs more attention from the policymakers and researchers to look at. Bihar faces a larger challenge in developing its agricultural sector due to the state's extremely high population density, which places a significant deal of burden on the state's limited land resources. Various studies on the role of the non-farm sector are analysed globally but only a few studies specialising in the contribution of female workers in the non-farm sector specifically a state like Bihar need to be focused (Vasco and Tamayo, 2017; Mehrotra and Parida, 2017). The purpose of this paper is to further the discussion on women's empowerment by examining the non-farm, non-agriculture aspects of the rural economy, their increasing significance in rural residents' livelihood strategies, the new opportunities and changes they bring to the area, and the ways and places in which nonfarm employment can significantly contribute to women's empowerment. While doing this, we examine how crucial development initiatives are to the effective integration of gender issues.

## **2. Review of Literature**

Gender, inequality, and non-farm income were discussed by Canagarajaha et al. (2001). This study examines how inequality in rural Ghana and Uganda is affected by non-farm employment. At every income level, non-farm income is crucial for both men and women. The authors discovered that the primary source of income for the expanding inequality was self-employment income. The group looks at poverty decompositions to investigate variations in growth vs redistribution. The most obvious gender difference

between the two nations is that, in households led by women, non-farm activities are more likely to have an impact that contributes to inequality. According to Kundu et al. (2003), there may not always be a positive correlation between a high percentage of non-farm work and sound economic development in rural areas due to association with the incidence of rural non-farm employment, the levels and types of employment, unemployment, and poverty at the state level. While few studies have been done specifically looking at the interaction between rural and urban areas, some have looked at how urban centres affect the agrarian economy. There has been a growing argument since the early 1990s that liberalisation policies have aided in the expansion of commercial and other service-related enterprises in rural India. Within a range of 0 to 15 kilometres, there is a sharp decline in per capita income. Farid et al. (2009) have highlighted that in rural Bangladesh, women are predominantly underutilised and often go unrecognized. Official labour force statistics have not fully acknowledged the crucial contributions that women make to both agricultural and non-agricultural production processes. Approximately 60–70 percent of women from households who are landless or almost landless are employed as wage labourers in agriculture. Larger farm women don't work in the fields. They are being forced to abandon their traditional roles as housewives due to financial constraints. Srivastava and Srivastava (2010) study on rural women's employment reveals that despite increased employment rates, rural women in India predominantly engage in self-employment or casual labour within agriculture, facing discrimination and job-typing that keeps them in low-paying roles. The study emphasizes that higher work participation alone doesn't lead to better outcomes; instead, improved prospects are associated with higher education and asset ownership. Education, while not always influencing initial workforce entry, becomes the most critical factor for enhancing the quality of non-agricultural work for women already employed. Additionally, women's autonomy, measured by factors like land control and mobility, empowers them to explore non-agricultural jobs. This research highlights the enduring challenges faced by rural women, emphasizing the need for comprehensive policies addressing education, autonomy, and gender bias to improve their economic well-being in India. According to Himanshu et al. (2011), throughout the last 30 years, the RNFS in rural India has developed continuously, with a mild increase from the late 1990s to the middle of the 2000s and a decline after 2004–05. The decrease in rural poverty has only lately been closely associated with the village economy's diversification. Vasco and Tamayo (2017) pointed out that although females are more probably than males to work for themselves in Ecuador's non-farm sector, their pay is still far lower than that of men in that same field. India's economy has grown rapidly during the last several decades, according to Kumar et al. (2020). The employment diversification of eastern India towards the non-farm sector between 1993–1994 and 2011–2012 shows a notable variation by income group and farm size. In rural eastern India, people from large households are more likely to pursue non-farm and self-employed work than standard pay or salary jobs. Smaller family members are more likely to choose casual work as their main source of income and to choose employment in a non-farm regular salary- or wage-earning position. In eastern India, factors such as caste, age, gender, and levels of technical and general education have a big influence on non-farm diversification. In two years, household expenditure rises by 14 percent, and in six years, it increases by 50%, if one more member of the home works in the non-farm sector. As per Pattayat et al. (2022), there was a significant decrease in poverty in India between 2004–2005 and 2011–2012, followed by a drop in the overall population of poor people. Negative and statistically significant effects are caused by the non-farm sector. Thus, a 1 percent rise in the NSDP growth of the non-farm sector as a whole is expected to lower the poverty rate in rural India by about 6.2 percentage



points. Agriculture mechanisation has increased dramatically between 2004–2005, leading to the loss of jobs in agriculture for landless and marginalised individuals. The comparatively sluggish increase in employment in the non-farm sector over the years after 2011–2012 ought to raise serious concerns.

### 3. Objective

The study examines the female labour force participation in non-farm sectors in India. Here, non-farm sectors consider only those sectors which have come under secondary and tertiary Sectors. While both these sectors encompass numerous non-agricultural activities, the study focuses on broader categories of non-agricultural activities, including manufacturing, construction, trade/hotel, and transport/storage.

### 4. Data and Methodology

This study is based on secondary data, specifically drawing from the PLFS and NSS sources, to achieve its objectives related to ‘female workers in the non-farm sector in India’. The analysis incorporates the latest PLFS data from the years 2019-20, 2020-21, and 2021-22. Additionally, to facilitate comparisons, NSSO data is included in the study. Methodologically, the research employs simple statistical tools, such as cross-tabulation and descriptive statistics. Descriptive statistics are utilised to analyse variables including workforce, participation rate, and employment status of females, with a particular focus on sectors (rural and urban) and gender perspectives. The primary presentation methods for these statistics include pie charts, graphs, and tables.

### 5. Results and Discussion

Table No. 1 Gender-Wise LFPR, and WFPR for India (in percentage)

<i>LFPR</i>			
<i>Year</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
2017-18	55.5	17.5	36.9
2018-19	55.6	18.6	37.5
2019-20	56.8	22.8	40.1
<i>WFPR</i>			
<i>Year</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
2017-18	52.1	16.5	34.7
2018-19	52.3	17.6	35.3
2019-20	53.9	21.8	38.2

Source: Various Rounds of PLFS Reports, & NSSO rounds 61st (2004-05) and 68th (2011-12).

The LFPR for both males and females has decreased overall (Table 1), although the rate at which females are leaving the labour force is substantially higher. Male participation has remained more or less stable with slight fluctuation in 2017-18. Between 2004-05 to 2017-18, there was more than a 10 percent fall in female LFPR. According to the PLFS (2018-19), females entering the labour market dipped to only 2.8 percent in Bihar, while 18.6 percent of 43 females are participating in the labour market at the all-India level. There is a

claim that a low female LFPR can hinder economic expansion by lowering the rates at which it could increase (Kapsos, Silberman & Bourmpoula, 2014). Even though it increased to 6.4 percent under the latest PLFS report 2019-20, that also includes the period when the economy was hit by the pandemic that led to reverse migration that might have affected their participation. As the literature suggests, one element that influences women's engagement in the labour force is family income. (Sarkar et al., 2017). Overall, Bihar's female labour market participation rate is substantially lower than India's overall female labour market participation rate. Similarly, females in Bihar participate in the labour force far less than males.

Numerous studies have investigated the causes of India's disadvantaged female LFPR. Female LFPR is low and dropping due to a combination of factors including income effect and education (Kapsos et al., 2014; Mehrotra et al., 2012; Rangarajan, Kaul, & Seema, 2011). Additionally, societal factors that affect female LFPR negatively include marriage and home responsibilities (Sanghi, Srija, & Vijay, 2015). Furthermore, there have been suggestions regarding measurement problems in capturing female work in NSS surveys (Kapsos et al., 2014). Similar questions have been raised regarding the results by Rodgers (2012), who has presented a study that demonstrates a significant increase in female LFPR.

**Table No. 2 Percentage of Labour Force Participation Rate (PLFPR) and Workforce to their usual place of work status (ps+ss) with all ages, All India.**

Employment status	PLFS Year	<u>Usual place of work</u>			
		<u>Rural</u>		<u>Urban</u>	
		Male	Female	Male	Female
<b>Labour force participation rate</b>	2019-20	53.3	24.7	57.8	18.5
	2020-21	57.1	27.7	58.4	18.6
	2021-22	56.9	27.2	58.3	18.8
<b>Workforce</b>	2019-20	53.8	24.1	54.1	16.8
	2020-21	54.9	27.1	54.9	17.0
	2021-22	54.7	26.6	55.0	17.3

Sources: LFPR & workforce percentage from consecutive reports of PLFS years (2019-20, 2020-21, 2021-22)

Note: usual principal status and subsidiary status are considered together as usual status (ps+ss).

In Table 2, there are two employment statuses, namely labour force participation rate (LFPR) and workforce with all ages, in all India levels. It shows that previous three consecutive reports of PLFS, the LFPR and the workforce both have less than 50 percent around in both rural and urban sectors. Particularly, in the rural regions the male and female, the LFPR and workforce both have declined. Where, LFPR is from 57.1 percent to 56.9 percent for males and from 27.7 percent to 27.2 percent for females in LFPR, from year 2020-21 to 2021-22. Similarly, declines were also found in the workforce in rural regions from 54.9 percent to 54.7 percent for males and 27.1 percent to 26.6 percent for females the same year in PLFS.

But from the gender and region perspectives, it observed that in both work conditions LFPR and workforce, females' s work conditions significantly declined (0.5 percent) as compared to males (0.2 percent) from PLFS year 2020-21 to 2021-22.

### Labour force participation rates by gender across farm and non-firm sectors

As per the objectives of the study, the factors affecting female participation in the non-farm sector, this section tries to find out the current share of females in different sectors. Here, broadly categorised into two sectors as per the study objective. Apart from the overall labour force participation in various sectors for females, the non-farm is such type of sector where females labour force share is much lower than males. We can also justify this by the given table 3.

**Table No. 3 Percentage of male and female workers between farm and non-farm activities, all India**

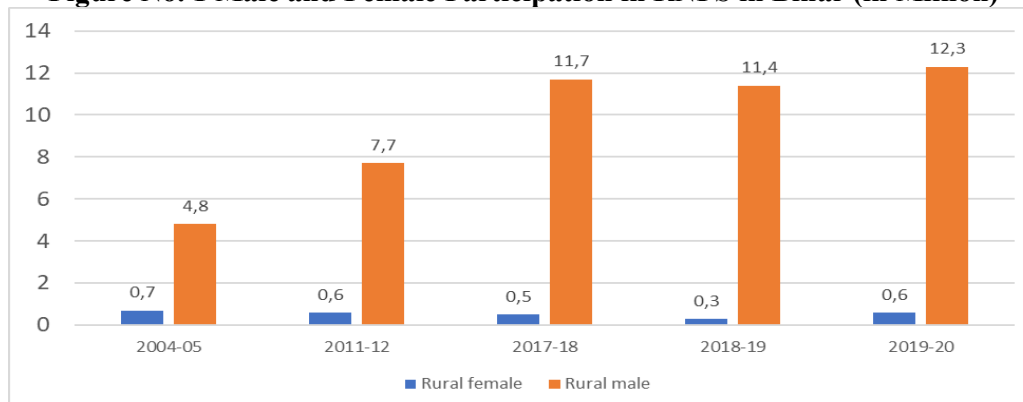
Sector	<u>Rural + Urban</u>					
	PLFS (2021-22)		PLFS (2020-21)		PLFS (2019-20)	
	M	F	M	F	M	F
<b>Farm</b>	38.1	62.9	39.8	62.2	40	59.9
<b>Non-farm</b>	49.2	25.7	49.2	23.4	50.7	23.5

Source: Last three consecutive reports of PLFS years, 2019-20, 2020-21 and 2021-22

In Table 3, the sectors are categorized into two parts farm and non-farm based on previous studies and NSSO (Lanjouw & Lanjouw, 2000; NSS, 2007-08). Lanjouw states that agriculture activities include the farm sector, except its allied activities and non-farm activities are considered non-agricultural activities. So, here farms included agriculture only and non-farms included non-agriculture activities (mining and quarrying, manufacturing, water, electricity, constructions, trade, transport storage & communications, hotel & restaurant, and others) as per broad industry division 2008, in the PLFS report 2021-22. But, here only considers six non-farm activities except for other services. The percentage distribution of workers sums up all six activities and is presented as a form of the non-farm sector in the given table. Hence, we observed that female work percentage participation is less than males with 23.5 percent, 25.7 percent and 23.4 percent in respective PLFS years 2019-20, 2020-21 and 2021-22.

So, regarding some previous analysis base study with the help of NSSO and PLFS data sources too. We find that the female worker's participation in the non-agriculture sectors is significantly low. The scenario of this situation is shown in the given figure.

**Figure No. 1 Male and Female Participation in RNFS in Bihar (in Million)**

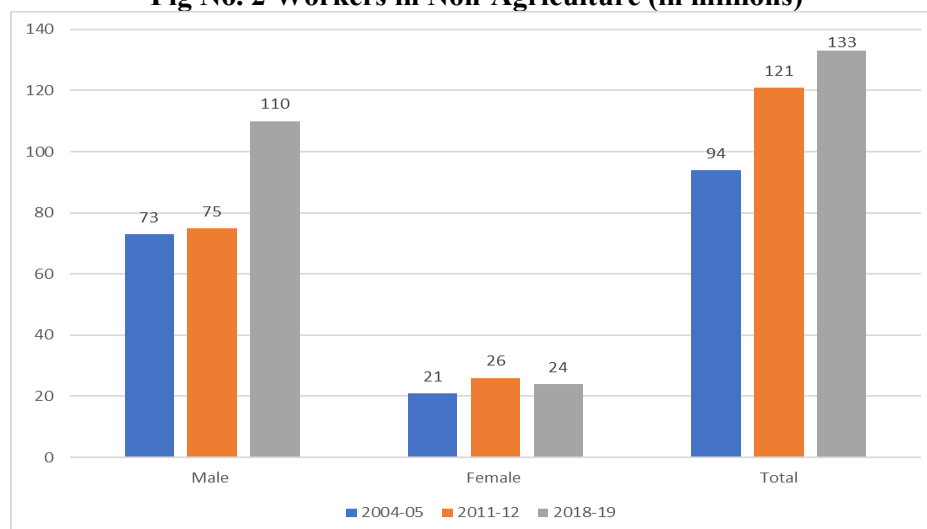


Source: Survey Report on Employment and Unemployment conducted in the 61st (2004-05) and the 68<sup>th</sup> (2011-12) round of NSS and the PLFS Reports (Various Rounds).

Note: RNFS = Rural Non-Farm Sector

Focusing on the rural employment structure in Bihar, it was discovered that while rural livelihood diversification from farm to non-farm rose, more rural females remained engaged in farm work, compared to rural males. Figure 1 shows the gender representation in the RNFS in Bihar in millions, which shows that there exists a sharp gap between male and female participation in the rural non-farm sector in Bihar. During 2004-05 the male participation in RNFS was 4.8 (in millions) and female was 0.7 (in millions) which shows a gap in their participation but this gap not only persisted that year only increased which we can see in the above figure. In 2019-20 the male participation was 12.3 (in millions) and the female participation was 0.6 (in millions). It shows that rural male dominates the RNFS, and rural female workers are mostly in farm sectors with limited opportunities for non-farm employment.

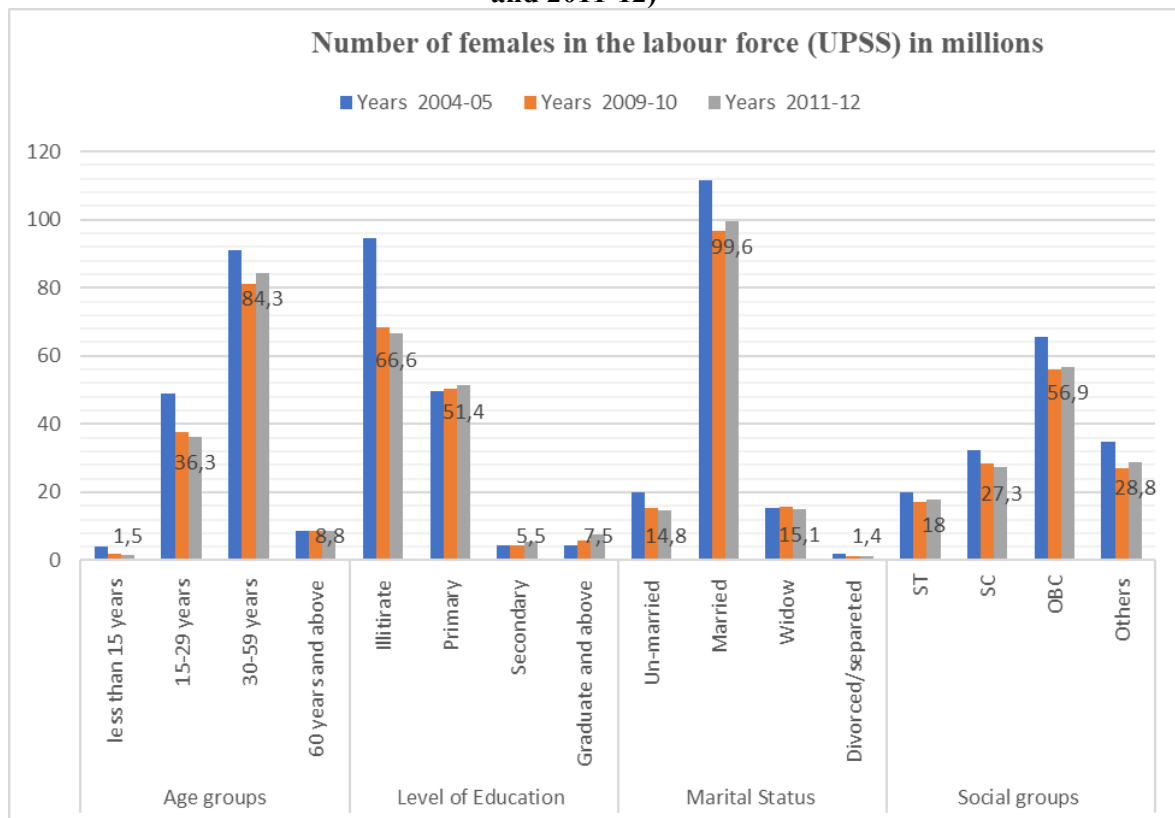
**Fig No. 2 Workers in Non-Agriculture (in millions)**



Source: Niti Aayog Discussion paper, Nov. 2017, NSSO, EUS, PLFS 2018-19, Calculated by C.S.C. Shekhar.

Figure 2 illustrates that over the specified period, In the non-agricultural sector, the whole labour force, comprising both male and female workers, has increased. But in the case of gender perspective, a huge gap in the years 2018-2019. Where the male is 110 million, while the female is the only worker in non-agriculture. A majority of studies (Chatterjee et al 2018; Goldin 1995; Olsen and Mehta 2006) suggest that the Female Labour Force Participation Rate (FLFPR) initially (that is, at a lower age) declines, then increases with higher educational attainments, leading to a U or J-shaped relationship between the FLFPR and literacy levels. Evidently, in a developing country, as the economy develops, household incomes increase and the FLFPR declines (income effect). As access to education improves, female enrollment in educational institutions increases, causing the FLFPR to fall (education effect). Further, when circumstances (both household and national economy) improve and female family members have the required education, their participation in the labour market also increases (substitution effect).

**Figure No. 3 Socio-economic status of female workers in India, years (2004-05, 2009-10 and 2011-12)**



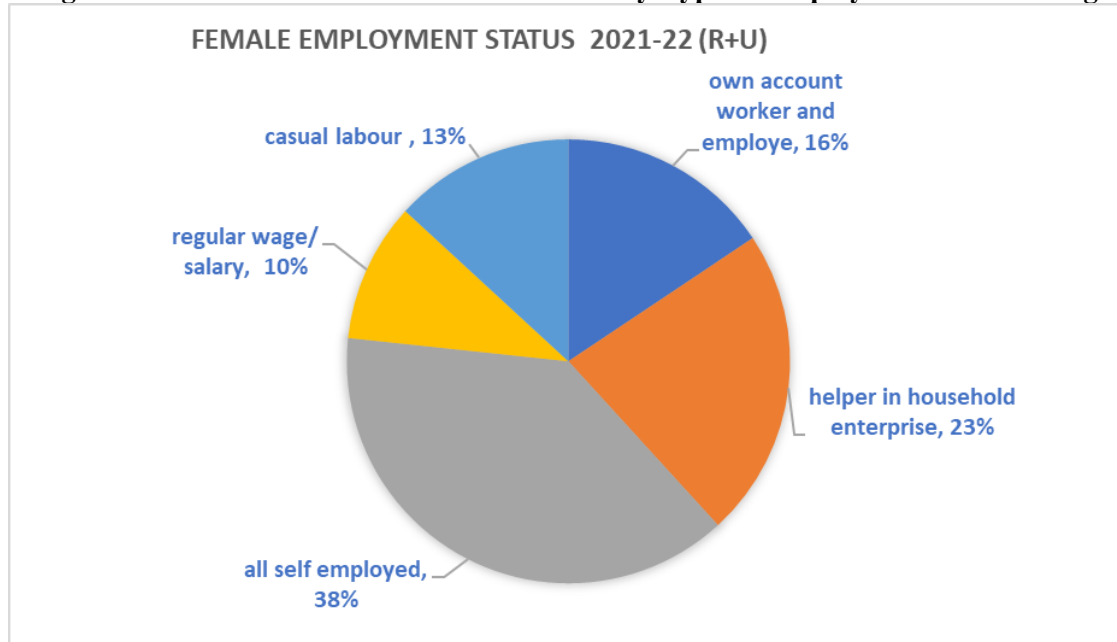
Source: Calculated by Mehrotra and Parida, 2017 from various NSS rounds

How different socio-economic conditions affect female labour force participation is shown in Figure 3. Basically, in given figure comprises the four sections of socio-economic dimensions age groups, level of education, marital status and social groups and their respective indicators. Hence, among the four social groups in marital status, the married female labour force has highly participated with 99.6 million and after that age factors are also important, where age 30-59 years female is 84.3 million. Here, one thing is very unlikely observed, generally, it is found that when people are

more educated, they acquire more skills. The skilled people's work participation rate increases according to their skill. But in the case of females, there are highly illiterate female labour force with 66.6 million, especially in the year 2004-05.

### Employment status of Female workers

**Figure No. 4 Distribution of Female Workers by Type of Employment in Percentage**



Source: PLFS report 2021-22

Based on employment status estimates from 2021–2022, Figure 4 shows the percentage distribution of female workers in usual status (ps+ss) throughout rural and urban areas in India. As per the NSSO, the employment status is broadly categorised into three parts such as self-employment, regular wage/salary and casual labour. Three job statuses are included in self-employment: own account worker, employee, and assistant in household enterprises. So, as per Figure 4 females are more engaged in self-employed with 38 percent. Account workers are those workers who operate their enterprises with or without hiring any labourers. But here questions are why females are more interested in this section. The nature of work as a helper in household enterprises is mostly family members engaged in their household work without receiving regular salaries/wages (NSSO, 2007-08). In India it has been observed that females are more participate in domestic work like cooking, caring for kids, to manage of other household activities and so on. Therefore, self-employment is more significant for females as compared to other employment statuses.

### 6. Conclusion

A process of inclusive and sustainable development must include women's engagement in the labour force and their ability to find adequate employment. Several studies have shown that maximising women's economic potential is essential to raising economic development and productivity. Additionally, advancing women's economic empowerment depends on lowering barriers to decent labour associated with gender. It has been observed that the difference between LFPR and WPR has grown, and thus the result was a rising unemployment rate. The LFPR has decreased for both men and women, although the rate at

which women were leaving the labour force was significantly higher. When comparing Bihar's labour force participation rate to that of India as a whole, Bihar's rate was lower for women. This implies the precarious labour market situation for females in Bihar. Thus, the need is to open new employment opportunities for not only males but also females.

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## DEVELOPMENT OF THE ECONOMETRIC MODEL FOR ASSESSING THE SOCIAL EXCLUSION OF THE ELDERLY PEOPLE IN THE REPUBLIC OF MOLDOVA

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**Abstract:** Researching the phenomenon of social exclusion of the elderly people is complex. In economics, the vulnerability to social exclusion of the population is seen as the presence of a low level of income and accumulated property; the likelihood of welfare loss due to exposure to risks that households cannot adequately respond to or insufficient access to tangible and intangible assets. The significant factors of exclusion are the inaccessibility for the elderly people of such effective social problem-solving mechanisms as the availability of a stable and paid job, access to social networks and effective social support from the state. Most often, temporary or permanent incapacity, age and other characteristics associated with an individual's inability to work and, as a result, the loss of a source of livelihood, are identified as the main factors of exclusion. Evaluating the level of social exclusion of the elderly people involves developing a model of the dependence of the material situation on the impact factors of social exclusion. A factor system was formed for the study based on the survey investigation data conducted by the author. The hypothesis that there is an interdependence between social exclusion and the factor system was formulated and tested.

**Keywords:** social exclusion, elderly people, econometric model.

**JEL Classification :** C10, D63, J14.

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### 1. Introduction

Socially vulnerable groups of the population, including the elderly people, are part of society, so the exclusion of certain groups increases the risks to society (lack of solidarity, uneven budget burden, social discontent). In order to reduce the risks, measures must be taken to include social groups and give everyone access to basic rights. But today, negative attitudes and prejudices towards socially vulnerable groups of the population are strong in society. The existence of mental barriers, which both aggravate exclusion and prevent inclusion, requires the development of mechanisms to overcome them. The inclusion of all social groups in society will activate the processes of integration of society and serve as a basis for its modernization.

In economics, vulnerability to social exclusion of the population is defined by several interconnected factors:

**1. Low level of accumulated income and property.** People with low incomes and no accumulated property are more likely to experience social exclusion. Lack of stable financial resources and material assets can limit access to essential opportunities such as education, health and adequate housing.

**2. Likelihood of welfare loss.** Households exposed to economic risks, such as unemployment, financial crises, or health problems, and lacking the means to respond adequately to these risks, are vulnerable to social exclusion. Without financial reserves or social support, these households can suffer a significant drop in quality of life.

**3. Insufficient access to tangible and intangible assets.** Tangible assets include property, savings and other physical assets, while intangible assets refer to education, skills,

social networks and social capital. Lack of access to these assets can prevent individuals from participating fully in economic and social life, thus amplifying the risk of social exclusion.

Thus, vulnerability to social exclusion is not only a question of income, but also of the ability to cope with risks and access the resources needed to maintain and improve well-being. It is a complex phenomenon that requires multidimensional interventions to be tackled effectively.

The article was developed within the framework of Subprogram 030101 „Strengthening the resilience, competitiveness, and sustainability of the economy of the Republic of Moldova in the context of the accession process to the European Union”, institutional funding and as part of PhD thesis research.

## **2. Data sources and methodology**

The following general scientific research methods were used in the research process: empirical observation and dynamic analysis of reality, monographic method, induction and deduction, comparison, analysis and synthesis, statistical analysis, logical analysis, critical analysis of materials; economic diagnostic methods: economic-mathematical modelling, comparison, grouping, graphical and tabular illustration of studied materials; and study-specific methods: descriptive method (survey investigation). The scope of survey research is particularly broad, seeking to determine the current opinions of a specific population group. Survey research is thus a research tool with wide applicability (Epuran, 2005).

## **3. Development of an econometric model to assess the social exclusion of elderly people**

In order to evaluate quantitatively and qualitatively the impact factors on the phenomenon of social exclusion, a mathematical-econometric mechanism was developed, including 2 questionnaires for 2 categories of elderly people according to the level of involvement in economic activity and a survey of the population was conducted in the northern, central, southern and Chisinau municipality. The sample of the investigation constituted 207 persons, of which 82 elderly persons employed in the labor force and 125 elderly persons not employed after reaching the retirement age according to the legislation in force (Heghea, 2020).

Assessing the level of social exclusion of elderly people requires a systematic approach involving the development of a model of the dependence of the material situation on various social exclusion impact factors. In the study on the vulnerability to social exclusion of elderly people, a system of factors was formed based on data collected through survey research carried out by the author. These factors are essential for understanding and assessing the material and social situation of elderly people and for testing the hypothesis of interdependence between social exclusion and these factors. The material situation of elderly people (SIT) is used as the dependent variable.

*Table 1. System of determinants characterizing social exclusion of elderly people*

Exogenous variable	Determining factors
AF	Claims made by pensioners about employment
DM	Field of activity (type of economic activity)
ED	Level of education
EV	Who provides help in case of need (relatives, neighbors, state, own possibilities, etc.)
MP	Size of pension received by the elderly
PR	Problems faced by the elderly (lack of money for basic needs, rest, health problems, etc.)
PS	Sufficient size of pension to meet needs (according to respondents)
RS	Residence (town, village)
SN	Health status (respondent's assessment)
SX	Gender (male, female)
SPR	Solution of problems of the elderly (state assistance, benefits in medical and other services, cash assistance, etc.)
ST	Employed or not employed after retirement
VPP	Average monthly income before retirement
VR	Age

Source: Elaborated by the author.

A mathematical model of the dependence of the dependent variable SIT on the allied variables  $X_n$  in the following consecutivity was constructed in the research:

- Constructing correlation matrix for the allied variables and evaluating the statistical significance of the correlation between them.
- Based on the existence of a linear relationship between the endogenous variable and the exogenous variables, evaluate the parameters of the regression model using the least squares method. Calculate the vector of regression values of the endogenous variable and random deviations.
- In the econometric research the student test was used to test the statistical significance of the model parameters using a significance level of 0.05 (i.e. 95% reliability).

A multifactor regression model was constructed, and the coefficients of the regression equation determined:

$$Y = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 + \beta_n * X_n \quad (1)$$

where:

Y - dependent variable;

X - independent variable;

$\beta$  - regression coefficient.

The results of multiple regression are presented numerically below.

**Table 2. Multifactor linear regression model of social exclusion of elderly people in the Republic of Moldova**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.382400	0.827806	1.669956	0.0966
RS	-0.148924	0.199960	-0.744766	0.4573
SX	-0.144308	0.143151	-1.008078	0.3147
VR	0.025357	0.055209	0.459288	0.6465
ED	0.097191	0.040056	2.426403	0.0162
DM	0.013671	0.028049	0.487399	0.6265
VPP	0.221132	0.077992	2.835306	0.0051
MP	0.191085	0.069264	2.758799	0.0064
PR	-0.190570	0.085952	-2.217163	0.0278
SN	0.282398	0.092418	3.055655	0.0026
PS	0.105639	0.071046	1.486896	0.1387
EV	-0.067483	0.090412	-0.746395	0.4563
SPR	0.043257	0.044308	0.976278	0.3302
ST	-0.114493	0.195936	-0.584337	0.5597
AF	0.086371	0.061566	1.402886	0.1623

Source: Elaborated by the author.

As follows from the data obtained using the EViews least squares method, the resulting multifactor model looks like this:

$$\text{SIT} = 1.38 - 0.15 \cdot \text{RS} - 0.14 \cdot \text{SX} + 0.03 \cdot \text{VR} + 0.10 \cdot \text{ED} + 0.011 \cdot \text{DM} + 0.221 \cdot \text{VPP} + 0.19 \cdot \text{MP} - 0.19 \cdot \text{PR} + 0.28 \cdot \text{SN} + 0.11 \cdot \text{PS} - 0.07 \cdot \text{EV} + 0.04 \cdot \text{SPR} - 0.11 \cdot \text{ST} + 0.09 \cdot \text{AF} \quad (2)$$

Null hypothesis H0 - there is no multifactor linear regression between material status and the indicators in Table 2. According to alternative hypothesis H1, the described relationship exists. Three multifactor linear regression models were developed.

**Table 3. Testing the null hypothesis that the regression parameters are equal to zero**

Exogenous variable	Model I		Model II		Model III	
	t-statistic	p-value	t-statistic	p-value	t-statistic	p-value
RS	1.669956	0.0966	-1.068521	0.2866	-	-
SX	-0.744766	0.4573	-1.038638	0.3002	-	-
VR	-1.008078	0.3147	-	-	-	-
ED	0.459288	0.6465	2.460626	0.0147	2.541268	0.0118
DM	2.426403	0.0162	-	-	-	-
VPP	0.487399	0.6265	3.108962	0.0022	2.898337	0.0042
MP	2.835306	0.0051	2.726982	0.0070	2.944583	0.0036
PR	2.758799	0.0064	-2.751881	0.0065	-2.530054	0.0122
SN	-2.217163	0.0278	3.083492	0.0023	3.065353	0.0025
PS	3.055655	0.0026	1.365937	0.1735	-	-
EV	1.486896	0.1387	-	-	-	-
SPR	-0.746395	0.4563	-	-	-	-
ST	0.976278	0.3302	-	-	-	-
AF	-0.584337	0.5597	1.488586	0.1382	-	-

Source: Elaborated by the author.

Analyzing the t-statistic and p-value, we conclude that only in the case of model III the null hypothesis that the parameters are equal to zero is rejected and the alternative hypothesis that the linear regression coefficients are non-zero is accepted. As a result, models I and II are rejected and model III is accepted. The regression analysis allowed to identify the most significant factors affecting social exclusion of elderly people in the Republic of Moldova.

Using stepwise algorithms to include significant variables and exclude insignificant ones, a regression model of social exclusion of elderly people in the Republic of Moldova was obtained:

$$SIT = 1.57 + 0.09*ED + 0.21*VPP + 0.18*MP - 0.21*PR + 0.25*SN \quad (3)$$

Further testing of the null hypothesis was performed on a set of statistical tests: the R-squared coefficient of determination, the Adjusted R-squared, the F-statistic, the Akaike Information Criterion (AIC), the Schwarz Criterion (SC) and the Durbin-Watson statistic (Gutium, 2020, p. 194).

**Table 4. Statistical testing of regressions**

Statistical tests	$SIT = f(RS, SX, VR, ED, DM, VPP, MP, PR, SN, PS, EV, SPR, ST, AF)$	$SIT = f(ED, VPP, MP, PR, SN)$
R-squared coefficient of determination	0.795323	0.772961
Adjusted coefficient of determination (Adjusted R-squared)	0.751232	0.757363
F-statistic	8.966082	23.91086
Probability (F-statistic)	0.000000	0.000000
Akaike Information Criterion	2.680165	2.629524
Schwarz Criterion	2.921667	2.726124
Durbin-Watson statistic	1.769346	1.796835

Source: Elaborated by the author.

"Log-likelihood" is the indicator that quantifies how good the model developed is, i.e. the higher its value, the better the model (Horvath, Huskova, Kokoszka, 2010).

The  $SIT = f(ED, VPP, MP, PR, SN)$  regression performed best, the coefficients of determination had comparatively higher values, and the Akaike and Schwarz criteria - comparatively lower values.

Fisher statistic and probability (F-statistic) are used to assess the significance of linear regression. According to the obtained results (Table 5), the null hypothesis that all coefficients of both regressions are zero is rejected, and the significance of multifactor linear regression (equation 3) is relatively higher compared to that of simple linear regression (equation 2). Therefore, the best-fit regression model is  $SIT = f(ED, VPP, MP, PR, SN)$ .

After checking the residuals for autocorrelation using the Durbin-Watson statistic test we obtained a value of 1.796835, which shows that autocorrelation occurs and leads to biased estimates of the regression parameters.

Let's test for autocorrelation using the Breusch-Godfrey test. The test is based on the following idea: if there is a correlation between neighbouring observations, then it is natural to expect that in the equation:  $e_t = \rho \times e_{t-1} + v_t$ ,  $t = 1, \dots, n$

where  $e_t$  are the regression residuals obtained by the usual least squares method, the coefficient  $\rho$  will be significantly different from zero.

**Table 5. Breusch-Godfrey test with 2 lags**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.279010	Prob. F(2,199)	0.2806
Obs*R-squared	2.627085	Prob. Chi-Square(2)	0.2689

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 04/14/23 Time: 12:25

Sample: 1 207

Included observations: 207

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.094482	0.559374	-0.168908	0.8660
ED	-0.001821	0.037120	-0.049053	0.9609
VPP	-0.011908	0.072934	-0.163271	0.8705
MP	0.007312	0.061726	0.118453	0.9058
PR	0.012129	0.081568	0.148704	0.8819
SN	0.014489	0.081719	0.177304	0.8594
RESID(-1)	0.094468	0.071725	1.317084	0.1893
RESID(-2)	0.056765	0.072070	0.787630	0.4319
R-squared	0.012691	Mean dependent var	-5.58E-17	
Adjusted R-squared	-0.022038	S.D. dependent var	0.877445	
S.E. of regression	0.887061	Akaike info criterion	2.636075	
Sum squared resid	156.5886	Schwarz criterion	2.764876	
Log likelihood	-264.8338	Hannan-Quinn criter.	2.688161	
F-statistic	0.365431	Durbin-Watson stat	1.971521	
Prob(F-statistic)	0.921462			

Source: Developed by the author in Eviews 9 software.

In our case, lag 2 is Prob. = 0.4319, so the probability of accepting the null hypothesis is greater than 5% of the significance level, so lag 2 is insignificant.

We obtain at a significant level of 5% Prob. = 0.1651, this is greater than 5% of the relevance level (Table 6). So we can accept the null hypothesis of no autocorrelation, i.e. there is no autocorrelation. This is also indicated by the overall significance of the equation using the F-statistic Prob. = 0,1651. Probability of accepting the null hypothesis = 16.51%, i.e. more than 5%. It means that we can state that there is no autocorrelation of random deviations in this model.

**Table 6. Breusch-Godfrey test with 1 lag**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.941344	Prob. F(1,200)	0.1651
Obs*R-squared	1.989975	Prob. Chi-Square(1)	0.1583

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 04/17/23 Time: 16:16

Sample: 1 207

Included observations: 207

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.073319	0.558198	-0.131350	0.8956
ED	-0.002852	0.037062	-0.076953	0.9387
VPP	-0.006072	0.072487	-0.083766	0.9333
MP	0.004213	0.061542	0.068451	0.9455
PR	0.011462	0.081486	0.140662	0.8883
SN	0.008817	0.081324	0.108421	0.9138
RESID(-1)	0.099452	0.071377	1.393321	0.1651
R-squared	0.009613	Mean dependent var	-5.58E-17	
Adjusted R-squared	-0.020098	S.D. dependent var	0.877445	
S.E. of regression	0.886219	Akaike info criterion	2.629526	
Sum squared resid	157.0767	Schwarz criterion	2.742226	
Log likelihood	-265.1559	Hannan-Quinn criter.	2.675101	
F-statistic	0.323557	Durbin-Watson stat	1.995674	
Prob(F-statistic)	0.924129			

Source: Developed by the author in Eviews 9 software.

The next thing to do is to test for heteroscedasticity using White's test, which assumes that the dispersion of regression errors is a quadratic function of factor values.

We see that depending on the value of the probability of accepting the null hypothesis all variables are not statistically significant, since the probability of accepting the null hypothesis is much higher than 0.05 (5%), i.e. the hypothesis can be accepted.

We look at the presence of significance of the regression as a whole, which is greater than 5%.

F-statistic Prob. = 0.2146

We can accept the null hypothesis.

This model has no heteroscedasticity, i.e. the model residuals are homogeneous and have constant dispersion.

**Table 7. Heteroskedasticity test**

Heteroskedasticity Test: White

F-statistic	1.255151	Prob. F(20,186)	0.2146
Obs*R-squared	24.61512	Prob. Chi-Square(20)	0.2166
Scaled explained SS	19.77998	Prob. Chi-Square(20)	0.4718

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 04/14/23 Time: 12:29

Sample: 1 207

Included observations: 207

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.066139	6.534935	0.469192	0.6395
ED^2	-0.002809	0.024268	-0.115765	0.9080
ED*VPP	-0.089986	0.070960	-1.268115	0.2063
ED*MP	0.064262	0.052492	1.224225	0.2224
ED*PR	0.000269	0.076016	0.003540	0.9972
ED*SN	-0.018586	0.053368	-0.348265	0.7280
ED	0.130969	0.522808	0.250511	0.8025
VPP^2	0.006423	0.073885	0.086931	0.9308
VPP*MP	0.121358	0.087539	1.386322	0.1673
VPP*PR	-0.084125	0.166363	-0.505671	0.6137
VPP*SN	-0.094998	0.133568	-0.711235	0.4778
VPP	0.805616	1.093254	0.736898	0.4621
MP^2	-0.051960	0.050641	-1.026036	0.3062
MP*PR	0.253050	0.114628	1.407578	0.1285
MP*SN	0.072653	0.130417	0.557084	0.5781
MP	-1.874455	0.803229	-1.413649	0.1207
PR^2	0.003405	0.060861	0.055948	0.9554
PR*SN	0.009248	0.284151	0.032545	0.9741
PR	-0.551820	1.371682	-0.402294	0.6879
SN^2	-0.033444	0.106050	-0.315358	0.7528
SN	0.283678	1.758684	0.161301	0.8720

Source: Developed by the author in Eviews 9 software.

The variable obtained through this model is compared with the indicators reflected in the scale of criteria that determine the level of social exclusion and depending on this the responsible authorities decide which policies should be promoted to improve the situation of elderly people.

### Conclusions

The multifactor linear regression model of social exclusion of elderly people reflects the quantitative estimation of the size of pension, education level and health status on the material situation of elderly people or the most important problems faced by elderly people. This model is simple and can be used in the practice of public authorities dealing with these problems. The assessment of the impact of the factors in question (endogenous factors such as the level of education, the amount of pre-retirement income and the amount of pension, health status) are those that largely affect the situation of elderly people and require the improvement of public policies. The correlational analysis carried out confirmed the presence



of correlations between the action of impact factors and the problems faced by elderly people, as well as the current state of social exclusion of elderly people.

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## ASPECTS REGARDING THE EFFICIENCY OF PROJECT MANAGEMENT WITHIN AGRICULTURAL ENTERPRISES

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**Abstract:** *Project management facilitates the integration of innovations and emerging technologies into agricultural practices, enabling their testing and implementation to improve the efficiency and competitiveness of the agricultural sector. A crucial part of this process is the constant monitoring and evaluation of progress, using performance indicators and other evaluation tools to identify and solve problems in a timely manner and to adjust strategies in accordance with established objectives. In the context of concerns related to climate change and the conservation of natural resources, the promotion of sustainable agricultural practices is increasingly important, and project management can play a key role in this direction, protecting the environment and promoting the well-being of local communities. For Romania's rural development, it is crucial to optimize the impact of European funds through their proper management, and project management proves to be an essential tool for increasing the efficiency, sustainability and competitiveness of agriculture in the contemporary context.*

**Keywords:** *project management, agricultural enterprises, efficiency.*

**JEL classification:** *M15, O15.*

### 1. Introduction

In the contemporary era, where climate change, population growth and pressure on natural resources are becoming more acute, agriculture is facing unprecedented challenges. In this context, project management becomes an essential tool to deal with the complexity and dynamics of the agricultural sector. Project management in agriculture is a strategic and systematic approach to planning, implementing and monitoring agricultural activities with the aim of achieving precise objectives within a defined timeframe and resources. Its importance is reflected in several crucial aspects. An agricultural project can involve a variety of resources, including land, labor, water, agricultural inputs, etc. Project management allows rigorous planning of these resources so that they are used efficiently and sustainably, avoiding waste and optimizing results. Agriculture is exposed to risks and uncertainties, such as unpredictable weather conditions, market changes or technical problems. By implementing proper project management, these risks can be proactively identified, assessed and managed, reducing their impact on production and profitability.

Project management facilitates the integration of innovations and emerging technologies into agricultural practices. Projects can be designed to test and implement new technologies, cultivation methods or sustainable practices, contributing to improving the efficiency and competitiveness of the agricultural sector. An essential aspect of project management is the constant monitoring and evaluation of progress. Through the use of performance indicators and other evaluation tools, it is possible to follow the evolution of the project in real time, promptly identifying problems and adjusting strategies to achieve the proposed objectives. Sustainable agriculture is becoming increasingly important in the context of concerns related to climate change and the conservation of natural resources. Project management can be used to promote sustainable agricultural practices, protecting the environment and ensuring the well-being of local communities.

## **2. Project management – conceptual framework**

A project is characterized by dedicated resources, by a single point of responsibility, by clear limits within which the resources and results can fit, of a limited duration; the project is a useful way of organizing work; projects do not appear without deliberate intervention;

A deeper analysis in the field allows us to find that several people questioned to define the term "project", at the beginning of training courses in the field of project management, suggested various answers:

- promoting an idea, structuring a series of ideas, agreeing various proposals (action plans);
- to visualize, plan and define the course of a desired action to reach a specific future situation;
- to describe, at a given moment and in a given situation, the process of a change that must be initiated in order to create a new situation at a given moment in the future;
- process that involves the construction of a global program, taking into account the various aspects of a situation, in order to reach another situation;
- a desired, a process, a tool that can be used for its future planning, for establishing goals and objectives; a successful project is first and foremost that project that has achieved its predetermined objectives and that has produced a change for the better in the community where it was implemented.

The use of these standard concepts, tools and documents covering the entire existence of a project is sometimes seen as an "integrated approach" to managing the project cycle.

For a better understanding, we must differentiate between the notion of process and the notion of project. The process represents the normal, day-to-day activities of an organization.

The project represents the activities outside the routine activities, something done in addition to the usual day-to-day work. Of course, in certain fields (construction, scientific research or the development of computer programs), normal, day-to-day work is done on projects.

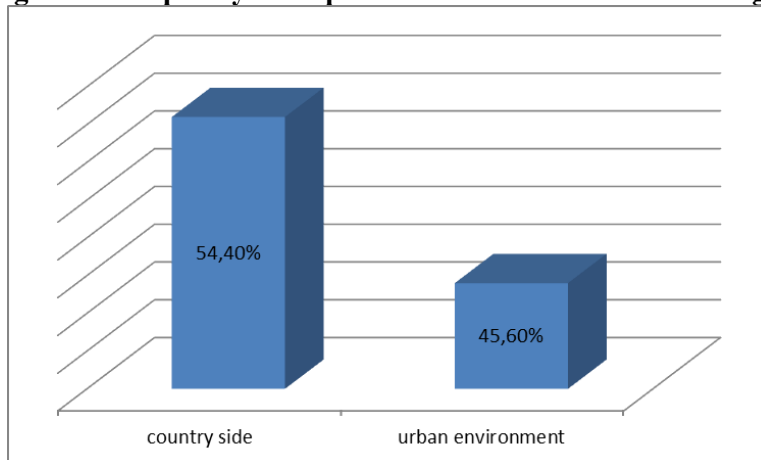
## **3. Research methodology**

This research approach focuses on the impact of project management on the performance of agricultural enterprises. The general objective is based on the thematic-applicative study of project management in order to improve the efficiency of project management at the level of agricultural enterprises. The questionnaire was distributed to 206 respondents.

The results of the study are highlighted in the following graphs.

The question in the questionnaire about the respondents' place of origin shows that 54.4% of respondents come from the rural area and 45.6% from the urban area. (figure 1)

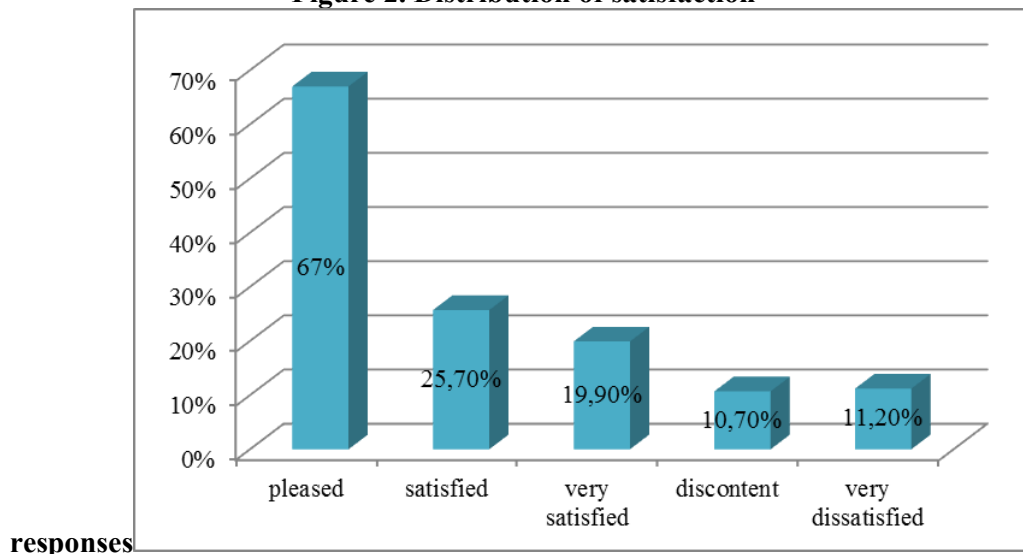
**Figure 1. Frequency of responses for the environment of origin**



*Source: authored based on data interpretation*

Regarding the degree of satisfaction of the respondents in relation to financial-banking institutions for supporting projects with non-reimbursable financing, the majority of 67% declare themselves satisfied, while 25.7% are satisfied, 19.9% are very satisfied, 10.7% are dissatisfied and 11.2% declare themselves very dissatisfied. (figure 2)

**Figure 2. Distribution of satisfaction**



responses

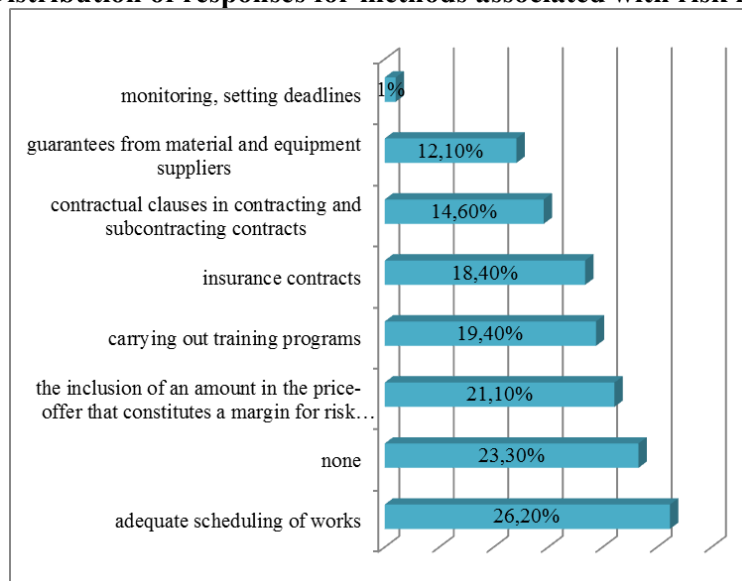
*Source: authored based on data interpretation*

Regarding the methods of preventing, reducing or eliminating the risks associated with the projects used in the organization of which the respondents are a part, the results of the multiple variants demonstrate the following:

- 26.2% chose the appropriate scheduling of the works
- 23.3% chose the option "none"
- 21.1% opted for the inclusion of an amount in the offer price that would constitute a margin for risk coverage
- 19.4% ticked the realization of training programs
- 18.4% opted for insurance contracts

- 14.6% chose contractual clauses in joint venture and subcontract contracts
- 12.1% checked guarantees from material and equipment suppliers
- 1% opted for: monitoring, setting deadlines

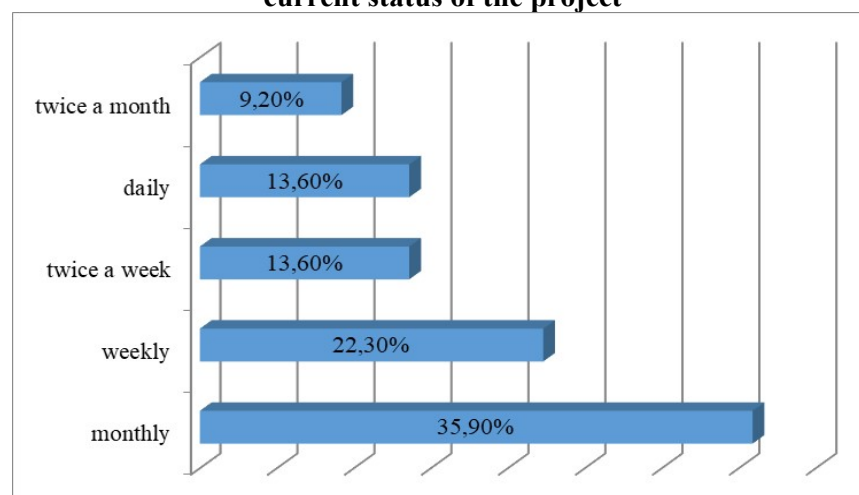
**Figure 3. Distribution of responses for methods associated with risk management**



*Source: authored based on data interpretation*

The distribution of responses for the frequency of preparing reports on the current status of the project highlights the following aspects: a majority percentage 35.9% declares that they prepare this report monthly, 22.3% weekly, 13.6% twice a week, 13.6% daily, 9.2% twice a month, are recorded in small percentages and the variants: annually or never. (figure 4)

**Figure 4. Distribution of responses for the frequency of preparing reports on the current status of the project**

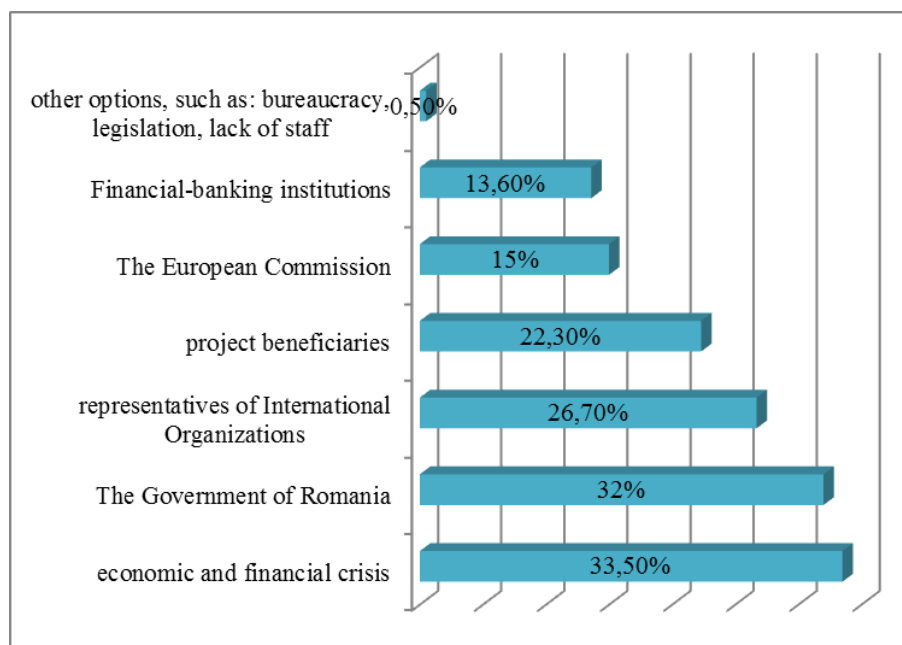


*Source: authored based on data interpretation*

Regarding the respondents' opinions regarding the factors that determined the low absorption rate of the Structural and Cohesion Funds, they reflect the following situation (figure 5):

- 33.5% opted for the economic and financial crisis
- 32% chose the Government of Romania
- 26.7% consider the representatives of International Organizations as a factor of influence
- 22.3% opted for the version of project beneficiaries
- 15% chose the European Commission
- 13.6% chose financial-banking institutions
- 0.5% is for other options, such as: bureaucracy, legislation, lack of staff

**Figure 5. Distribution of responses for the determinants of the low rate of absorption of Structural and Cohesion Funds**



*Source: authored based on data interpretation*

Through this scientific approach, it is considered appropriate to access European funds and the initiative of various categories of beneficiaries who want to modernize their agricultural holdings, increase the size of their agricultural holdings and become competitive on the market by accessing European funds intended for this sector must be encouraged.

#### 4. Concluzii

Great project management is about much more than keeping the iron triangle of project management under control: delivering on time, budget and project scope, because it unites clients and teams, creates a vision for a successful project, and it gets everyone on the same page with what it takes to stay on track for success. When projects are properly managed, there is a positive impact that reverberates beyond the delivery of "stuff". Without proper project management, teams and clients are exposed to chaotic management, unclear objectives, lack of resources, unrealistic planning, high risk, project deliverables poor quality,

over-budget and late-delivered projects. Excellent project management matters in achieving performance because well-trained project managers deliver success.

Project management creates and enables teams to be motivated, to realize that their work matters. And that skilled project management team ensures that the right things are delivered, things that deliver a real return on investment and make customers happy

Every organization has strategic objectives, and projects promote these objectives. Project management is important because part of the specific duties is to ensure that there is rigor in the correct design of projects so that they fit well within the broader context of our client's strategic frameworks. Good project management ensures that the objectives projects align closely with strategic business objectives. In identifying a solid business case, particularly in agriculture, and being methodical about calculating ROI, project management can help ensure that the right thing is delivered, which will provide real value. Of course, as projects progress, risks may arise that turn into problems or even change the business strategy. But a project manager will ensure that the project is part of that realignment. Projects that veer off course or don't adapt to business needs can end up being costly and/or useless.

Project management is important because it brings leadership and direction to projects. Without project management, a team can be like a rudderless boat, moving but without direction, control or purpose. Leadership enables team members to do their best work. Project management provides leadership and vision, motivation, removing obstacles, coaching and inspiring the team to do their best work.

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## BIG DATA'S ECONOMIC IMPACT FOR POLICY MAKING: THE WAY FORWARD?

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**Abstract:** *This article considers big data's impact on business and policy, aiming to understand challenges, opportunities as well as the limitations of the current analysis framework. The study focuses on big data and the analysis of its' usage in the framework of both public policy and private sector. Similarly to other goods with dual usage, big data is considered both as an opportunity and a challenge, due to implied sectors in this respect, i.e., the economic and political ones. The paper searches for consistency in between economics and politics via big data usage and integration, especially as the state-conducted policy making attempts to respond to private sector needs, trying also to mimic the performance management styles. Simultaneously, private companies have to comply with rules and regulations. The conclusions outline the resistance in big data usage within the decision-making process, as result of human willingness or lack of correlations.*

**Keywords:** *Big data, economic policy, management practice.*

**JEL Classification:** *O33.*

### 1. Introduction

Currently, the knowledge-based economy is centered around the usage of big data and there is an entire environment that uses big data and big data analysis for financial and non-financial purposes. Despite the sizeable potential of *Big data*, it needs further conceptualization as well as its usage is not always very clear, especially as it requires more advanced technological usage. First, a survey of the literature review is presented in search of a definition, area of research and future trends. Secondly, a check up on consistency between big data and economics and politics will be done, as opposed to more traditional ways of operating in these industries. In effect, the research question guiding the arguments is: *Is there any connection between greater intensity of Big Data and Big data Analysis into policy correlated with a larger BD&BA decision making based process?*

The importance in answering the research question is to give a hint of academic and professional studies on big data usage and impact on decision makers as well as on certain industries like politics and economics with an impact to society at large. Further on, the article is structured as follows: the literature review will frame the understanding of what big data is, how it can be used, domains of applicability. The next two parts are more specific, the first one addressing big data and economics looking at economic value, economic and managerial performances. The last part will look at big data into economic policy and how big data challenges and changes the way policy is made, how big data feeds-in regulatory requirements, and comparing academic opinions with professional studies. The last section is reserved to the conclusions, as a summarization of arguments in the and answering of the two questions under the considered study.



## 2. Literature review

It is difficult to encompass a comprehensive literature review, in the field of big data, due to the complexity of the domain covering a full range of different subjects: computer science, security, economics, politics, sociology. Of course, they can all be comprised as numbers and used in statistics, yet they disclose a different aspect of usage of big data. Thereby, Günther, et al. (2017) identifies a big data definition put forward by Laney (2001): “Big data can be defined based on large volumes of extensively varied data that are generated, captured, and processed at high velocity.” Another characterization rather than a definition is put forward by Jarmin and O’Hara (2016): “by “big data,” we mean data generated as a consequence of government, business, or citizen activities. Big data is often said to be characterized by four Vs: volume, velocity, variety, and veracity. “

The articles identify further social value, economic value and policy value of big data, and also considers the literature review on algorithms, which is generally under looked at especially by social scientists. Despite this perspective, when reduced to its very nature big data is stripped off any direction and is left over with algorithmic intelligence only. Algorithms do not necessarily follow a fix pattern of data structuring as it happens with traditional software but may follow a pre-coded path and construct on in by using machine learning for strategic decision making, to be used by humans which drives them in a direction or another.

In practical terms big data’s data use for instance information collected from traffic cameras in real time monitorization and inform relevant stakeholder in terms of the decision making, or even more sophisticated aspects like AI with noise sensors identifying people carrying guns and shutting them and hence a map of criminality can be developed more accurately (Jarmin and O’Hara, 2016).

Next, this article concentrates only on the economics and policy literature and trying to connect the two to understand if big data economics has any effect on policy and the other way round, as a shift or paradigm, which is wanted in society, as some scholars suggest when they argue that public sectors mimics the private sector already and that we even need a different future of basic sciences like accounting (Haslam, et al., 2017; Haslam et al., 2019).

## 3. Big data and economics

A study by Manyika, et al (2011) estimates the ability of big data economics to generate, on average, revenues of about 3 Tn USD annually, out of which about the half in the USA. Their variables are based on consumers, and in an interesting fashion they monetize on time spent in traffic (jams), better supply and demand matches, life quality, etc. On the other hand, a study that examines the usage of big data for companies, (Brynjolfsson, Hitt and Kim, 2011) discovers a 5-6% growth in return on equity and market value due to big data being put at work. This happens in practice as big data analysis discloses useful statistics, cutting costs, especially for smaller companies that adapt themselves and make use of new types of information in decision making.

Pugna, et al. (2019) links Big Data with performance management from two sides: firstly, how willingly are managers to implement big data in their companies and how willingly are managers to trust big data analysis into influencing their decision-making process, leading to what came to be known as “data-driven decision-making approach – DDD”. Altogether, big data can disclose problems from inside the organization in qualitative and quantitative methods but can show a different view on the markets as well.

A survey done by KPMG on 400 US based CEOs concluded that Big Data and Big Data Analysis (BD&BA) coupled together generally helps in finding new customers,

managing risks, help in designing new products and create new organizational strategies. About half of the CEOs agreed that people are the problem in implementing BD&BA which automatically comes with a risk of disruption and new needed skills for making use of predictive forecasting, enterprise resource planning (ERP) and customer relationship management (CRM). Digitalization in a large sense relates to strengthening a collaborative environment, support technology adaption by the public service and private sectors, building a new set of skills connected to life learning and encourage startups development and contracting brain drain. (Trasca, et al., 2019a). However, most CEOs show low trust in new evidence and even more, they fear a reputational risk. (KMPG, 2016). Independently from this study, McKinsey's research observed little connection between these new types of information and how successful it is (McKinsey, 2018). Generally, BD&BA is perceived to relate to improved economic performance, especially as in the USA companies look rather eager to on big data initiatives and innovations: 'BD applications and analytics are projected to grow from US\$5.3Bn in 2018 to US\$19.4Bn in 2026 worldwide. Businesses using BD will see US\$430 billion in productivity benefits over their competition (not using such data) by 2020' (Pugna, et. al, 2019:4).

In a practical way, as a potential example, big data can be used in creating an EU Insurance Scheme. Alongside with the political will and funds available, the solution is found in big data due to its capacity to identify the right strategy of understanding risks and the balance in between production and the opposite effect of unemployment in the EU institutional architecture. The idea of a unique European unemployment scheme exists since 1975 and it went along with the Single Market, a centralized fiscal EU policy, social mobility policy and a balanced redistribution of wealth inside the European Union, especially in the euro-zone. The methods used up to now were statistical and they manage to prove that the average benefits of such a scheme are lower than the standard deviation. Other scholars suggest that if we compute and add many adjustments and aid funds, while also considering the natural unemployment scheme, such a unemployment benefits scheme will be more advantageous in terms of the production gap for more development and less developed states and aggregated big data may reveal this in the following years, yet more monitoring is needed (Trasca, et al., 2019b).

#### **4. Big data and policy**

As a general feeling, policy makers see more challenges than opportunities in big data usage, though recognizing the added value to public policy. Azzone (2018) sees public policy in connected with public good of individuals and of society, by its capacity of solving problems. As opposed to traditional public service where utilitarianism was used, the good of many is a standardized general form, the novelty with which big data in public services comes is multiple. First, big data comes with "completeness" meaning that all voices are heard into society, and weighted appropriately, not necessarily favoring the 'average user'. Secondly, big data allow precision policy by a better segmentation and individualization of needs for categories and sub-categories, like it happened for instance in Italy with differentiate support for house owners accordingly to different vulnerability risk and possibility of earthquakes in different regions. Out of 18 million buildings in Italy, due to better use of data 550,000 were identified as risky and addressed appropriately by better policy.

BD&BA can be used in identifying and anticipating trends that can be used in socio-economy policing. Timely warnings and weak signals analyzed even from social media or on how micro-companies are adapting to the economic reality in valuable insight in addressing

challenges in a future proof manner. The question is whether the government is a greater user of big data than the private sector and who comes first in a race where players are co-dependent. Public policy should encourage via laws certain practices and cut down on others by exercising its coercive powers with respect to democratic values. The public sector also has the capacity to create best practice in a certain industry as well as create bottom-up self-regulation.

Currently the governmental cloud as a big subject in the EU and big data infrastructures always has been. Big data infrastructure is a burden for electricity consumption, and for data stewardship, involving technical networks, law – like privacy, and certain institutions willingly to access and know more about citizens with suspicious activities, even though are not necessarily intitled to. In this sense, a system of records is necessary to be kept and, in this way, big data can even advance. Honest statistics as Jarmin and O'Hara (2016) argue are unlocking great potential due to safe outputs. Human capital may be more tended to creatively work on data and hide under various methodologies, its accountability being loosen. Big data tools will provide better coordination via linkages, integrated and smart analysis, in a cause -effect way.

OECD (2021) launched a study Artificial Intelligence, Machine Learning and Big Data in Finance. The study is made by a supra-state organization analyzing financial firms and trying to explain them how to become more efficient by presenting a macro picture of the financial environment, yet not forgetting to mention advantages to customers/citizens in the most inclusive way. As governments tend to have a moral approach, OECD rise the issue of pro-cyclicality and system risks in the markets and policy, given the use of AI and big data are at the beginning, have a „dynamic adaptability and a level of autonomy” acting at feeding in policy process and big data, and acting also at micro economic level by providing and analyzing targeted data, optimizing businesses processes, etc.

## 5. Conclusions

Considering a *prosumeristic* approach, BD&BA industry is currently estimated at USD 3Tn annually. It is difficult to separate between a typical productions approach and a consumer's approach as big data triggers a shift in the economic paradigm as well as the profile of the work force, whether white or blue collar.

Literature review presenting opposing view on BD&BA, which was expected, as some markets are fast adaptors like the US, while other developed or developing markets are more traditional. Surprisingly, even in the US, the problem was not perceived big data or artificial intelligence as such, yet the human factor mastering it.

When we come into the dichotomy of big data's impact on politics and economy, big data aggregates data and their connections, generating new types of data for human decision-making factor. The OECD's report title stands as an example of this practice, while OECD is a supra-statal organization, explaining the use of machine learning and artificial intelligence in big data on finance, point a trend, where all data is gathered and combined in new ways for a more intense use. Apart from the human nature factor that is sometimes reluctant to make use of big data as it is rather novel and potentially risky, yet not necessarily unreliable, no other critics were identified to serve the purpose of this article.

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## COMMUNICATION STRATEGIES AND EFFICIENCY IN THE CONTEXT OF ORGANIZATIONAL CHANGE

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**Abstract:** *Communication plays a key role in effective public relations. Communication, in the modern sense of management, is a vital component of the management system of any organization. Managerial communication, as a basic tool of the manager, it is a philosophy of the manager and not a mechanical action. The strategic resources of any organization become information, knowledge and creativity. Managerial communication is related to management functions, communication functions and organizational culture. The purpose of managerial communication is to achieve a correct, relevant and efficient information flow on the horizontal and vertical of the organizational structure. The communication is made according to certain professional, ethical and moral norms that ensure the stability and functionality of the organization.*

**Keywords:** *communication, efficiency, organizational change.*

**JEL Classification:** *M12, M14, M54.*

### 1. Introduction

Communication plays a key role in effective public relations. Communication, in the modern sense of management, is a vital component of the management system of any organization. Two-way communication between both parties is essential and information must flow in the desired form between the organization and the public. The receiver must understand what the sender intends to communicate for effective public relations. Recipients (public, target audience, stakeholders, employees, investors) must clearly understand the sender's message. (organization in this case).

Managerial communication is a form of interpersonal communication, a basic tool of the manager, with which he can exercise his managerial duties: planning, organizing, motivating-coaching, coordination, control-evaluation and achievement of proposed objectives. Communication thus becomes a manager's philosophy and not a mechanical action. The strategic resources of any organization become information, knowledge and creativity. Why does a manager communicate? Managerial communication is related to management functions, communication functions and organizational culture. The purpose of managerial communication is to achieve a correct, relevant and efficient information flow on the horizontal and vertical of the organizational structure. The communication is made according to certain professional, ethical and moral norms that ensure the stability and functionality of the organization.

Intercultural communication at the company level is an intensely researched aspect at present, especially due to the multitude of types and particularities that it presents.

Thus, we meet people who have a direct, concise and clear communication style, who approach the discussions openly, but also people who communicate mainly bypass, indirectly, who use nuances and implications, who are more hesitant. There are also differences between the sexes or between different age groups, belonging to a certain culture, in terms of communication. And the list goes on.

### 2. Multiculturalism în organizational communication

The theme of multiculturalism considers, first of all, the attempt to settle these cultural clashes, as well as the capitalization of the enormous potential that diversity can ensure in order to develop an organization. Currently, there is even talk of a new profession, that of manager of corporate diversity.

But in order for a multicultural organization to function properly, first and foremost, its members must communicate properly.

Therefore, in the following, I will describe the main characteristics of organizational communication and its particularities in a multicultural context.

Communication is an aspect of reality that offers a multitude of possibilities in the social and organizational context, it having an extremely important role in people's lives.

The idea that communication is an essential element in a person's individual and social existence is widely accepted in the community of psychologists, sociologists and anthropologists. In some scientific circles, it is considered as a sociogenetic factor, without which one can not talk about the existence of human society. This is because society is a system made up of individuals and groups that communicate with each other, and as a result, one can speak, in the end, even of an approach of society from the point of view of communication theories.

Specifically, one cannot imagine a group life and the development of interpersonal relationships in the absence of communication. The various forms of organization of social life remain meaningless if communication is not involved, it is considered a lubricant that acts between different mechanisms of enterprises.

For the organizational environment and its different contexts, communication is what ensures its cohesion and consensus, just as, in some situations, it can determine its dissolution, by dividing the members of the organization. Communication is the most important link in the organizational link, its strength or weakness depending, to a large extent, the strength or weakness of a company. And, for this reason, I will focus below on the major issues involved in organizational communication.

Organizational communication has long been an attractive topic of research. Starting from the classical theories of communication and continuing with the neoclassical and then modern ones, there is practically no specialist who has not approached, from one perspective or another, this concept.

From the beginning of the studies on organizational communication, specialists have been concerned with hierarchical communication within companies, how information is transmitted horizontally and vertically, between employees and between bosses and employees. The study of the way in which employees communicate with each other determined the emergence of a new research perspective - the more detailed study of informal communication.

Modern theories take a non-integrative perspective in approaching communication, which can be extended to the organization as a whole. In this context, there is a growing awareness of the role of external and environmental factors, especially technological ones), but also the need to correlate them with psychological and social phenomena.

### **3. New strategies in organizational changes**

Changes in the environment in which an organization operates also lead to other actions, such as redesigning internal activity, introducing new strategies, together with the whole set of communication relationships and also building a new organizational culture. The need to restructure and reorganize a company is generally seen by employees as a stressor and frustrator. Therefore, various information that creates panic (in the form of rumors)

begins to circulate on informal communication channels, which undoubtedly and perhaps affects the way the organization works. The fact that you can control the entire flow of information in a company is an illusion. Instead, it can be controlled to a certain extent by the official transmission of truthful, accurate and relevant information about the changes that will take place at the organizational level. These messages should also always be accompanied by the idea that change is not accompanied, as most tend to believe, by negative consequences, and therefore by negative feedback from employees, that change within an organization is it is natural, especially in the competitive market, that the restructuring of a company does not entail penalties and dismissals, that it is an absolutely necessary thing in the survival of an organization.

Both types of communication, both formal and informal, must emphasize that change is a beneficial action for everyone, both for the organization as a whole and for the employees. If this message is conveyed in this form, the result will be a considerable reduction in tensions within organizations, a more relaxed adoption of the changes that need to be made in terms of organizational culture and climate, and employee loyalty to policies and the strategies the company has chosen. Last but not least, in this way, positive messages will arrive in the external environment. This last aspect is particularly important because, coming on an unofficial channel, but which confirms the public position of the organization, the message sent about the positive changes within the organization becomes much more credible.

In the same vein, it is very important to specify that employees must know exactly the situation and believe in it, in order to be able to transmit to the outside world positive information about the company in which they work.

The literature considers that the mission of organizational communication refers to:

- ensuring that employees have understood and support the changes that will take place within the organization;
- forming the organizational culture and influencing it in the process of adapting to changes in the environment;
- influencing the attitudes and behaviors of employees regarding the quality of products and services offered and customers.

But such a communication strategy can only be achieved if a participatory management style is adopted. On the contrary, an authoritarian managerial style, which does not encourage participation and does not provide feedback, which promotes a rigid type of relationship between departments and levels of the organization, can not have enough resources to change the mindsets of its employees, which is fundamental. in building a high quality organizational culture.

And in order to achieve this goal, it is necessary that it meets certain conditions:

- to be made permanently, without interruptions and to use all the supports that are at the level of the organization; when there is a need to redesign an organization, there is no question of intensive communication - this redesign only needs to be announced, explained and then introduced through communication;
- the communication must be clear and simple, in the sense that all the basic concepts and the motivation for redesign must be expressed in the understanding of all employees;
- be dramatic;
- to act especially on an emotional level, less on a cognitive level;
- suggest both the importance and urgency of the redesign process.

In parallel, external communication must convey to the target audiences the same positive image of change within the organization, especially in this case, by highlighting the



positive values that this change has for both beneficiaries (suppliers, customers, investors) and for the general public, the media, the community at large.

Therefore, organized communication involves agreeing with the objectives proposed by the organization, which can be achieved by achieving the optimal dosage between formal and informal communication, between external and internal communication. It should also be borne in mind that communication problems that inevitably arise in any organization cannot be solved using a single network or in a single way to react. And, strange as it may seem, identifying as clearly as possible the objectives and needs of an organization is in the field of communication, not marketing. Communication is also the one that facilitates the understanding of the psychological and sociological aspects of the organization's functioning, the achievement of coherence and concentration, the reconsideration of the techniques used, which are in fact the major objectives of communication as a process.

A company that wants to be a communicator must have certain characteristics, as follows:

- be open so that it can communicate with the external environment, in which the transmission and reception of messages are interactive;
- be evolving, promote innovation and try to eliminate routine;
- to be explicitly oriented towards the finality, in order to create a framework as adequate as possible for the realization of the formal communication;
- to have flexibility, in order to ensure the best possible dosage between formal and informal communication;
- to hold employees accountable, in order to avoid possible artificial accumulations of power, by storing information;
- to have a dynamic character, so that it can create, through information and specialization, then communication, the internal potential of the organization and the means by which reality can be transformed.

As such, a communicating organization cannot be a bureaucratic one, because it involves an organization of work that promotes team spirit, the involvement of all employees and a participatory management.

So, when talking about a communicating organization, it is necessary to consider a number of essential elements of organizational restructuring.

First of all, the fact that the restructuring has an organized character, which must include the diagnosis of the problem in the organization, the elaboration of a strategic plan, but also the mobilization of all the resources necessary for its implementation. This restructuring must take place at the level of the entire organization and its objectives must be promoted by the decision-makers, who also manage the effects of the restructuring. Another aspect is related to the restructuring programs, which must aim at healing and increasing the efficiency of the organization. Last but not least, the changes that take place within the organization must be the result of deliberate managerial actions, and the procedures that are used can include a wide range of actions, from technical and technological changes to specialization and retraining programs for employees.

Communication plays a key role in effective public relations. Communication, in the modern sense of management, is a vital component of the management system of any organization. Two-way communication between both parties is essential and information must flow in the desired form between the organization and the public. The receiver must understand what the sender intends to communicate for effective public relations. Recipients (public, target audience, stakeholders, employees, investors) must clearly understand the sender's message. (organization in this case).

Managerial communication, as a basic tool of the manager, it is a philosophy of the manager and not a mechanical action. The strategic resources of any organization become information, knowledge and creativity. Managerial communication is related to management functions, communication functions and organizational culture. The purpose of managerial communication is to achieve a correct, relevant and efficient information flow on the horizontal and vertical of the organizational structure. The communication is made according to certain professional, ethical and moral norms that ensure the stability and functionality of the organization.

Frank Luntz, one of the most well-known communication professionals who elaborates the speeches of great politicians, wrote the book *Words That Work: It's Not What You Say, It's What People Hear*, which contains the results of studies and surveys conducted in this direction.

#### 4. Conclusions

Finally, here are some suggestions to improve communication, to be as effective as possible:

1. Simple: Use simple words. Do not use lesser known, complicated words or twisted expressions, because you risk not having misunderstood or misinterpreted and thus the goal of communication is not met.

2. Short: Do not use long and complex sentences. Short sentences are best imprinted in memory and are the easiest to understand.

3. Giving credibility: Your words must be sincere, credible. Lincoln said you can't fool everyone all the time. Your words must not contradict your deeds, because then they lose their value and communication has failed. The words you use become part of you, and you become the words you use.

4. Considering the nonverbal message: The tone in which you speak and the way you express yourself are as important as the words themselves.

5. Giving explanations: The more you explain why you say certain things, the better you will be understood.

Everyone has the right to have their own ideas, opinions, feelings and also the right to express them. They will not bother anyone as long as they are communicated effectively.

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## ROMANIA'S EXTERNAL DEFICIT. INTERNAL CONDITIONS

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**Abstract:** Starting with 1990, the year at the beginning of the transition to the market economy, and up to the present moment, regardless of the dynamics of economic growth, Romania has constantly recorded external deficits. There are a large number of internal and external factors that directly or indirectly influence the level and evolution of a country's external deficit, among the most important being the evolution of the gross domestic product, trade relations including exports and imports, the level of prices for raw materials, oil, gas and energy, internal and external inflation, the budget deficit, the level of public and private debt, foreign direct investments, remittances, etc. An increased external deficit in the long term can become a big problem because it is transferred to the external debt of the state and from a certain level and under certain conditions it can become unsustainable. The current work aims to analyze the specific internal conditions at the level of 2023 that influence the evolution of Romania's external deficit.

**Keywords:** current account, trade balance.

**JEL Classification:** E60, H60.

### 1. Introduction

Apart from the external constraints arising from the economic and political developments worldwide, but also at the level of the European Union, there are certain internal conditions specific to Romania that are challenges for finding the best methods of avoiding certain risks and making the most of existing opportunities.

The main characteristics of Romania's economic situation at the beginning of 2023, namely: Persistent budget deficit; Current account deficit, among the largest among EU countries, relative to GDP; Smaller exports than imports, exports of products with little added value; Increased costs for energy, methane gas, raw materials and materials; Very high inflation rate, one of the highest in the European Union; External debt approaching the 50% threshold, but increasing; Debt service growing, among the highest at European level; Foreign direct investments that have reached the 100 billion euro mark; Romania annually receives capital from the European Union in the form of structural funds to which are added the amounts received through the "PNRR - National Recovery and Resilience Plan".

All these factors have a direct or indirect influence on the current account balance and the external balance of Romania.

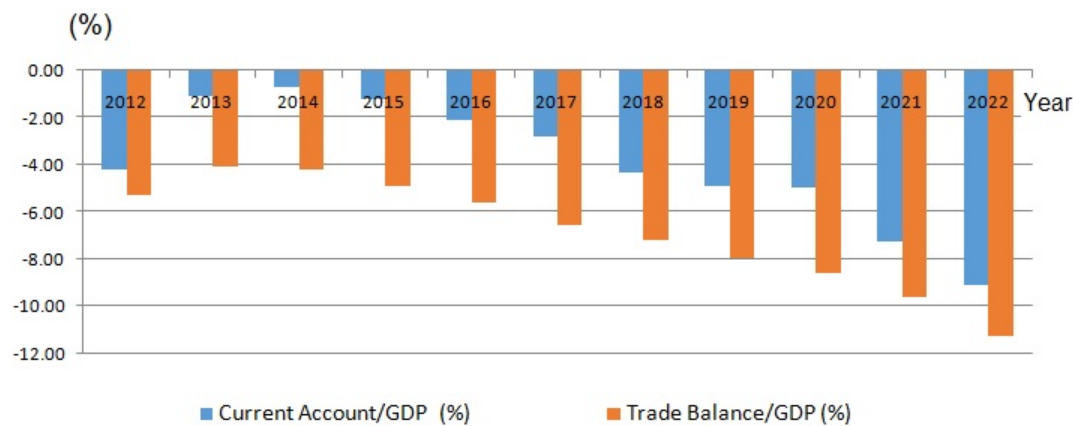
### 2. Findings

The chronic budget deficit is due to the inadequacy of budget expenditures to the level of budget revenue collections. On the one hand, Romania is a country with a low level of taxation at the European level (this is in accordance with the degree of economic development, developed countries can afford a high level of taxation), and on the other hand there is the lingering problem of the level of tax collection. At the same time, the expenses are higher than we can afford (not consistent with the available income). Governments have permanently favored spending on salaries, pensions, social benefits to the detriment of public investments in infrastructure. This is a double-edged sword. If infrastructure investment can boost economic growth, higher wages lead to economic growth through consumption. This type of development is not the most economically sound and cannot work indefinitely. At the same time, the increased salaries from the budget system also raised salaries from the private sector, reducing the productivity and profitability of companies. It is known that the salary

difference between the countries of Eastern Europe and those of the West is one of the factors that attract foreign investments. (A positive effect of the increase in domestic wages compared to existing wages in developed countries was the reduction of the loss of labor force that emigrates for economic reasons. It is known that the domestic labor market cannot supply labor force to the existing demand neither in structure nor in level of At the national level, there is a lack of labor force, the aging of the population and the need to bring in labor force with a certain qualification from abroad.

When the growing domestic demand cannot be satisfied by products from the domestic market, the demand for imported products increases.

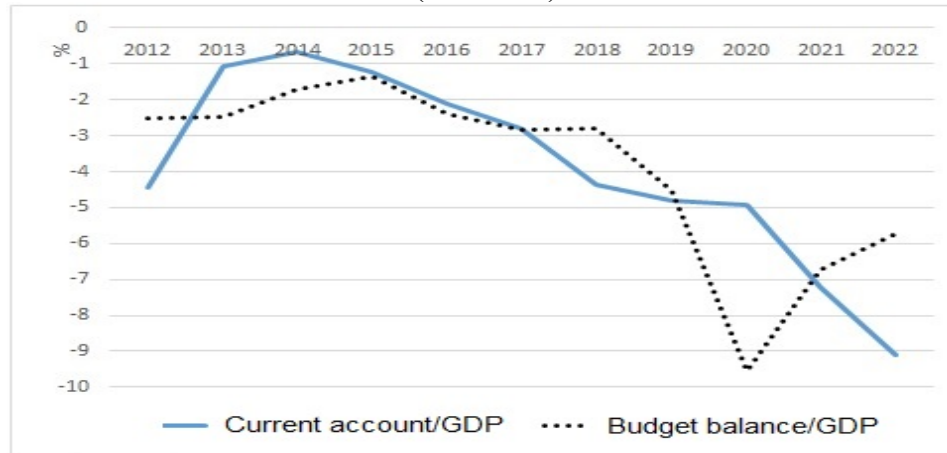
Chart no.1. The evolution of the trade balance and the current account deficit in Romania (% in GDP)



*Source: BNR data and the author' calculations*

As can be seen from graph no. 1, the trade balance and the current account have registered a constant deficit throughout the last ten years, with lower values in the first years, especially due to the budgetary restrictions imposed by the IMF (especially the 25% reduction in wages and the increase of VAT), but in constant growth from 2014 to 2022, due to the increase in budget expenditures and salaries.

Chart no. 2. The evolution of the budget balance and the current account deficit in Romania  
(% in GDP)



Source: BNR data and the author's calculations

The twin deficits. Romania has a large current account deficit, which is on an almost continuously increasing trend, budget deficit with a worsening trend in recent years (caused by expenses that cannot yet be reduced and insufficiently collected revenues). From graph no. 2 it can be seen that the two indicators have a similar trend in most years of the analyzed period, they are in a relationship of positive interdependence.

The budget deficit is covered with loans. When loans are taken from the domestic market, the savings in the banks diminish, and the amounts left at the disposal of the firms are smaller, with more restrictive conditions and higher interest rates. If the amounts collected from the domestic market are not sufficient, external loans are used. Most of the time, external loans are more difficult to obtain due to the conditions imposed by the lenders, the risk aversion of the lenders, and the greater competition for obtaining the necessary funds. Part of the budget deficit is transferred to the current account deficit, according to the twin deficit equation.

Chart no. 3. The evolution of the current account deficit, foreign direct investments and new external loans in Romania (2012-2022)



Source: BNR data and the author's calculations

As can be seen from graph no. 3, the current account deficit has registered a constant deficit throughout the last ten years. This deficit must be covered from different sources, especially with foreign direct investments, remittances from those who went to work abroad and external loans. Obviously, foreign direct investments are preferable because through their effect, goods and services are created that lead to an increase in exports and a decrease in imports in the future, thus balancing the trade balance in the future. Remittances had their place in supporting domestic consumption and consumption-based economic growth, with billions of euros being sent from abroad year after year. However, as the current account deficit is increasing year by year and is not covered by direct foreign investments and remittances, the state is forced to borrow more and more from abroad, creating a large, rapidly growing external debt with high interest from the cause of the world situation and the way the country's creditworthiness is assessed by external creditors through the ratings given in the country rating by the major rating agencies. This external debt is increasingly difficult to bear, and in the long term there is a risk of becoming unsustainable, and its rollover from year to year becomes difficult due to the increase in the interest paid.

The trade balance is in deficit, the value of exports being greater than the value of imports of goods, even if exports of services exceed imports. The problem is the structure of domestic production of goods that fails to cover domestic demand. At the same time, exports do not contain goods with high added value, goods that incorporate a high technological level.

There are also problems of not exploiting the internal potential, for example, the agricultural potential is not exploited through intensive agriculture and on large areas (small quantities are difficult to contract for the distribution chains or exporters), so that although Romania has obvious competitive advantages (areas of vast land, climate, soil quality, hydrographic network, etc.), agricultural products contribute to the current account deficit. A somewhat similar situation is registered in the case of tourism. Due to the inadequacy of

current tourism requirements, Romania is wasting its tourist potential, so that year after year the sums spent by Romanians in other countries for tourism purposes are considerably higher than those left by foreign tourists in Romania.

Following the war in Ukraine, the prices of energy and methane gas, but also of raw materials and materials, increased significantly. This determined worldwide and in Romania an increase in prices, which was transmitted to the economy in all fields, in certain cases certain companies dependent on imported raw materials had to temporarily or permanently stop their activity, (see the case of Azomures, a large producer of agricultural fertilizers, which temporarily stopped the activity due to the increased price of methane gas, the fertilizers needed domestically being then imported at much higher prices). The increased prices for methane gas, oil, mineral oils and other raw materials put even more pressure on the current account. Governments (including the Romanian one) have decided to subsidize the price of electricity and methane gas, creating additional pressure on the state budget. The increase in the price of goods and services has led to the need for wage increases in both the public and private sectors to keep pace with inflation. Increased incomes generated additional demand which in turn contributed to higher inflation. The BNR acted simultaneously with the other national banks of the EU countries, by increasing the reference interest rate, which tightened domestic lending, and since the middle of the previous year the inflation rate has been on a downward slope.

The proximity of the conflict in Ukraine also has influences on obtaining the necessary external financing, by tightening credit conditions as a result of the increase in risk aversion of investors.

A high inflation rate always benefits the borrower but only for a short period of time by eroding the value of the loan. Thus, the state is also advantaged by internal and external inflation in eroding the value of the amounts owed. But subsequent loans will be contracted at increased interest rates that will make it difficult to repay them. Romania's debt level has already reached almost 50%, (this being a psychological threshold, an alarming threshold), and the interest rate at which Romania borrows is very high, the highest in the European Union next to Hungary. Interest payments for the return of loans already contracted, but also for new loans needed to cover the current account deficit or the budget deficit, at increased interest rates could become burdensome for the country's budget.

The current account deficit is also deepened by military spending which must reach 2.5% of GDP according to the commitments assumed. Because the military industry has shrunk with the loss of external markets with traditional partners after 1990, and with the entry into NATO the interoperability needs made us have to import military equipment from NATO partners, which made the military industry local to disappear completely. Very little of the military equipment imports were conditioned by offset work (maintenance and repair) in the country.

The current account deficit is also covered by the remittances of those who have gone to work abroad and have families in the country, direct foreign investments but also the funds received from the European Union in the form of structural funds or through PNRR - the National Restructuring and Resilience Plan. Foreign direct investments, although they have reached the value of 100 billion euros as a stock, are small compared to those of other countries in Eastern Europe (Czech Republic, Hungary, Poland), the reasons why we fail to bring more investors are various: lack of infrastructure, bureaucracy, the thick legislative framework and frequent changes to which the lack of manpower in the necessary structure and specialization is added more recently. It should be added that compared to the mentioned countries, we have a time gap from the time of accession to the European Union.



### 3. Conclusions

The current account deficit is a chronic problem of the Romanian economy, which has worsened in recent years amid global crises. Even if some of the existing economic conditions worldwide have improved, (we are referring in particular to the drop in the price of raw materials, oil, natural gas and energy and to the sustained economic growth in the USA but also at the global level), Romania will it had a current account deficit in the following years, which will gradually decrease.

In order to achieve this objective, it is necessary for the government to take a package of measures that include budget policies (increasing budget revenues by increasing collection, reducing budget expenses, by making the budget apparatus more efficient and reducing its expenses, orienting expenses towards infrastructure investments which would attract as much foreign direct investment as possible, (it is known that the lack of a developed road and railway infrastructure has often led to billions of investments being directed to other neighboring countries with modern infrastructure), or investments through which the untapped potential of the country is brought to fruition in certain areas such as tourism or agriculture), monetary policies (especially the interest rates set by the national bank), exchange policies through which a certain exchange rate of the national currency can encourage exports and decrease imports, and even use C @tariff barriers for products imported from abroad European Union.

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## PROTECTING FINANCIAL INTEGRITY IN THE DIGITAL AGE: CURRENT CHALLENGES IN ACCOUNTING AND FINANCIAL AUDITING

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**Abstract:** Protecting financial integrity and managing associated risks are key priorities in accounting and financial auditing, especially in the context of the transformations brought about by the digital age. In this new landscape, the adoption of e-invoices and the use of the virtual space provided by ANAF become essential to improve the efficiency and security of financial and tax processes. Various studies have highlighted the benefits of e-invoices, including reducing human issue, preventing fraud, and increasing transparency in the audit process. Furthermore, the virtual space at ANAF provides quick access to information, allows secure transmission of documents and simplifies interaction with tax authorities. However, the implementation of these tools is not without challenges, such as the need to ensure compatibility with existing systems and guarantee data security in the evolving digital environment. However, e-invoices and virtual space from ANAF remain essential in promoting transparency and compliance in the financial and tax fields. In order to maximize the benefits of these instruments and meet the changing demands of the legislative and technological environment, further research and development in this area is vital.

**Keywords:** Accounting, auditing, transparency, Financial Integrity, Digital Age.

**JEL Classification:** H83, M41, M42.

### 1. Introduction

In the digital age, protecting accounting/financial reality is a multifaceted challenge for both accounting and audit professionals. The rapid changes brought about by Industry 4.0, Industry 5.0 and lately Industry 6.0, including the emergence of the metaverse world, require accountants and auditors to adapt to new asset valuation and auditing standards in a physical or virtual environment.

Digitization, Informatization in the European Union and in Romania today, emphasize the need to use modern emerging technologies but also government support towards a correct and coherent automation in accounting and audit processes.

Protecting the confidentiality of information, transparency and emphasizing the reality of financial and accounting information is fundamental to avoid risks associated with digitization within public institutions and/or private entities.

The use of big data, artificial intelligence (AI), blockchain technologies and automation of accounting/tax processes offers both opportunities, challenges, and a pressing need for perpetual adaptation in the field of audit and accounting to reposition weighted on new trends, highlighting the importance of rapid adaptation to the accelerated digitization process.

Continuous improvement and dynamic learning techniques require real-time evaluation of financial and accounting information, but also identification of deviations in the audit and accounting professions.

Accountants and auditors have a dual relationship in financial environments where they cooperate to ensure accurate recording, transparency, veracity, and verification of financial information. This collaboration and permanent co-dependency participate in

maintaining the confidence of investors, creditors, and the general population in the financial reports of a public/private entity.

## **2. Current context of digital transformation in finance**

In the current context of the technological boom, it is absolutely necessary for financial-accounting and audit institutions to adapt to new technological and digital trends in order to remain competitive in a connected and digitized world. Digital transformation has had a significant impact on accounting, finance, and auditing, driving forward the way financial/accounting activities are performed when providing services to clients.

With technological progress and modernization of digital infrastructure, Romania has a good internet network, more advanced than in other European states. Financial, accounting and audit institutions in our country are increasingly exploiting revolutionary technologies such as artificial intelligence, Big Data, robot-assisted counseling, blockchain (Iansiti & Lakhani, 2017) and Internet of Things (IoT) to significantly improve their products/services.

If the blockchain uses the distributed database, with peer-to-peer transmission and is guided by pseudonymous transparency, digital transformation implies the need to update critical tools at the physical and human level, but also to reduce bureaucracy to keep pace with digitization.

Iansiti & Lakhani, argue that blockchain technology must be adopted gradually and steadily, being able to create new economic and social bases, being able to automate contracts and transactions by eliminating intermediate bases, even changing our social environment of interaction. However, despite technological progress, technology often separates us socially, instead of bringing us closer, so there is a need for social awareness, responsibility in understanding new realities, persuasion from the main actors and continuous adaptation.

In fact, some large banking institutions already use advanced automated decision-making systems, ERP technologies (Fig.1) that integrate accounting, auditing, procurement, human resources and others at strategic management level and transaction processing to accelerate the decision-making process, leading to cost reduction, while they provide limited exposure to risks. In fact, one of the components is risk management itself.

On the other hand, some smaller financial institutions, commercial entities, are trying to adapt new technologies to their specific needs while providing personal and flexible services to customers.

An important part of the digital transformation of the financial sector is the increasing use of online and mobile banking. These services allow customers to access their bank account, make instant payments and money transfers, or apply for loans directly from their phone or computer, without having to visit a physical bank branch, this also tends to be required in accounting and auditing. These services are becoming popular because of the ease and convenience they offer, but also because of the level of security and privacy.

The digital transformation of finance doesn't stop there, and new technologies like artificial intelligence, robotics and machine learning continue to transform the way financial institutions operate and serve customers. These technologies enable automation of processes, data such as data collection and risk management, and can improve efficiency and operational-accounting reality.

After all, digital transformation in finance and accounting is an absolutely inevitable but also necessary process. Financial, accounting and auditing institutions need to adapt to new technological trends and use digital technology to improve their products and services, being able to say unequivocally that "the time for pen calculations is over" to straighten operational efficiency and provide accurate and fast knowledge to customers.

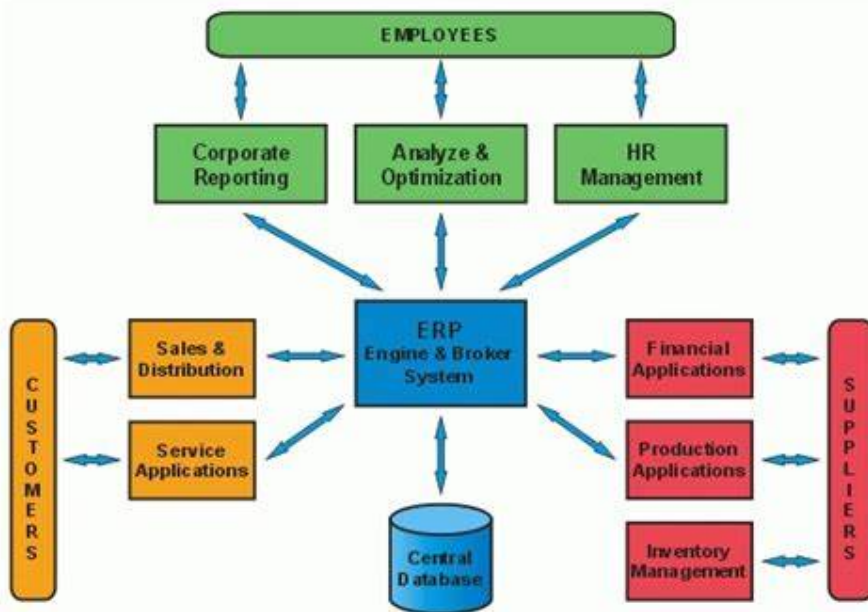
However, these changes also pose challenges to data security and consumer protection, and financial institutions need to invest in cybersecurity and comply with data protection regulations to maintain customer trust.

The digital transformation in accounting involves, according to Busulwa & Evans, changing the way accounting activities are performed, digitally adapting the skills and competences of professional accountants to remain relevant in the labor market, and integrating advanced technologies (IoT, AI, blockchain) will perfect and revolutionize the efficiency and accuracy of accounting and audit processes, enabling the economic professional to focus on data analysis and strategic advice.

It is also necessary to rethink the role of the accountant and auditor in the microeconomic or macroeconomic framework, considering the new technologies, the automation of repetitive processes will return to the new digital technologies, the accountant / auditor becoming a strategic partner of management providing valuable analysis and information for coherent and complete decision making.

In the context of the Knowledge Society, according to Radu V. & Tăbărcă A., Accounting information systems are of fundamental importance in the information age, having an essential role in ensuring financial integrity and directly contributing to the development of the knowledge society, as large amounts of data and information are generated and processed in the digital environment, accounting information being no exception. Therefore, a strong and reliable accounting information system is important to ensure transparency of accounting processes. These systems help to record/manage financial transactions correctly, ensuring accurate reporting and reporting.

Figure 1 : The role of ERP technologies



Source: <https://aipi2014.andreirosucojocaru.ro/laboratoare/laborator00a>

Moreover, accounting information systems allow the automation of many repetitive processes and potentially subject to human error, thus freeing up human resources for more valuable activities and thus stimulating productivity. In the context of the knowledge society, accounting information systems play a particularly important role in managing and capitalizing on financial information, contributing to the accumulation and dissemination of

knowledge in an efficient and accurate manner. Thus, they are indispensable for the development and progress of organizations and society as a whole.

### **3. Challenges for audit and accounting professionals**

One of the challenges faced by accountants and auditors today is the permanent adaptation to constantly changing accounting requirements (Lazari & Grigoriu, 2017), without forgetting that financial audit supported by accounting provides accurate financial information for making decisions at top management or branch level.

We must not forget that, since the adoption of the Fiscal Code in force in 2015, until now, there have been many Emergency Ordinances and Laws that have amended it so many times that today's accountant and professional auditor must keep up with both accounting rules and legal customs.

The many changes to the Fiscal Code do not bode well for strategic investors, who cannot enjoy predictability of their investments, as well as for accountants and auditors, who can lose.

However, challenges faced by accountants and financial auditors in achieving their objectives, they focus on compliance with accounting/auditing standards, general and particular legal regulations, but also specific ethical-moral and deontological principles.

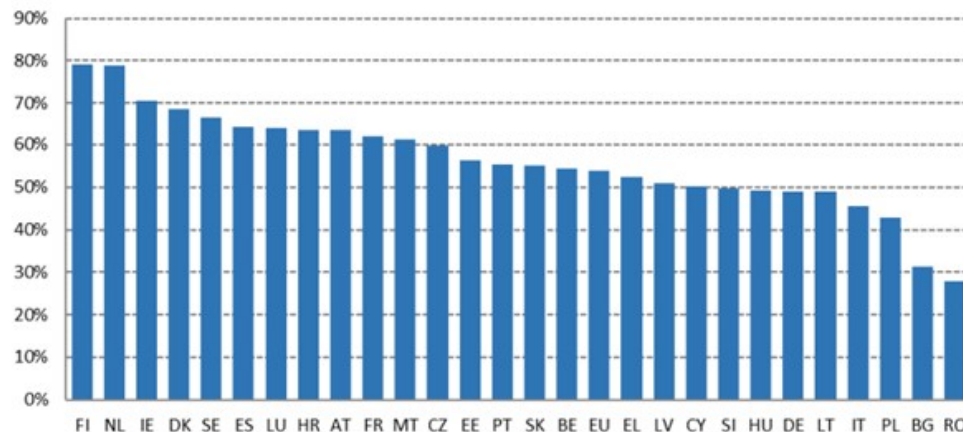
We must accept that the importance of credibility in auditing is related to compliance with generally established rules and procedures, any deviation having negative consequences on the reputation of the auditor, but also on the profession in general, on the principle "if it was possible here, it can happen anywhere", so a deviation considered "small" must be analyzed in the general and special context by the well-founded actions of clients or those directly interested.

Accounting and auditing professionals face challenges related to compliance with industry standards, regulations, and ethical principles to ensure quality in accounting / auditing processes, but also with the need to adopt emerging technologies "on the fly".

According to DESI (Digital Economy and Society Index) 2022, Romania is among the EU member states (Kovacs & Bittner, 2022) with the lowest scores, it is right with progress compared to 2020, in the Digital Economy and Society Index (Liu, 2022).

According to the DESI ranking (prepared by the Commission in the field of EU Technology and Digitalization) for 2022, the countries with the most advanced digital economies in the European Union are Finland, Denmark, the Netherlands but also Sweden, followed by Ireland, Malta and Spain in terms of their degree of digital technology appropriation (Fig.2). On the other hand, Romania, Bulgaria and Greece score lowest in terms of their digital economies. (Thomas et. al, 2023).

Figure 2 : At least basic digital skills(% of individuals), 2021



Source: Eurostat

Thus, it is obvious the urgent need for Romania to implement fiscal and economic measures and policies meant to stimulate the development and use of digital technologies, to benefit from the economic advantages and opportunities offered by the digital market, whatever it is called. It is true that today Romania has progressed compared to 2022, the digital invoice implemented by ANAF, or the electronic counter, are only small steps towards avoiding tax evasion and stopping the black economy, but not without echo in the market.

### 3.1. The importance of financial honesty in the digital environment

Financial integrity in the digital environment is an essential aspect in the current context of globalization and digitalization of the economy in a micro or macro-economic environment, it represents an aspect of transparency and responsibility in the use of financial resources, ensuring a solid basis for the economy and successful investments. (Cohn et al. 2022).

In Romania, during the last years, conclusive efforts have been made to improve financial honesty, based on economic and fiscal principles, by implementing new accounting regulations and standards, as well as by developing financial audit capacity.

These measures have helped increase financial transparency and provided a strong basis for business. At the same time, digitalization / computerization in the EU context has become a dominant trend in the Romanian economy, with a major impact on financial integrity / responsibility. In the digital context, financial integrity is dependent on the security of financial data, increasingly attacked today, but also on the ability to prevent financial fraud and/or abuse.

Therefore, financial integrity in the digital environment needs to be ensured through effective security, control, and accountability measures, as well as the deployment of advanced cybersecurity technologies.

In general, but also in particular, financial integrity is an essential aspect of economic and financial development, both traditional and digital accounting. In Romania, great efforts have been made to increase financial integrity, but also tax evasion, and digitization represents an opportunity and a necessity to increase financial and accounting efficiency and transparency, through the gradual implementation of security and effective control measures.

### 3.2. Cybersecurity and associated risks

In the knowledge society, dependence on digital transactions tends to increase, and vulnerability to cybercrime is a constant danger to which accounting, auditing and society in general must find a conclusive and coherent response anchored in new realities.

Thus, lack of physical presence and anonymity or pseudo anonymity can facilitate fraudulent activities, which will determine not only adaptation but also an equally rapid evolution with new technologies, requiring adaptability of financial integrity. Maintaining financial integrity in the digital environment must protect consumers, entities, and the economy at large.

Preparing for the future "that has begun" in the accounting profession means providing a stable framework and easy tools to help accountants adapt to the digital-information age. This could include training and certification programmes in both digital technologies and digital skills, as well as promoting lifelong learning and continuous development. The need to raise awareness of the importance of good data management and protection of confidential information is also central, especially in the context of the "galloping" increase in cyber security threats (Briceag & Bragaru, 2021).

### 4. Instead of conclusions

The adoption of digital technologies in accounting and auditing is very important in the digital age in which we live and operate. The digital transformation is profoundly affecting the accounting profession and accountants need to improve their digital skills, adopting new technologies unreservedly or reorienting themselves professionally to remain relevant and competitive in the market. Investing in digitalization will bring significant benefits in terms of business efficiency and performance, but there are also obstacles to overcome, such as costs, outdated mentality of one or the other, cyber security and lack of know-how. However, digitization is considered by many entrepreneurs as the main factor that can contribute to increasing the efficiency of the activity carried out, proof being the investments in refurbishment / computerization in any field, the accounting and audit field being no exception.

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## ARTIFICIAL INTELLIGENCE - BETWEEN THE RIGHT TO INFORMATION AND THE PROTECTION OF INTELLECTUAL PROPERTY

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**Abstract:** Science, as a collection of knowledge regarding the world and life, is a fundamental component of society, the two being interdependent and mutually influencing each other throughout evolution. Science has several purposes, psychological, rational, but also the social purpose of contributing to social welfare. The problem that can arise is when science deviates from this social role and is used for purposes contrary to the interests of society, or when the results of scientific research may infringe fundamental human rights and freedoms. The study aims to analyze how the latest scientific revolutions, digitization and artificial intelligence, are likely to affect human rights. Considering the latest novelty element of the increasingly widespread use of artificial intelligence, the views of society and international and regional organizations on this issue will be analyzed, with particular reference to ensuring a balance between the right to information and respect for intellectual property rights.

**Keywords:** digitization, artificial intelligence, right to information, intellectual property rights, fundamental human rights.

**JEL Classification:** K10.

### 1. General considerations

J.D. Bernal<sup>1</sup>, himself a scientist, has devoted an entire study to the social function of science (Bernal, 1946, p.381), believing that a social life based on the benefits of science leads to a new civilization, which is reflected in attitudes towards freedom. In the 19th century, freedom was apparent, he says, but "in an integrated and conscious society" the concept is transformed into "freedom as an understanding of necessity". As early as 1946, Bernal questioned why people were reluctant to embrace the changes brought about by the new scientific conquests, and he considered that the origin of this skepticism "lies in the profound lack of humanity" that people associate with the scientific world (Bernal, 1946, p.381). The effectiveness of scientific research should translate into social welfare, but scientific research is not always used for noble purposes.

Society's needs are constantly changing, and the scientific research results evolve in line with this dynamic. In this context, it is important to consider whether the use of the latest scientific breakthroughs in information technology is likely to affect fundamental human rights.

We will turn our attention to the digitization of society and the use of artificial intelligence. By digitization we mean "transforming analogue signals into digital signals"<sup>2</sup>, "putting information into digital form (= as a series of 0 and 1 numbers) so that it can be used by computers and other electronic equipment"<sup>3</sup> or "adapting (a system, process etc.) to be operated using computers and the internet"<sup>4</sup>.

<sup>1</sup>John Desmond Bernal - 1901-1971, Irish physicist, known for his studies of the atomic structure of solid compounds, during which he made major contributions to X-ray crystallography, <https://www.britannica.com/biography/John-Desmond-Bernal>

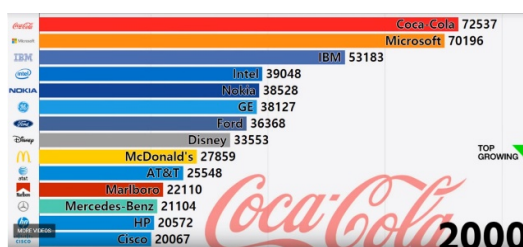
<sup>2</sup>DEX 2009 (Explanatory Dictionary of the Romanian language)

<sup>3</sup><https://dictionary.cambridge.org/dictionary/english/digitize>

<sup>4</sup>Oxford Languages and Google, <https://languages.oup.com/google-dictionary-en/>, which exemplifies, "carriers have been forced to digitize every area of their business as quickly as possible"

It may be difficult for today's people to accept the new digitized processes, the new technologies, but this is considered the third industrial revolution, the digitization revolution - industry 3.0, which has led to improved human communication. We are already in the stage of the fourth industrial revolution, also called industry 4.0, in which Big Data, Artificial Intelligence (AI<sup>5</sup>) and the Internet of Things (IoT) play an increasingly important role. In fact, the two stages of industrial development 3.0 and 4.0 are considered to be intertwined and interconnected. Unlike the first two industrial revolutions (the invention of the first steam engine - industry 1.0 and the discovery of electricity - industry 2.0), the latter two are not based on the discovery of a new source of energy, but on the development of technology - the phenomenon of digitization.

These changes have had consequences for the world economy by changing the Top 15 best global brands ranking.

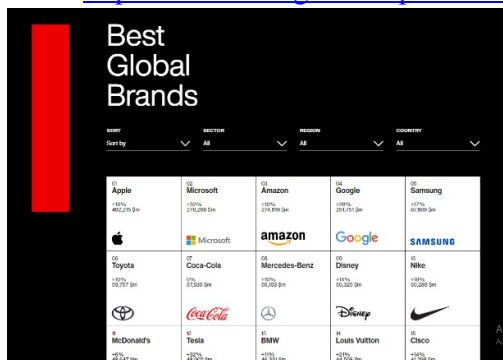


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has changed, but we can see that IT-based companies still occupy the top 4 positions:

Source: <https://www.orange.ro/help/articole/cele-4-revolutii-industriale-o-scurta-istorie>



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<https://interbrand.com/best-global-brands/>

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The trend continues in 2023, with the top four positions also occupied by IT companies. Artificial intelligence involves the use of computer programs that have some of the qualities of the human mind, such as the ability to understand language, recognize images and learn from experience<sup>6</sup>.

The digital revolution is radically transforming society and the way people live. Thus, it is also disrupting the law, not only in terms of mechanisms for regulating and normalizing behavior, but also in terms of the very foundations of legal reason and logic.

## 2. The international and regional bodies' view on the use of Artificial Intelligence

<sup>5</sup>Throughout the text we will use the abbreviation AI for artificial intelligence.

<sup>6</sup><https://dictionary.cambridge.org/dictionary/english/artificial-intelligence>

**a) United Nations (UN)**

Through its bodies, the World Intellectual Property Organization and the United Nations Educational, Scientific and Cultural Organization, the UN has initiated discussions on the protection of intellectual property in the context of AI, and has been concerned with identifying and managing the risks involved.

AI ethical rules have been introduced, but compliance is voluntary and not legally binding.

**• World Intellectual Property Organization (WIPO)**

The paper "*Generative AI - Navigating intellectual property*" (WIPO, 2024) considers that the adoption of AI by companies and organizations represents a substantial opportunity, but also includes significant legal risks.

In terms of protecting the intellectual property rights on data used by AI, huge amounts of data are estimated to be used for training. There are already public disputes, including legal ones, about protection by intellectual property rights in all its forms: copyright, trademark, but also industrial property rights: on patents, designs, databases or software, etc.

Another identified risk is related to preserving the confidentiality of business information and the protection by intellectual property rights of the AI system itself, which is an innovation in itself. Managing this risk requires a cost-benefit analysis and needs to be addressed through non-disclosure policies.

**• United Nations Educational, Scientific and Cultural Organization (UNESCO)**

UNESCO adopted, at its General Conference of November 2021, the "*Recommendation on the Ethics of AI*" (WIPO, 2024), the first set of standards on AI ethics based on observing fundamental human rights and freedoms.

The tool is based on the premise that the evolution of AI technology must always be accompanied by ethical values, especially as there is no uniform regulation.

**b) The Council of Europe**

In 2021, a study entitled "*Artificial Intelligence, Human Rights, Democracy and the Rule of Law – a primer*" (Leslie, Burr, Aitken, Cowls, Katell and Briggs, 2021) was conducted. The approach of the study is based on the premise that AI should be treated in terms of both the benefits and harms it can cause to individuals or groups. Thus, AI relies on certain expertise and, in this context, the protection of intellectual property must be considered. The study highlights that there must be a link between the principles of using AI, the rights and obligations applicable to the sectors and cases in which this technology is used.

The principles set out by the study are: respect for human dignity, human freedom and autonomy, harm to people and the environment, non-discrimination, gender equality, equity and diversity, transparency and explainability of the system, protection of personal data and privacy, accountability, democracy and the rule of law.

Thus, it is considered that, linked to the principle of transparency and explainability, one of the key obligations is that: "Member States should make public and accessible all relevant information about AI systems (including their operation, optimization, underlying logic, type of data used) that are used in the provision of public services, *protecting at the same time* legitimate interests such as public security or *intellectual property rights*, while ensuring full respect for human rights"<sup>7</sup>.

The Council of Europe is also considering the adoption of a legally binding treaty for signatory states to regulate the legal status of AI use. There are views that this step would be important given that there are many Council of Europe member states (46 member states and

<sup>7</sup>Page 21 of the Council of Europe study.

6 observer states) and other non-member states could become signatories to such a treaty. However, as this is an international treaty, its implementation in the law of the signatory states could take a long time and there could be differences in regulation (MIT Technology Review, 2023).

**c) Organization for Economic Co-operation and Development (OECD)**

In 2019, the OECD published the *"Council Recommendation on Artificial Intelligence"* (OECD, 2019) (at the proposal of the Digital Economy Policy Committee), which has been updated, most recently on 08.11.2023, and is considered an OECD legal instrument.

This instrument also aims to encourage innovation and trust in AI by promoting responsible management of trusted AI while ensuring respect for human rights and democratic values.

The paper highlights the need to update the legal framework and harmonize it at Member State level so that the use of AI does not undermine human rights as a whole, with particular attention needing to be paid to the protection of intellectual property rights, personal data, consumers, responsible business conduct and competition.

**d) Global partnership on AI**

Building on the principles set out by the OECD, the Global Partnership on IA (GPAI) was established in 2020 as an initiative to bridge the gap between AI theory and practice by supporting cutting-edge research and applied work on AI priorities (GPAI, 2024). The GPAI brings together experts from governments, civil society, international organizations, science, academia and industry to strengthen international cooperation, create common policies and apply OECD principles. While the initiative of France and Canada in setting up this partnership is commendable, there are views that no significant progress has been made in the GPAI.

**e) The European Union**

The European Commission has adopted, in 2020, the *"WHITE PAPER on Artificial Intelligence - A European approach to excellence and trust"* (European Commission, 2020). The document defines AI as "a set of technologies that combine data, algorithms and computing power" and its benefits should profit citizens, businesses and the public interest. It also sets out common directions for action by Member States to enhance the value of AI and establishes seven key requirements for its proper use: human involvement and oversight; technical robustness and security; privacy and data governance; transparency; diversity, non-discrimination and fairness; social and environmental well-being; and accountability. It highlights that AI, in addition to its undoubted benefits, can generate harms that "could be both material (safety and health of individuals, including loss of life, property damage) and moral (deny privacy, limit the right to freedom of expression, deny human dignity, discrimination, e.g. in employment)", and that the use of AI can be linked to a wide range of risks (risks to fundamental human rights, safety risks for users). The paper concludes that there is a need for legal regulation of AI use and launches a broad consultation on expert proposals.

In 2021, the Proposal (European Union, 2021) for a Regulation of the European Parliament and of the Council laying down harmonized rules on artificial intelligence (Artificial Intelligence Act - EU AI Act) and amending certain Union legislation was published and is still under negotiation with a view to the adoption of a comprehensive act (European Parliament, 2021). At the end of January 2024, the Council and the Parliament reached agreement on the Artificial Intelligence Act, considered to be the first legal rules, worldwide, on AI (Council of the European Union, 2021), with the adoption procedure to follow.

The draft legislation is based on the premise that an AI system may present a high risk and have a negative impact on fundamental rights, such as: the right to human dignity, respect for private and family life, protection of personal data, freedom of expression and information, intellectual property rights, freedom of assembly and association and non-discrimination, the right to education, consumer protection, workers' rights, rights of persons with disabilities, gender equality, the right to an effective remedy and to a fair trial, the right of defence and the presumption of innocence, the right to good administration<sup>8</sup>.

On the other hand, the transparency of AI systems must be ensured without compromising their own intellectual property rights or trade secrets<sup>9</sup>. The draft Act sets out responsibilities along the value chain of the AI system<sup>10</sup>, compliance with which must be "without prejudice to the need to observe and protect intellectual property rights and confidential business information or trade secrets in accordance with Union and national law".

### **3. Practical approach to the risks of using artificial intelligence in relation to the protection of fundamental human rights**

The whole world has, for a long time, been under pressure from shocks that take various forms: armed conflicts, terrorist acts, health crises, economic and financial crises, migration, etc. Among these pressures on mankind, a new concern has emerged about how to deal with AI so that it does not negatively affect people's lives. Therefore, the States of the world are concerned about regulating the field of AI, mainly to respect citizens' rights and freedoms. Big Tech<sup>11</sup> companies have been co-opted into these joint efforts, and have even committed to distinctively branding "AI-generated content to make technology safer" (Reuters, 2023).

We can see that the concerns listed above, regulating the framework for AI use are generically addressed to the protection of human rights, democracy and the rule of law and less to the protection of intellectual property rights, although AI uses a multitude of materials (documents, images, etc.) in the learning process.

When we look at the AI generated content, we see that these systems use a large amount of data (text, images, sound, etc.). This data can be:

- Copyright-free data (available free of charge);
- Data under copyright protection;
- Combined data (free and protected).

Intellectual property infringement has already started to raise problems in practice, problems related to both approaches - intellectual property rights on inputs or outputs. In this respect we exemplify:

1. "The New York Times has sued OpenAI and Microsoft for copyright infringement, opening a new front in the increasingly intense legal battle over the unauthorized use of published works to train artificial intelligence technologies. The lawsuit, filed in Manhattan federal court, alleges that millions of articles published by The Times were used to train automated chatbots, which now compete with the news media as a source of reliable information. The cost does not include an exact monetary claim (The New York Times, 2023)".

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<sup>8</sup>Recital 28a

<sup>9</sup>Recital 57d

<sup>10</sup>Art. 28

<sup>11</sup>Alphabet (Google), Amazon, Meta (Facebook), Apple and Microsoft (also known as GAFAM)

The case is an attempt to protect intellectual property - copyright, which has been infringed by using protected works to train AI.

2. "The Authors Guild, the leading professional writers' organization in the United States, sent an open letter on July 18<sup>th</sup>, 2023, to the CEOs of prominent artificial intelligence companies, including OpenAI, Alphabet, Meta, Stability AI, IBM, and Microsoft. The letter calls attention to the inherent unfairness of building profitable generative AI technologies using copyrighted works and asks AI developers to obtain consent from authors, cite them, and compensate them fairly.

The open letter points out that generative AI technologies rely heavily on the language, stories, style and ideas of authors. Millions of copyrighted books, articles, essays and poems serve as the foundation for AI systems, but authors have received no compensation for their contributions. These works are included in the structure of language models that power ChatGPT, Bard and other generative AI systems. Where AI companies like to say that their systems simply "read" the texts they are trained on, this is an inaccurate anthropomorphization.

Rather, they copy the texts into the software itself and then reproduce them again and again (The Authors Guild, 2024)".

The attitude of more than 15,000 authors (writers), as well as more than 200 artists (The New York Times, 2023) brings to attention the need for artificial intelligence development companies to take responsibility for observing intellectual property rights as they are protected by current legislation.

3. On 01.10.2023, actor Tom Hanks warned on his Instagram social media account about the appearance of an ad that allegedly stars him, only it's actually AI-generated: "Beware! There's a video promoting a dental plan with an AI version of me. I have nothing to do with it. Tom Hanks."

This example, too, shows the risks that AI can generate in the film or advertising industry, by creating false images, using the image of celebrities whose consent has not been obtained and which can lead to image and material damage.

4. "Researchers at Moorfields Eye Hospital and the Institute of Ophthalmology at University College London (UCL) in the UK have developed an artificial intelligence (AI) system that has the potential not only to identify sight-threatening eye diseases, but also to predict general health, including heart attack, stroke and Parkinson's disease. It is considered one of the first basic AI models in healthcare and the first in ophthalmology, called RETFound, and was developed using millions of eye scans used in the UK's Public Health System (NHS). The research team decided that the system should be *open-source*: freely available for use by any institution around the world as part of global efforts to detect and treat blindness by using AI" (Zhou et al., 2023).

The situation is illustrative for both protection options: on the one hand, creators have used information from public databases without affecting intellectual property rights. On the other hand, as far as the use of the system is concerned, it will not be protected by copyright because the creators of the system decided to make it an open source, which can be used by all users interested in the field.

5. "The Emag and Carrefour businesses are announcing the introduction of AI into online commerce by creating chat rooms where AI will be able to answer more complex customer questions or help them search for products. Of course, such use relies on the use of customers' personal data, which suppliers have access to in another context, that of using online commerce platforms" (HotNews, 2023).

This situation is representative of how the use of AI can infringe individuals' rights to the protection of personal data as guaranteed by European law. The data to be used was obtained from customers for another purpose, therefore its use by the AI system would not comply with the relevant legal provisions.

#### 4. Conclusions

Generative AI systems are believed to be trained on huge amounts of proprietary data (data being considered vital to these systems). The identified issue is whether the use of this data and the results generated by AI may constitute intellectual property infringements.

Intellectual property law in the field of AI needs to be approached from both the input and output sides of the AI system. The approach is different in terms of risks and risk management.

In terms of the inputs, i.e. the data used for creative AI, these are protected by each country's IPR legislation, but in most countries the legislation was enacted before the advent of AI, which has led to uncertainties about the application of these provisions to AI outputs.

In terms of outputs, generative artificial intelligence can produce inappropriate or illegal results, including incorrect information, intellectual property infringements, deepfake, personal information, defamatory accusations, and discriminatory, biased and harmful content.

At the same time, in terms of outputs (generated results), there is still no legal framework to protect this generated data, but the creators of the AI system can protect it by signing a confidentiality agreement or by contractual clauses on non-disclosure.

We believe that it is necessary to harmonise the legislative framework so as to transpose into practice the principles and ethical values set out by international organizations for the effective protection of intellectual property rights and to avoid the creation of unauthorized or false content.

In addition to the new regulations that are expected to be adopted, certain voluntary risk management measures need to be implemented, taking into account, of course, the costs involved:

- adopting technical safeguards for observing human rights;
- checking how the data used to drive the AI system is protected by intellectual property rights;
- keeping the traceability of how the scheme is run, so that it can be demonstrated that copyright has been observed or public resources have been used;
- training people involved in setting up and training the system on observing human rights (right to privacy, intellectual property rights, personal data protection, etc.);
- compensation to authors whose works should be used.

As we can see from our daily lives, information technology, digitization, are transforming our lives and, like any change, can create difficulties of acceptance and adaptation. AI is now, in terms of social approach, a new challenge with both advantages and disadvantages.

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## THE INFLUENCE OF LEADERSHIP IN ORGANIZATIONAL PERFORMANCE

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**Abstract:** *The leadership is the piece of resistance of any organization. Its role is to maintain and actively participate to the improvement organizational performance. The essay is based on various specialized studies, which embodies the idea that, the leadership style adopted by the leader, directly influences success and development, both among the organization and among the employees. The purpose of this essay is to highlight the impact of leadership styles on organizational performance, how they manage achieving the objectives of the organization in terms of the pawns coordinated by the employees. At the same time, the essay is meant to discover the most beneficial leadership style for current enterprises in the labor market. The focus was mainly on leadership styles, on the skills needed for a successful leader and stood out the close connection between how an organization is run and its results. The conclusion obtained is based on the cause-effect relationship between leadership and its success, exclaiming that the leadership style and effectiveness of the leader play an extremely important role in the success of organizational performance.*

**Keywords:** leadership, organizational performance, leadership styles, influence, employees, motivation, vision, ideals.

**JEL Classification:** M14, M21.

### 1. Introduction

Organizational performance is directly and reliably influenced by employee interest, employees are shaped, influenced, built and motivated by the leader. The potential of a leader is valued together with organizational results that he has together with his team, and the basis of these results will always be the adopted leadership style.

This article was based on different opinions of well-known names:

"Leadership is both an area of research and a practical skill that encompasses an organization's ability to lead, influence, or direct other people, teams, or entire organizations" (Western, 2009).

The leadership style adopted by the leader is considered by some researchers to be a particularly important factor for achieving organizational goals and visions and also for performance fluctuations among subordinates (Akpapere and Jengre, 2019).

The key factor, which has a strong impact on the performance of the organization, is its leadership itself, led by the one who leads it (Ng et al., 2012, Jeremy et al., 2012, apud Akpapere, 2019).

The purpose of this work is to highlight the impact that the leadership style adopted by the leader has on organizational performance and at the same time create an image of proportions, related to the most appropriate style that could bring guaranteed results in terms of organizational performance, given the fact that many organizations are faced with disinterested, demoralized employees, without motivation, without vision and interest, always on the starting point...characteristics that can be caused by an inadequate leadership style.

The main question that needs to be asked is: "How do leadership and its styles influence organizational performance?". The answer to this question is a complex one, which will be found in the article. The conceptual definitions of leadership and its styles, of organizational performance, the characteristics of each style, its advantages and disadvantages, the typology of the ideal leader and the link between the way of leadership and the achievement of performance in an organization, will be detailed.

## 2. Conceptual definitions

"Leadership is both an area of research and a practical skill that encompasses an organization's ability to lead, influence, or guide other people, teams, or entire organizations" (Western, 2008).

According to Jaques Clement, leadership is the process by which a person establishes an ideal or a path for other people and manages to convince them to act towards a common goal, with interest and full involvement, in order to bring about the achievement of those objectives (Clement, apud Lazar, 2002, p.253).

Leadership style is defined as a behavioral pattern displayed by a leader. Kapur presents us in his work, how different leadership styles directly and reliably influence the functioning of an organization. The achievements and failures of a group, of an organization often turn out to be aspects of a faulty or ineffective leadership process. (Kapur , 2020, pp. 2-4).

Thus, Lazar, in his writing, classifies leadership in four styles (Lazar, 2002, p. 255):

1. autocratic, style characterized by a strict attitude, in which subordinate employees are induced to feel fear, control and supervision;
2. bureaucratic, a style characterized by formalities, based on documents and signatures, aimed at controlling employees and at the same time eliminating their initiative, involvement and well-being;
3. "laissez-faire", the style in which employees are given freedom, thus reducing control and encouraging free expression;
4. democratic, style represented by words such as sociability, cooperation, developed communication, flexibility, team, openness.

The leadership style adopted by the leader is considered by some researchers to be a particularly important factor for achieving organizational goals and visions and also for performance fluctuations among subordinates (Akpapere, Jengre, 2019).

Team leadership is a characteristic of effective team performance. Current approaches to the studied topic.

"Current leadership theories describe leaders based on traits or how influence and power are used to achieve goals. When using trait-based descriptions, leaders can be classified as: autocratic, democratic, bureaucratic, charismatic/laissez faire.

If leadership is viewed from the perspective of exchanging power and using it to achieve results, leaders are transformational and transactional" (Germano et al., 2010). It is proven that leadership styles can influence organizational performance both negatively and positively. Authors such as Bhargava and Yaseen, Obiwuru et al., are of the opinion that although the performance of the organization comes from the attitude of the human resources, from their level of motivation and involvement, the starting point of these characteristics is defined by the relationship between the leader and the human resource, how they manage their team and manage to arouse the interest and commitment of employees (2016, 2011). The opinion of these important names correlates with the conception of Haque, Faizan and Cockrill, who attribute the performance of the organization to the appropriate treatment of employees by the leaders (2017).

Al Khajeh, along with Bhargavi and Yessen in other related studies conclude that leadership style determines organizational performance, however, it is still not clear which style brings about such an achievement (2011, 2016).

Armstrong, brings the answer as to why the leader through the style he adopts represents the head of the organization, so in his opinion, regardless of the style the leader adopts, he must focus on motivating employees and defining objectives, since the style of the

leadership they adopt is seen by subordinates as an example of what to do and how to behave (2012).

### **3. Personal opinions**

In my opinion, leadership is very important for the development towards performance of a successful organization. I consider leadership to be the engine of the organization that makes things go. Without a well-established way of leading and a leader who knows how to appropriate his function and the style he attends, various problems can arise in corporate structures.

Leadership is about people, about teamwork, about vision, about communication and close relationships, it is about respect, support and common goals. The main task of a leader is to influence the human resource towards the common vision of interest and to form teammates according to their own style and taste, in order to be able to fulfill the established objectives, objectives that lead to organizational performance.

Why is leadership important in an organization? Leadership is not just about leading people, it is meant to bring them together, make them interested, motivated and satisfied at work, so that when they want to leave the organization, the relationship between the leader and that employee, to make him think twice about that decision.

Through an effective leadership style, employees feel good at work, develop and improve under the leader's supervision, and thus motivation and attachment to the organization appear. A motivated and loyal employee will provide quality service and engagement, leading to the conception of the relationship between leadership and performance.

Regarding leadership from the perspective of traits, i.e. the styles: autocratic, bureaucratic, laissez faire and democratic, I personally do not consider that any of them separately could bring the organization to a maximum level of efficiency, because each has something in the minus. For example, I will try to describe the 2 styles at opposite poles, the autocratic style and the laissez faire style. The autocratic style is that authoritarian style, which is based only on strict rules that must be respected, the opinion of the employees does not really matter, that is, it does not matter at all, they are only seen as labor force. Why not? Due to the fact that this type of leadership will increase staff turnover in that unit. The employee is the mirror of the leader, and the leader must be the role model of the employee. What does the leadership style practiced in an organization have to do with its performance? It has a very big connection, because the main trait of a leader is to motivate his subordinates towards a common goal, mainly the achievement of an important goal for organizational performance, and this aspect, although it seems simple, is almost impossible without a leadership style well defined.

### **4. Conclusions**

The success of an organization is influenced by a series of factors aimed at the employees who are part of that field. Among these factors I can mention satisfaction, motivation, commitment, interest and the relationship between the employee and the one in charge. The leader is directly responsible for the success of the organization, because he is the person responsible for the transmission and implementation of values and also for creating types of employees according to the interests of the organization. He can cope with this task by using the effective leadership styles for him, his team and the performance of the organization in which he works (Bass, Riggio, 2005).

The profile of a successful leader is based on emotional intelligence, on his ability to manage situations, on building and maintaining a good relationship with teammates, on the implementation of important values such as: motivation, empathy, respect and last but not least, on self-awareness. A good leader does not adopt a single leadership style, he has the ability and flexibility to mold between styles according to the requirements of the organization (Bawany, 2016).

"Effective leadership also involves motivation, management, inspiration, support, remuneration and analytical skills. When all these are present, organizations register an increased number of satisfied employees at work, thus positively influencing the productivity of profits, from which the performance of the organization emerges (Hurduzeu, 2015).

Ullah and Duranii, argue that the leadership style is actually closely related to the performance of the employees, and their performance participates in the organizational performance (2011).

Danişman, Tosuntaş and Karadag made a documentary about the importance of leadership on organizational performance. 270 research studies with 101,232 participants were consulted. As a result of this research, it was found that there is a positive effect of leadership on the performance of an organization. According to the study, leadership influences organizational performance generally through ethical leadership styles and approaches. Referring to most of the respective studies, it was concluded that the transformational leadership style has the strongest impact on performance. (2015) Popa, suggests that each leadership style or approach directly or indirectly, positively or negatively influences the achievement of the performance ideal of each organization. He is of the opinion that, while some styles increase the potential of organizations, others, in turn, diminish their development and deepen the road to bankruptcy (2012, apud Danişman et al., 2015).

In conclusion, "the goal of any organization is not only to survive, but also to sustain its existence by improving performance. To meet the needs of the most highly competitive markets, organizations must continuously increase performance." (Arslan, Staub, 2013, apud Karamat 2013), and to increase organizational performance, a well-structured leadership is needed, a leader with potential, who knows how to adopt the style that suits the people they work with, so as to make the most of the management's ability to influence performance.

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# SMART SPECIALIZATION IMPLEMENTATION IN MOLDOVA: A CASE STUDY OF INNOVATION POLICY INTEGRATION AND ECONOMIC DEVELOPMENT

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**Abstract:** *Moldova, a small land-locked country with a population of approximately 4 million inhabitants, has faced significant social and economic challenges. Despite these obstacles, Moldova has maintained a functional education system and research infrastructure. The country's collaboration with the EU through the Association Agreement and its participation in the Horizon 2020 programme have opened avenues for research and innovation partnerships. This paper examines Moldova's adoption of smart specialization strategies as a framework for economic growth and innovation. Leveraging the support of the JRC under the EU Enlargement and Integration Action, Moldova has embraced the entrepreneurial discovery process to identify its economic competitive advantages and innovation potential. This case study offers insights into the integration of smart specialization into Moldova's innovation policy landscape and provides lessons for other countries seeking to harness their innovation potential for economic prosperity.*

**Keywords:** *smart specialization, Moldova, innovation policy integration, economic development.*

**JEL Classification:** *O32, R11.*

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## 1. Introduction

Smart Specialisation focuses on the idea that regions should identify and invest in their competitive advantages to foster innovation-driven growth. This concept, introduced by the European Commission, is designed to guide regional development within the context of the EU's cohesion policy.

Key principles of Smart Specialisation include:

- **Entrepreneurial Discovery Process (EDP):** Involving stakeholders such as businesses, academia, and policymakers to identify areas with the greatest potential for innovation and growth.
- **Prioritization:** Directing resources towards a select number of sectors to prevent the dilution of investments.
- **Multi-level Governance:** Promoting collaboration among local, national, and international entities in policy implementation.
- **Innovation as a Driver:** Leveraging technological innovation to boost economic diversification and regional competitiveness.

In Moldova, these principles serve as a basis for focusing efforts on specific sectors with potential for economic growth.

Moldova, a small landlocked nation with around 2.6 million people, has been shifting from a centrally planned economy to a market-driven one since the early 1990s. Despite facing economic difficulties, the country has made notable strides in fostering a more vibrant private sector, with agriculture, manufacturing, and services being key contributors.

Nevertheless, Moldova's innovation ecosystem has been historically underdeveloped due to inadequate funding for research and development (R&D), a fragmented institutional setup, and weak connections between industry and academia. The country's participation in EU

initiatives, such as Horizon 2020, has spurred Moldova to adopt the Smart Specialization approach to enhance its innovation capabilities and align with EU standards.

## **2. Literature review**

In the context of the decision to implement a process of smart specialisation, it should be mentioned that advanced economies have a tradition of developing strategies for territorial innovation and economic development, while countries in transition from centralized planning to market policy do not usually have such an experience. In this case, there is sometimes the practice of imitating the priorities and economic practices of advanced countries. Kleibrink et al. (2017) suggest in this case a trajectory for transition countries to avoid the widespread trapping of poorly defined innovation policies by modernizing and changing their industrial policies in line with ideas integrated into the concept of innovation strategies for smart specialisation RIS3: (1) building a validated "competence center" to provide a comprehensive analysis of the respective economic structure and to coordinate the process of smart specialisation; (2) begin with a strong economic area on the basis of which stakeholders will engage with government bodies to define common priorities and actions (domain experimentation); (3) proceed with a region to experience different approaches at sub-national level (territorial experimentation); (4) the process focuses initially (at the policy mix stage) on short-term measures (nonR&D measures), while major exploration programs remain for the long-term (Kleibrink, Larédo, Philipp, 2017). Other studies advocates a better integration of research and innovation policy into the overall economic policy strategy; improving the synergies between research and innovation strategies, and strengthening the prioritization by increasing stakeholder's involvement (Porcescu S., Savga L., Stratan A, 2018).

Radošević and Stancova (2018) also argue that the Moldovan government's collaboration with international organizations such as the World Bank has enhanced its capacity to implement SS, but more needs to be done to ensure private sector engagement.

The literature review highlights the importance of Smart Specialisation in driving regional innovation and economic growth, particularly in the context of Moldova's transition to a market-driven economy and its integration into EU initiatives. The review also underscores the challenges and opportunities associated with implementing Smart Specialisation strategies in emerging economies with limited resources.

## **3. Data sources and methodology**

The research uses data from multiple national and international sources, such as the European Commission and reputable scientists. It also includes data from the Moldovan National Agency for Research and Development (ANCD) and other pertinent organizations.

The research employs a quantitative method approach for data collection and analysis techniques to assess the impact of smart specialization strategies on Moldova's economic development. The study also incorporates a case study approach to provide in-depth insights into the implementation of smart specialization in Moldova.

## **4. Smart specialization implementation in Moldova**

The Smart Specialization strategy aims to align research, technological development, and innovation with regional economic needs, enhancing resource efficiency and fostering competitive edges. For Moldova, adopting S3 marks a crucial advancement in its efforts towards economic modernization.

Moldova's implementation of the Smart Specialization strategy is deeply rooted in its National Development Strategy and National Research and Innovation Strategy. Integrating S3 into these policies underscores Moldova's dedication to modernizing its economy and promoting innovation-led growth. The development of Moldova's S3 framework was supported by the European Commission's Joint Research Centre (JRC), which assisted in identifying key sectors for specialization.

The governance of Smart Specialization in Moldova encompasses a range of stakeholders, including government bodies, regional authorities, businesses, universities, and research institutes. The National Agency for Research and Development (ANCD) is central in coordinating the activities of these institutions and ensuring that S3 priorities are embedded within the wider national policy agenda.

Since 2017, under the guidance of the UN, the government of Moldova has been working to adapt the 2030 Agenda and integrate the Sustainable Development Goals (SDGs) into national strategic planning. This process includes selecting relevant priority targets for Moldova and adjusting these targets to better align with the country's specific needs.

The main platform for coordinating and monitoring the integration of SDGs into national policies is the National Coordination Council for Sustainable Development, headed by the Prime Minister. This council includes government officials, State Chancellery members, academia, and the associative sector. Additionally, sectoral groups within public authorities involved in strategic planning have been established.

The National Development Strategy "Moldova 2030", adopted in 2018, plays a crucial role in incorporating the Sustainable Development Goals at the national level by outlining long-term development priorities and a vision that will guide all inter-sectoral and sectoral policy documents. This strategy focuses on four key pillars:

- Sustainable and inclusive economy;
- Strong human and social capital;
- Fair and efficient institutions;
- Healthy environment.

To advance these areas, ten national-level sustainable development objectives (SDOs) have been set for 2030, including ensuring quality education, effective governance, improved infrastructure access, and better working conditions.

Simultaneously, Moldova has initiated the development of a smart specialisation framework to identify research and innovation priority domains with the highest potential to boost economic transformation and competitiveness. Under the Ministry of Education, Culture, and Research's coordination, smart specialisation was integrated into the National Programme for Research and Innovation for 2024-2027 and the national smart specialisation program for 2024-2027 "Smart Moldova". Four priority areas were identified: agriculture and food processing; information and communication technology; energy; biomedicine and biopharmaceuticals.

On November 7, 2018, the Government approved the National Development Strategy "Moldova 2030", a key planning document for long-term growth. It focuses on improving citizens' quality of life by addressing their problems, interests, and aspirations. To meet these goals, ten national Sustainable Development Objectives (SDOs) for 2030 were established, including quality education, effective governance, better infrastructure access, and improved working conditions. Each goal includes an analysis of the current situation, contributing factors, a strategic vision, and priority actions. Developed with UN and World Bank support,

the strategy is a result of collaboration among ten inter-ministry groups, involving local administration, civil society, business, and academia.

## 5. Results and discussions

Although Smart Specialization holds great promise for transforming Moldova's economy, several obstacles have surfaced during its implementation:

- Funding constraints: Moldova's R&D investments are significantly lower than the EU average, posing challenges for financing crucial innovation initiatives required for Smart Specialization.
- Institutional capacity limitations: Numerous institutions tasked with executing S3 lack adequate resources and expertise to effectively participate in the policy process.
- Private sector participation: While the Entrepreneurial Discovery Process aims to involve businesses in pinpointing growth areas, many Moldovan companies, especially SMEs, encounter difficulties in adopting innovation.

Initial observations indicate that Moldova's Smart Specialization strategy has positively impacted innovation and economic growth, especially in areas like ICT and agri-food technologies. For instance, there has been a rise in the number of startups and technology-based businesses, driven by focused investments in digital innovation.

Additionally, the agri-food sector has advanced through innovations in biotechnology and food processing, boosting Moldova's export capabilities and supporting rural development. Although it is premature to fully assess the long-term economic outcomes, Moldova's Smart Specialization strategy has established a foundation for more sustainable and innovation-driven growth.

Smart Specialization aids regional growth by harmonizing local strengths with broader national and global objectives. Moldova has been striving to minimize regional inequalities by fostering innovation in its underdeveloped areas, ensuring that rural regions are involved in and benefit from the nation's modernization initiatives.

## 6. Conclusions

The implementation of Smart Specialization in Moldova has demonstrated significant potential for driving economic growth and innovation. By aligning research, technological development, and innovation with regional economic needs, Moldova has made strides in enhancing resource efficiency and fostering competitive edges. The integration of Smart Specialization into Moldova's National Development Strategy and National Research and Innovation Strategy underscores the country's dedication to modernizing its economy and promoting innovation-led growth.

Despite facing challenges such as funding constraints, institutional capacity limitations, and private sector participation, Moldova's Smart Specialization strategy has positively impacted innovation and economic growth. Notable progress has been observed in areas like ICT and agri-food technologies, with an increase in startups and technology-based businesses driven by focused investments in digital innovation. Additionally, the agri-food sector has advanced through innovations in biotechnology and food processing, boosting Moldova's export capabilities and supporting rural development.

The Smart Specialization strategy has also played a crucial role in minimizing regional inequalities by fostering innovation in underdeveloped areas, ensuring that rural regions are involved in and benefit from the nation's modernization initiatives. Although it is premature to fully assess the long-term economic outcomes, Moldova's Smart Specialization strategy has established a foundation for more sustainable and innovation-driven growth.

In conclusion, Moldova's experience with Smart Specialization offers valuable lessons for other countries seeking to harness their innovation potential for economic prosperity. The country's commitment to integrating Smart Specialization into its broader economic development strategy highlights the importance of aligning innovation policies with regional needs and leveraging technological advancements to drive economic growth.

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## THE SLOW GROWTH OF FINANCIAL INTERMEDIATION THROUGH THE IMPLEMENTATION OF SUSTAINABLE MEASURES IN THE FIELD

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**Abstract:** *As countries develop, they tend to carry out a variety of economic activities, operate in larger markets and claim higher financial capital, adapted to growing needs. Financial intermediation plays an important role in such developed economies, to boost lending, efficiently allocating funds and providing protection and security for various financial transactions. The current research shows us that in Romania, bank lending remains the pillar instrument for financing investments and the banking system has defined its lending capacity in recent years. However, our country ranks last, in terms of the degree of financial intermediation. The article proposes concrete financial measures with a high degree of implementation difficulty but with a strong impact on the growth of sustainable financial intermediation in Romania.*

**Keywords:** *financial intermediation, slow growth, sustainable development, GDP per capita, credit banking.*

**JEL Classification:** E50, E52, G20.

### 1. Introduction

The main goal of this research derives from the opportunity to integrate in the new economic context, which is uncertain and unpredictable, the impact of financial intermediation on the development of the economy in a sustainable manner.

From the point of research perspectives, the paper will analyse:

- ❖ the theoretical and practical aspects of the type of financing in Romania and the degree of financial intermediation focusing on the measures for increase a sustainable financial intermediation in line with the the EU average and according to the new global trend ESG;
- ❖ we hope to help ensuring a sustainable future for the next generations, avoiding financial impediments;



The limits of the concept financial  
intermediation&practical methods of  
increasing the degree of financial  
intermediation

**Methodology:** consist of studies of NBR, EC, ECB, NCMO, data analysis and interpretation (graphs, tables, diagrams) which show the impact of financial intermediation, my work experience in working with entrepreneurs.

### 1. Sustainable development. The key dimensions

The concept of sustainable development involves three dimensions of welfare — environmental, economic and social as the figure no 1 shows. Sustainable development means that the objectives of economic growth must take into account the protection of the environment and social factors. In 1987, The World Commission on Environment and Development published the report *Our Common Future* (United Nations, n.d.), the Brundtland Report, which refers to the indicators that can be used to evaluate long-term progress in order to achieve inter-generational equity, respectively satisfying the needs of the present generation without compromising the ability of future generations to meet your own needs.

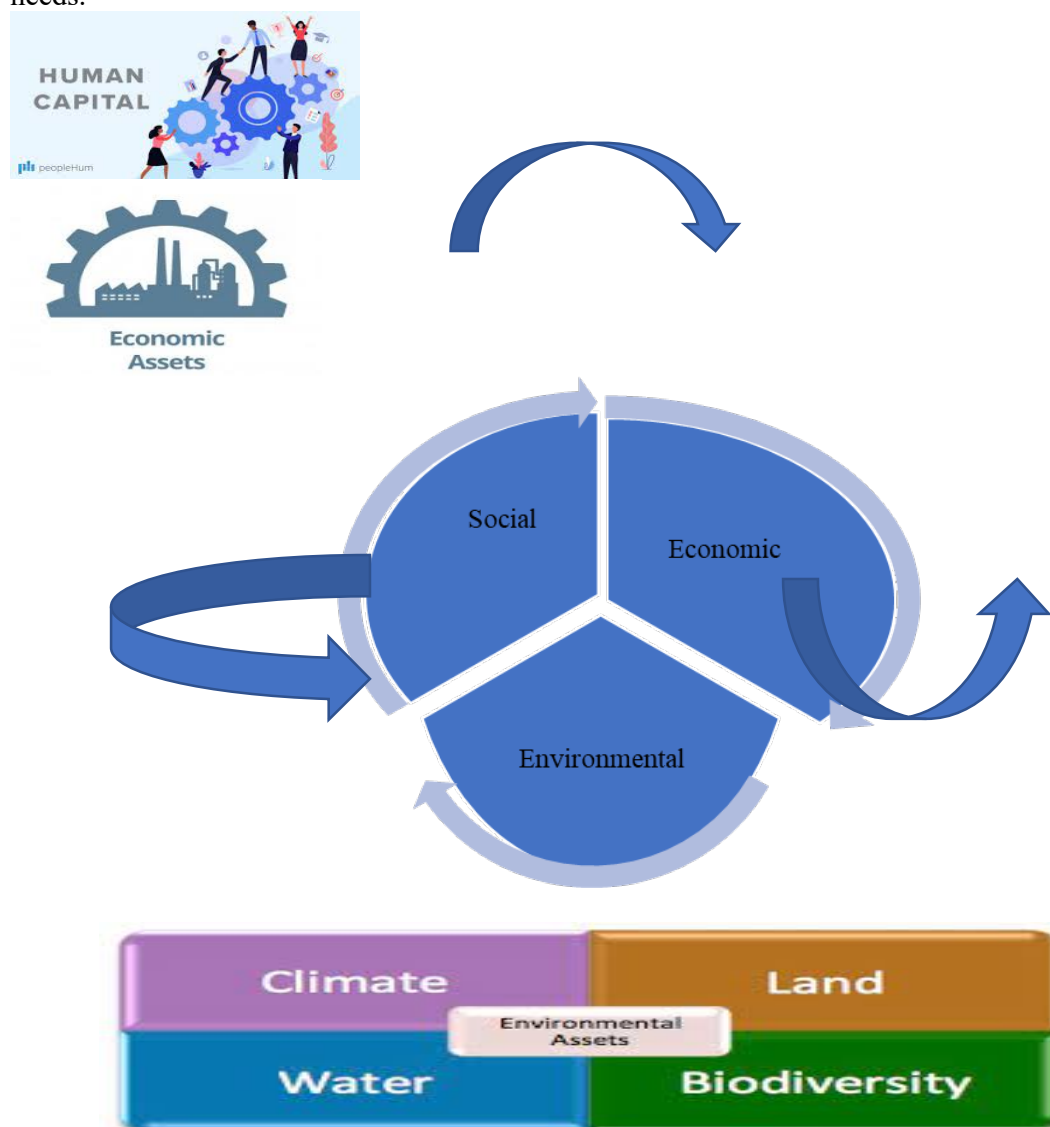


Figure no 1- The 3 key dimensions of sustainable development  
Source: (OECD, 2005)

The relationship between the 3 key dimensions of sustainable development:



1. The impact of social variables on the economy and on the environment:

-social variables on the economy: labour force, population and household structure, education and training; consumption levels, institutional and legal frameworks;

-social variables on the environment: demographic changes, consumption patterns, environmental education and information, institutional and legal frameworks;

2. The influence of environment services to the society and to the economy:

-environmental services to the society: access to resources and amenities, contributions to health, living and working;

-environmental services to the economy: natural resources, contributions to economic efficiency and employment;

3. The impact of economic activity on the environment and on the society:

-economic activity to the environment: resource use, pollutant discharges, waste;

-economic activity to the society: income levels, equity, employment;

Financial sustainability is closely related to the economic one, because the projects of sustainable development can attract various funds and financing measures and lower costs for raw material would be generated and the focus would be transferred on efficiency production or service costs.

That is why, it is important to emphasize the importance of credit and the banking system in the development of a sustainable economy.

**1.1. The role of the credit and the banks in the economy**

Credit contributes significantly to economic processes by favoring the flow of funds, promoting economic growth and supporting financial activities. It also facilitates individuals, organizations and governments to access funds that they do not currently possess, allowing them to make purchases, make investments and conduct projects that contribute to the development of the economy. We emphasize some essential aspects of the role of credit in the economy:

1. Capital formation and investments that can be made: By accessing credits, organizations use borrowed capital for the purpose of expansion, research and development, generating new jobs, improving the productivity process and supporting innovation. The loan supports entrepreneurs and start-up companies to access the necessary capital to implement the business plan, thus contributing to economic growth, if the business is built and maintained healthy, on viable economic principles.

2. Consumer expenses: Individuals who access consumer loans can purchase electronics, cars, houses, other goods in order to increase the standard of living, by stimulating the demand for goods and services, contributing to the maintenance and development of related industries but also to increasing the degree of employment.

3. Home ownership: by accessing mortgage loans, people own homes whose cost can be spread over a long period of time, offering stability to families and contributing to the maintenance and growth of the real estate sector and the construction materials industry and related sectors.

4. Education and human capital: Loans intended for studies offer the possibility of enriching knowledge and skills by pursuing higher studies and increases the degree of qualification of the workforce as well as productivity with an impact on economic progress.

5. Government financing: projects of public interest such as health, infrastructure, education, can be realized through attracted sources/public loans, through bond issues and

other types of instruments with the help of which governments collect financial capital with precise destinations, thus supporting economic activity and adding value to public services.

6. Commercial transactions: The gaps between the deadlines for collecting receivables and the deadlines for payment of operational debts, the continuation of the current activity without malfunctions through the purchase of stock of goods, and other current expenses, can be supported by short-term loans, loans on contracts, loans -supplier, lines of credit in order to manage cash flow and continue business processes without slippage.

7. Entrepreneurship: Facilitating access to additional funds, in addition to entrepreneurs' own capital, makes it possible to start a business and over time contributes to the development of the investment plan, stimulating competition, generating new jobs and boosting the economy.

8. Risk management and diversification: Allocation of funding sources to different business lines allows business diversification, thus reducing exposure to certain segments and reducing risks. The entrepreneur has the freedom of decision to allocate funds in various opportunities to disperse the risks of the business and implicitly the financial risks.

9. The impact on monetary policy: The interest rate is a tool through which central banks influence the economy because the interest rate directly impacts the cost of lending, a low interest rate decreases the cost of borrowing and stimulates borrowing and spending, and a high interest rate increases the cost of borrowing, discourages consumption and lending and directly impacts inflation.

10. Economic cycles: In economic expansion, the growth is supported by easy access to credit, but the high degree of indebtedness can generate financial instability (Michigan Law Review & Simons, 1949) and if this situation is not properly controlled and monitored, it can contribute to recession.

### **1.2. The role of the banks in the economy - key aspects**

Within the financial system, banks usually have a significant role due to the multiple functions and services they offer. They play the role of key financial intermediaries and impact the flow of funds and implicitly the way economic activities are carried out. The essential role of banks in the financial system refers to: financial intermediation by directing capital flows, thus contributing to economic activity and maintaining financial stability. Below are some important roles of the banks in the economy:

1. Financial intermediation: the intermediation of the request for funds and the offer, respectively between debtors and creditors is ensured by banks. Banks collect available funds from individuals and legal entities, remunerating these funds through interest and place the capital to people who need additional funds for consumption, current operations and investments, funds that bear interest, which the banks charge.

2. Capital allocation: it is essential that the borrowed funds are directed to viable, profitable investment projects that generate added value in the economy, contribute to economic development, therefore the role of banks in channeling resources in productive processes is critical, they evaluating the creditworthiness of the debtors and the destinations of the borrowed funds.

3. System of means of payment: The infrastructure of an effective payment system supports commercial transactions, having an important role in economic development. The banking system ensures a safe, digital and efficient environment for making payments, allowing individuals and legal entities to carry out transactions, to transfer capital at national and international level.

4. Investments and savings: banks offer a regulated and safe environment for saving money and investing in specific products in short and long-term investment and savings products, diversified according to the needs of individuals, for achieving goals and accumulating capital. The products offered are diverse, from conservative ones, without risk to complex ones with a varied risk component: deposits, savings accounts, investment funds, deposits with indexed returns.

5. Credit creation: A part of the deposits collected by the banks is kept as a reserve, according to the regulations of the central bank, and the part that remains available from the deposits can be loaned. Through this process of fractional reserves, the money supply increases and economic growth is sustained, through the creation of credits.

6. Liquidity injection: through the diverse offer of short-term loans, credit lines, overdrafts, banks inject liquidity into the economy, placing funds from those who save to those who want to borrow, facilitating the transfer of capital, adapted to the immediate and long-term needs of the entities.

7. Risk management: through the vast offer of complex financial products, banks provide insurance services, solutions to cover currency risks, interest rate changes, other unpredictable events, supporting the management of financial risks.

8. Interest rate control: The cost of credit and the level of consumption is adjusted through the levers applied by central banks that influence the short-term interest rate with an impact on the loan rate applied by commercial banks (BNR, 2011). Bank lending impacts the interest rate in the economy.

9. Adoption of monetary policy: Central Banks influence the money supply and economic activity using instruments such as the establishment of minimum mandatory reserves imposed on commercial banks, the interbank interest rate, in this way banks play the role of intermediaries to implement monetary policy.

10. Stability of the financial system: ensuring a stable and regulated environment for the safe execution of financial transactions, guaranteeing the amounts invested for saving in banks, compliance with prudential rules, all of these have the role of avoiding excessive speculation, controlling and mitigating risks, and through these levers, banks support financial stability.

11. Increasing the employment rate and the economy as a whole: by facilitating capital investment and access to financing through which entities develop, create jobs, invest in profitable opportunities, banks contribute to economic growth and economic activity in general.

12. Financing government expenditures: by facilitating government borrowing through bond issues and other public debt instruments, Banks support governments to carry out projects and provide public services, thus helping economic development.

I emphasize that the role of banks varies depending on the type of bank (investment banks, central banks, commercial banks, etc.) and the regulations specific to each state. Moreover, in order to contribute to financial stability and to offer protection to the interests of depositors and for guarantees offered to the economy in general, it is necessary that the banking activity should take place without syncope, in a safe, well-regulated environment and constantly and effectively supervised.

The monopolistic economy, as well as the pressure of the political environment, prevented the banking system from achieving its essential goal, that of the efficient allocation of resources in the economy (Nicolae Danila, 2010); For this reason, the bank credit did not constitute a means of connection between the real and the financial sector, being an

instrument to artificially keep non-viable economic agents alive, a means of subsidizing the economy during the period 1990-1993, in particular. In the years 1992-1993, the banking system in Romania was seriously affected when the interest rate was negative, correlated with the very high inflation rate, a fact that determined the decapitalization of the companies and the banks.

The quality of the loan portfolio was affected, the share of non-performing loans reaching the level of 50% in the years 1994-1998;

- The contradiction between the new banking system with western influences and the characteristics of the Romanian economic environment damaged the Romanian bank loan portfolio; Other factors that led to the increase in the share of non-performing loans were: the instability of the economic environment, the superficial analysis of credit requests and the faulty management of enterprises;
- In the current economic context, the Romanian banking system has remained the main financial intermediary in the economic environment, having the role of delivering long-term credits to companies to support investments, but also short-term credits to cover the gap in working capital;
- There are controversies due to the fact that there are no defined theoretical bases for the role of credit in the economy;
- Current economic thinking sees credit as a factor that interferes with the monetary political process. There are:

Opinions that underestimate the role of credit/the banks in the development of the economy, so that we are confronted with an increase request of the companies in favour of other sources of financing, inadequate and expensive.

Opinions that overestimate financing bank, considering the credit - the main mechanism for relaunching the economy.

In our opinion, if the credit bank is granted according to the needs of the companies and to the business model, and in an appropriate financing structure, having in mind the development of the business in a sustainable way, the credit bank is not overestimate.

## 2. The impact of Financial intermediation on the development of a country's economy

The arguments for which I support the slow growth of financial intermediation:

1. Using additional capital to develop, but adapted to the needs of the company, structured according to the business model and respecting prudential lending principles.



Figure no 2 - Developing a business by using both owned & debt capital  
Source: own processing data

2. During the period of economic recession, the banking system is an important pillar that evaluates the risk related to the restoration of asset prices, because by the nature of its activity, banks give confidence to certain areas, which determine the resettlement of asset prices(Nicolae Danila, 2010);

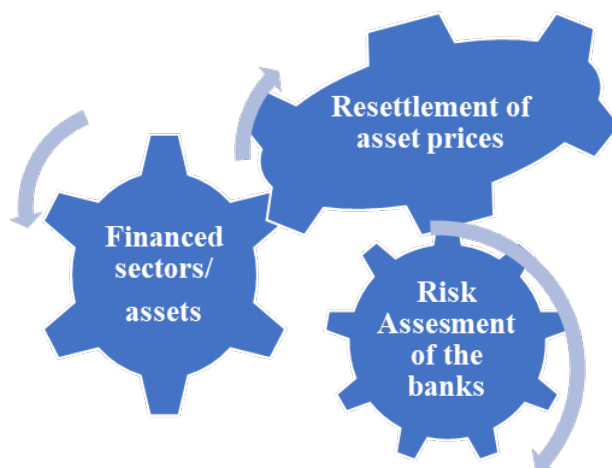


Figure no 3- The risk assessment of the banks determine the resettlement of the asset prices  
Source : (Nicolae Danila, 2010) and own processing data

3.Economic activities are developing based on investments, which generate new jobs and boost consumption, with an impact on social well-being, and this circuit creates opportunities for more new investments.



Figure no 4- The impact of investments in the economic activity  
Source: own processing data

Economic practice has shown that, in order to support investments, additional funds are needed, in addition to own capital;

### 2.1. The financial intermediation in Romania in comparison with the EU average financial. The correlation with GDP per capita.

In the monopolistic economy, the banking credit was a tool to artificially keep economic agents alive, with serious consequences on the capitalization of companies and banks (non-performing rate).

Within the financial system, banks usually have a significant role due to the multiple functions and services they offer. They play the role of key financial intermediaries and impact the flow of funds and implicitly the way economic activities are carried out. The essential role of banks in the financial system refers to: financial intermediation by directing capital flows, thus contributing to economic activity and maintaining financial stability.

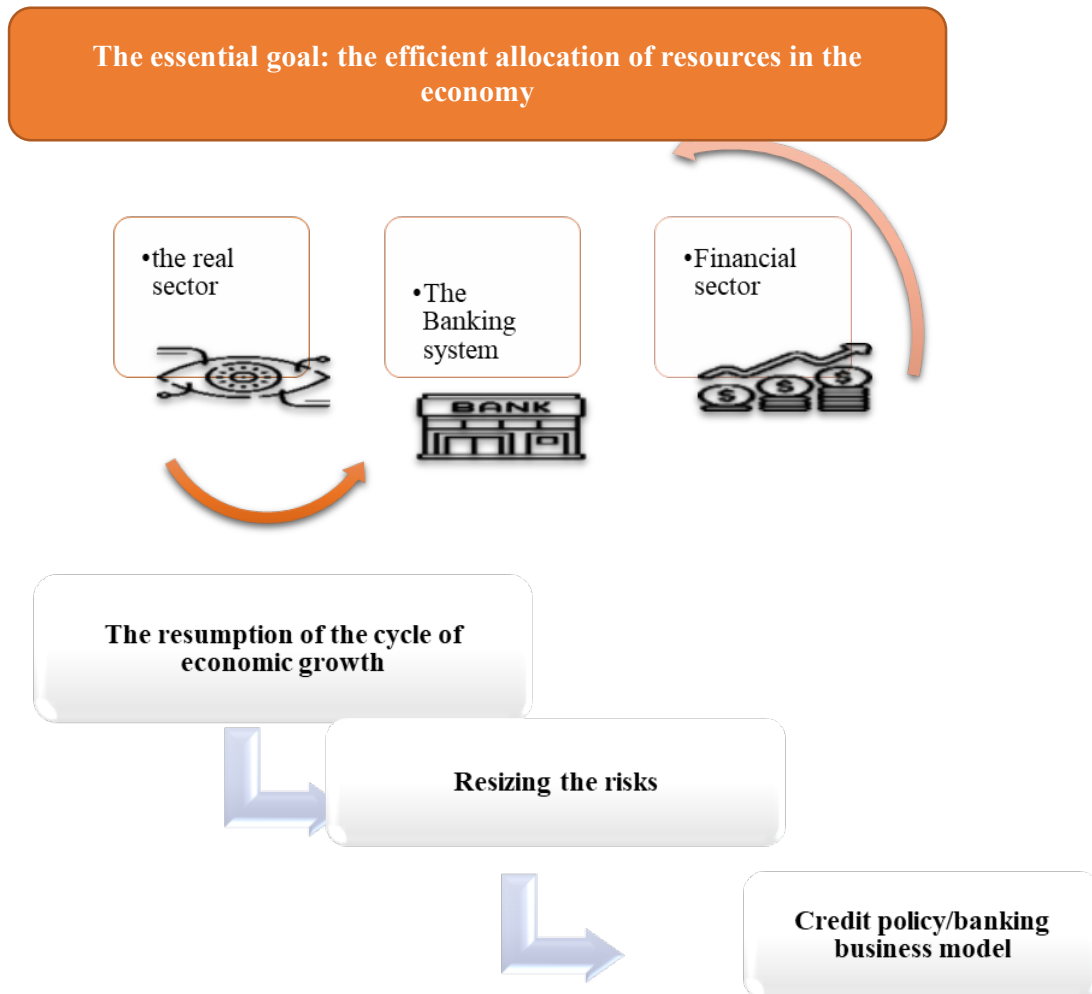


Figure no 5- Sustainable allocation of resources in the economy through the banking sector  
Source: (Nicolae Danila, 2010) and own processing data

**The impact of Financial intermediation on the development of a country's economy: POSITIVE correlation**

## 2.2. Sustainable financial intermediation

Sustainable financial intermediation, which includes ESG factors (social, environmental, governance) can favorably impact sustainable economic development, having a supporting role in environmental protection, social well-being and long-term economic growth.

Below are ways in which sustainable financial intermediation can have a positive impact on sustainable economic development:

- **Investments in sustainable economic projects:** sustainable financial intermediation ensures the allocation of funds in projects with a positive social and environmental impact. These refer to investments in clean technologies, alternative energy

(renewable sources), sustainable agriculture, traded housing at affordable prices, initiatives that favor a greener economy and contribute to inclusion.

- **Risk management and resilience:** The integration of ESG factors in financial intermediation supports the identification and dispersion of risks regarding social, environmental and governance factors. By mitigating exposure to risky procedures and assets, financial players with the role of intermediaries can support economic stability and become more resilient.

- **Innovation and technological progress:** a sustainable financial intermediation supports the development of those industries that protect the environment and preserve natural reserves and are in continuous innovation, an aspect that contributes to the development of modern, high-performance, efficient technologies, products and services that respond to social challenges and environmental, helping economic growth and stimulating the competitive environment.

- **Long-term value creation:** considering the inclusion of ESG aspects, financial intermediaries create investment opportunities in organizations and projects strategically oriented towards long-term sustainability and the generation of added value, an aspect that generates better and more constant returns, and contributes to the creation of a sustainable investment ecosystem.

Social inclusion and development: promoting financial inclusion by facilitating access to resources for the disadvantaged population, supporting microfinance and SMEs, which helps to reduce poverty and inclusive economic growth.

- **Improved corporate practices:** participants who have the role of financial intermediaries can encourage and support the interest of companies in applying sustainable practices of ethical conduct, transparency in business and governance, being practical models for entities, an aspect that increases the confidence of investors and creates and maintains an environment of stable and safe business.

- **Involvement of interested parties:** a sustainable financial intermediation has the role of involving all interested parties, investors, communities and regulatory institutions, collaboration that can have positive implications in decision-making processes, an increase in responsibility and collaborative approach regarding more general objectives.

- **Regulatory support:** Sustainable financing has become the target of governments and regulatory authorities, being appreciated for its contribution to regulations that encourage social equity, economic development and environmental protection and conservation.

- **Positive reputation and brand value:** Reputation and brand value can be improved by focusing on sustainability of financial intermediaries, which attracts customers, investors, who recognize and appreciate ethical procedures, responsible and efficient financial practices.

- **Contribution to (Sustainable Development Goals):** A sustainable financial intermediation is promoted in line with the UN SDGs – poverty, climate change, social inequalities and environmental degradation (Ministry of Foreign Affairs, 2023). In other words, a sustainable financial intermediation no longer traditionally approaches marking profit at any cost, and aims at the overall impact on the environment and society. By allocating funds in sustainable initiatives, it stimulates the process of socially equitable, economically viable and ecologically responsible economic development.

Numerous specialist studies (Levine, 1997), (King & Levine, 1993), (Beck et al., 2000) have analyzed in 80 countries the connection between the financial sector and economic growth, during 30 years. The results of these studies demonstrate that financial intermediation impacts the evolution of the future economic activity, arguing that the level of

development and financial intermediation is correlated with the real increase in GDP per capita and with the efficiency of using capital in economies. Levine, Ross (1997) - "Financial Development and Economic Growth: Views and Agenda.

It is useful to note that, although we observe a positive correlation between the level of financial intermediation and GDP per capita, the relationship is complex and can be impacted by different factors, such as organizational development, the regulatory environment, technological progress and cultural norms in -a state. Also, the quality of financial intermediation and its influence on economic growth varies according to the efficiency of financial services, the mode of regulation and application in a certain economy.

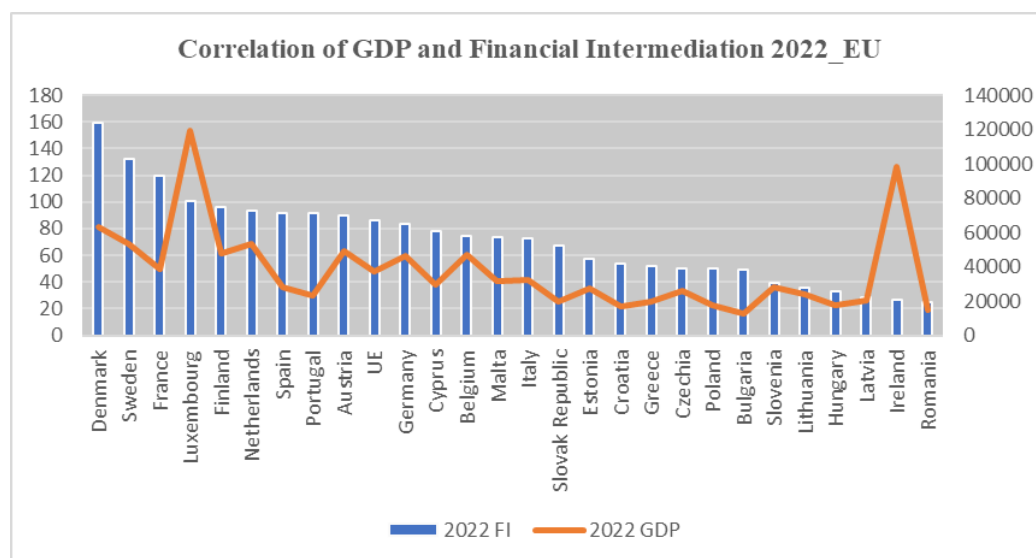


Figure no 6- The correlation of the GDP/capita with the degree of financial intermediation. At the EU level, we calculated the correlation between financial intermediation and GDP at the level of each European state, based on the reported data. I mention that the data reported for the year 2022 are the share of credits granted to non-financial companies in GDP, in order to have visibility at the EU level.

Source: ECB, Eurostat, BNR, EIB - own processing data



The development of small and medium-sized companies is the priority axis for Europe, including access to financing



the acces of financial resources is fundamental for developing non-financial



ensuring the appropriate financing contribute to a healthy economic growth

$$\text{Financial Intermediation} = \frac{\text{Credit}}{\text{GDP}}$$



Financial intermediation positively impacts the development of a country's economy: positive correlation 0.4, as shown in the SUMMARY OUTPUT, based on the data in the table below.

*Table no 1- The level of financial intermediation and GDP per country in EU*

2022		
Country Name	FI	GDP
Denmark	159	63540
Sweden	132	53160
France	119,7997285	38590
Luxembourg	100,7127648	119230
Finland	96,00155993	47990
Netherlands	93,78656291	53260
Spain	91,34946063	27910
Portugal	91,28567769	23310
Austria	89,52408865	49440
UE	86,24347685	37257
Germany	83,64425079	46150
Cyprus	77,79637419	29600
Belgium	74,1735192	47250
Malta	73,46907614	31790
Italy	72,8620264	32390
Slovak Republic	66,92628881	19590
Estonia	57,41894663	27170
Croatia	54	17240
Greece	52,19916289	19670
Czechia	50	25830
Poland	50	17310
Bulgaria	49	12400
Slovenia	39,71451524	27980
Lithuania	36,05419349	23620
Hungary	33	17520
Latvia	28,60744705	20720
Ireland	26,35999789	98260
Romania	24,72455234	15040

(Eurostat, 2023)

(International Monetary Fund, International Financial Statistics and data files, and World Bank and OECD GDP estimates, 2023)

## SUMMARY OUTPUT (1)

<i>Regression Statistics</i>		
<b>0,40809259</b>		
<b>Multiple R</b>	<b>1</b>	
	0,16653956	
R Square	3	
Adjusted R Square	0,13320114	
	6	
	31,1211118	
Standard Error	4	
Observations	27	

## ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	4838,186983	4838,18698	4,99542496	
Residual	25	24213,09005	968,523602	8	0,03458696
Total	26	29051,27703			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	50,8624985	10,90755362	4,66305280	
	0,00054686		5	8,92359E-05
Y	3	0,000244677	2,23504473	
			5	0,03458696
	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
	28,3979713	73,3270257	28,3979713	73,3270257
				0,00105078
	4,29423E-05	0,001050785	4,29423E-05	5

**Access to financing - an important pillar in the development of companies** (Comisia Europeana, 2011)

⊗ The economic development of small and medium-sized companies is a priority axis for Europe, including access to financing

⊗ Access to financial resources is a fundamental element in the development of the non-financial sector (BNR, 2021);

⊗ Ensuring adequate financing contributes to healthy economic growth; According to figure no 7, the lending activity of the Romanian private sector is below potential, in the context where: substantial pressures on the depreciation of the national currency persist, consumption is increasing correlated with the consistent trade deficit (approx. EUR 34 billion/2022), and the balance of loans banking loans granted to non-financial companies increased by 5.3% (BNR info). The financing of companies is not in rhythm with the economic dynamics.

However, the year of the pandemic brought the first increase for financial intermediation, after 10 years of successive decreases. Maintaining the degree of financial intermediation at the lowest level in the EU was influenced by: the volatility of the legislative framework, the precarious economic situation of companies (negative capital, declining profitability and liquidity). I note that approximately 50% of financial intermediation represents loans granted to companies. Credit/GDP ratio=financial intermediation.

According to figure 7 - The degree of financial intermediation, the lending activity of the Romanian private sector is below potential, in the context in which: the substantial pressures on the depreciation of the national currency persist, the consumption increases correlated with the consistent trade deficit (approx. 34 billion eur/2022 -(Institut National Statistics Office, 2023a), and the balance of bank loans granted to non-financial companies increased by 18% (info BNR-Monetary and Financial Statistics).

The financing of companies is not in rhythm with the economic dynamics. However, the year of the pandemic brought the first increase for financial intermediation, after 10 years of successive decreases. Maintaining the degree of financial intermediation at the lowest level in the EU was influenced by: the volatility of the legislative framework, the precarious economic situation of companies (negative capital, declining profitability and liquidity).

I note that approximately 50% of financial intermediation represents loans granted to companies.

⊗ Economic lending versus economic growth; There is a strong correlation between national wealth and the level of financial intermediation, in the sense that the share of private sector lending in GDP stimulates economic growth. The extremely low degree of financial intermediation in our country places Romania in last place in EUROPE and from the point of view of GDP/ inhabitant

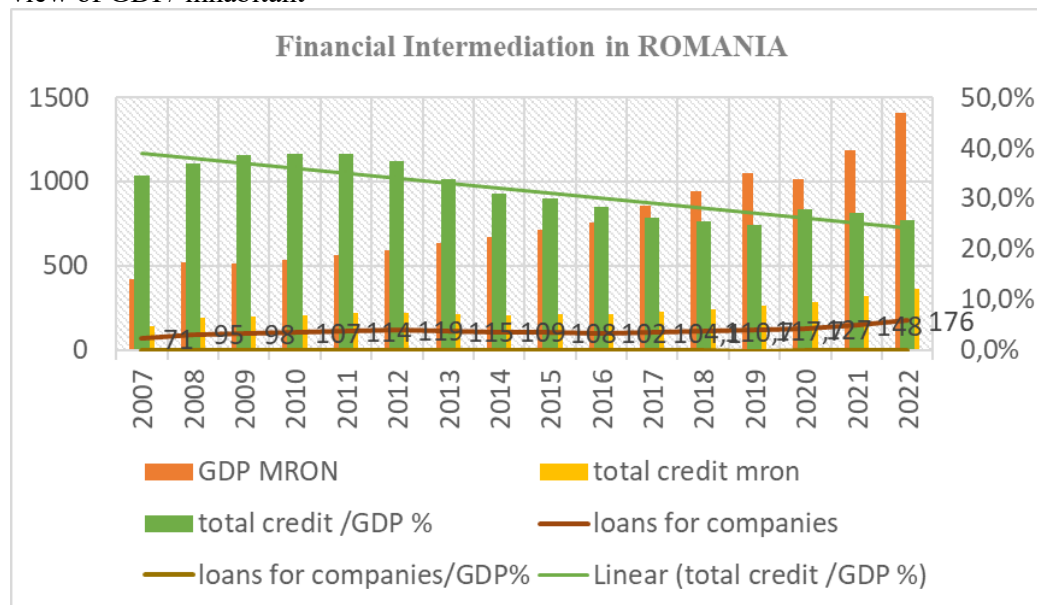


Figure no 7- The degree of financial intermediation in Romania 2007-2022

Source: BNR, INS, own processing data

(BNR, 2023);

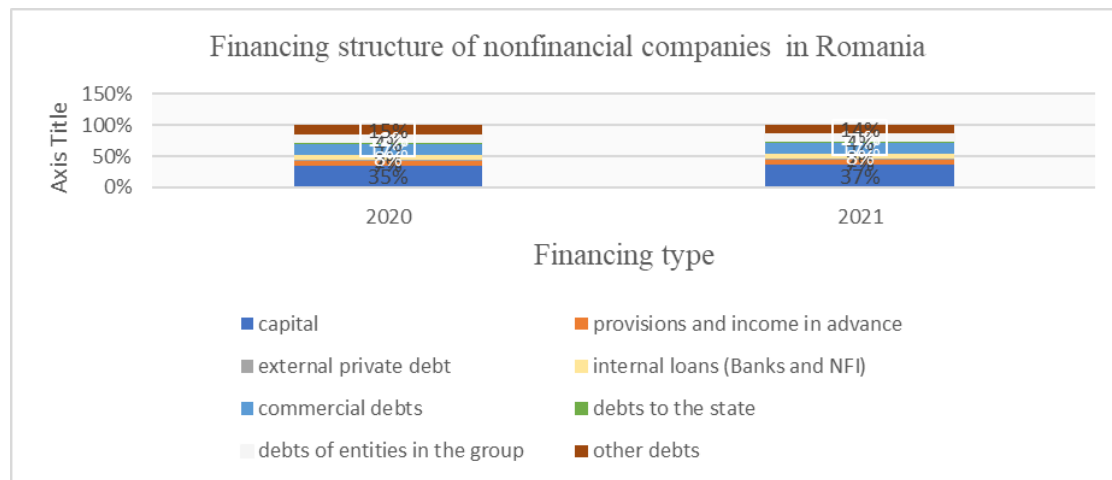
<https://www.bnr.ro/Credite-acordate-gospodariilor-populatiei-5771.aspx;>

<https://www.bnr.ro/Credite-acordate-societatilor-nefinanciare->

[5792.aspx;https://www.bnr.ro/Credite-acordate-institutiilor-financiare-nemonetare,-administratiei-publice-si-nerezidentilor-5793.aspx;](https://www.bnr.ro/Credite-acordate-institutiilor-financiare-nemonetare,-administratiei-publice-si-nerezidentilor-5793.aspx)  
(Institutul National de Statistica, 2023b);<https://insse.ro/cms/ro/tags/comunicat-pib-anual>

The decrease in the degree of financial intermediation starting with 2013 was generated by a number of factors, the most important being the volatility of the legislative framework, number of the companies in financial difficulty, as well as the process of cleaning the balance sheets of non-performing loans started by banking institutions in the period immediately after the crisis.

The financing structure of the companies in 2020-2021 is similar, the main financing instrument remains the supplier credit, as well as the debts by the affiliated entities and towards the shareholders (inclusive external mother-daughter loans). The third source of financing as a share of liabilities companies is internal lending from banks and NFIS (represents 8% of the liability, similar to previous years).



*Figure no 8- Financing structure of nonfinancial companies in Romania*  
*Source: BNR, Report on financial stability, December 2022*

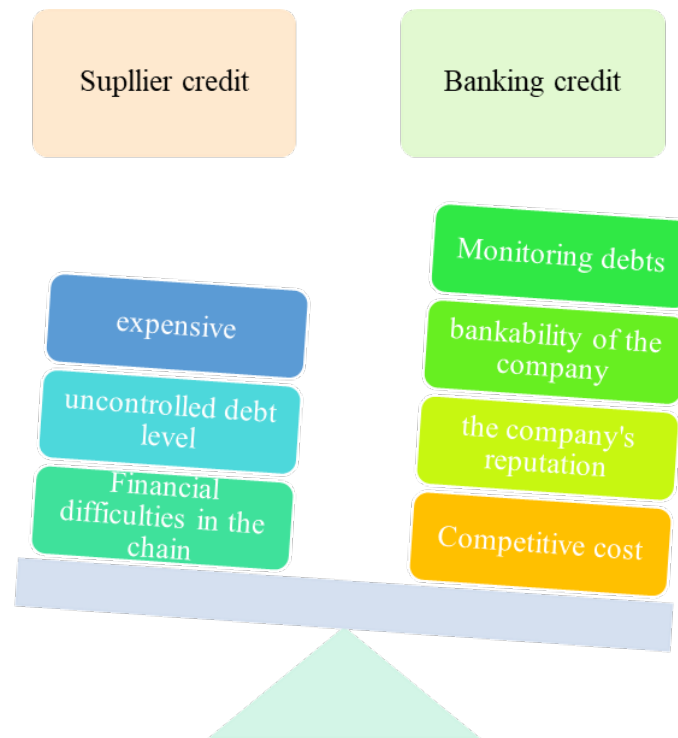


Figure no 9- The comparison between supplier and bankig credit  
Source: own processing data

The reasons for choosing bank financing, considering that the supplier credit is an unique form of financing and the bank credit involves various sustainable options adapted to the company's business model

### 3. Proposal of sustainable measures in the financial field with a high degree of implementation difficulty but with a strong impact on the growth of sustainable financial intermediation

#### 1. Awareness



- communicating the negative consequences of carring on the present activities through permanent public information;
- communicating/highlighting the progress/results of the application of sustainable measures through periodic public reports accessible through promotion campaigns;
- financial education at the level of individuals/organizations through workshops/practical applications;

2. Parameterization of the financial indicators of the companies for the validation of their activities in the market:





To regulate the relevant indicators for financial viability (positive equity) in order to maintain in the market those companies that respect the basic economic principles;

To apply measures for rebalance indicators, following controls/data published at the AFP, through collaboration between entities and financial/fiscal inspectors;

To be warned for 2 consecutive balance sheets for not fitting indicators within the established limits;

### 3. Encouraging, monitoring and regulating banking rules to increase the access to sustainable financing

- the adoption of European instruments, procedures and the monitoring of their application in the Romanian financial system- the accelerated development of the offer of financial products/services at banking level
- prioritizing green credits and supporting sustainable development through SME support programs with guarantees from the Romanian State through guarantee funds- accelerating digitization in the financial-banking system by regulating and implementing transparency measures for current operations - opening accounts and trading capital flows exclusively through bank accounts/eliminating cash from circulation
- simplifying the credit process through: reducing documents/restricting the number of approvers on the approval circuit

Sources: *Financial intermediation and the entrepreneurial footprint of Romania - 2021* Romanian Association of Banks; (Curtea de Conturi Europeana, 2019)- *Quick Case Study Sustainability reporting: a balance sheet across EU institutions and agencies*

### 4. Conclusions of the research:

As countries develop, they tend to carry out a variety of economic activities, operate in larger markets and claim higher financial capital, adapted to growing needs. **Financial intermediation** plays an important role in such developed economies, to boost lending, efficiently allocating funds and providing protection and security for various financial transactions;

- There are **controversial opinions** regarding the role of credit and banks in the economy, but the way of allocating resources in the economy is important, which highlights the positive role of credit. In the current economic context, the Romanian banking system has remained the main financial intermediary in the economic environment, having the role of delivering long-term loans to companies to support investments, but also short-term loans to cover the gap in working capital. However, our country ranks **last** in terms of the degree of financial intermediation;
- There is a **positive correlation** between national wealth and the level of financial intermediation, in the sense that the share of private sector lending in GDP stimulates economic growth;
- The proposal of **sustainable measures in the financial field** with a high degree of difficulty of implementation but with a strong impact on the growth of sustainable financial intermediation starts from the awareness at the level of the individual/entity, then setting financial indicators of the companies to validate their activities in the

market and the encouragement, monitoring and the regulation of banking rules to increase access to sustainable financing.

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## PARTICIPATORY MANAGEMENT IN EDUCATION

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**Abstract:** *This article discusses the defining elements of participatory management and its advantages. Participatory management is a modern form of management, which can only be applied in scenarios where all actors involved have the same interests, without taking into account their personal or professional status. As far as Romanian educational institutions are concerned, it can be observed that there are elements of participatory management, both directly and indirectly, which are determined by internal regulations, by the style of management and, last but not least, by the elements of organisational culture found in them.*

**Key words:** *management, participatory management, active participation of employees.*

**JEL Classification:** *M10, M12.*

### 1. Introduction

The past few years have been an important period in terms of improving the education system in Romania. The launch of the Presidential Administration's project, "Educated Romania", the drafting of the two education laws, namely the Law on Pre-University Education and the Law on Higher Education, which after a broad consultation process were promulgated in July 2023 by the President of Romania and which came into force as of the school/academic year 2023/2024 and the initiation of the National Reform Programme (NRP) 2023 demonstrate that political decision-makers as well as civil society are committed to modernising the education system by making the quality and relevance of studies more efficient, including by increasing the democratic nature of both the process and the relationships within the system. The presence of democracy within the education system is directly proportional to the participation of all players in the management of both the system and the institutions.

Romanian education is undergoing a permanent process of structural change, as part of an organised process of reform and efficiency, which is reflected in strategic and education policy documents. The objective of these reforms is to ensure responses to the specific needs in terms of social and professional training of all citizens, as well as the needs of economic, social, cultural and even political development of the state. In order to remain part of the system and to ensure competitiveness in the educational market, all educational institutions must reform and demonstrate a proactive attitude, including in the implementation of consistent projects aimed at organisational development, with a view to increasing the quality, efficiency and equity of the educational process and the further training of all specialists in all fields. One of the most relevant elements of organisational development that ensures all the conditions for the success of the institution is the management team and, implicitly, the organisational policy promoted by it. Thus, decision-making that affects the future course of the institution and the preparation of related planning documents can be done in the following ways:

a) by involving teaching staff, pupils/students, parents, experts, economic agents and other relevant representatives of society;

b) decisions are made strictly by the management team, who are also the only members who draw up the planning documents;

c) contracting an expert in the design and implementation of development strategies or a management consultant.

Any of the above options has advantages and disadvantages, the basic argument being the enforceability of decisions and the effectiveness of strategic documents in terms of the development of the institution (Bezede et al, 2016). Thus, practice and theory point to the fact that those institutions where participatory management is applied and all stakeholders (parents, pupils, teachers, economic agents, etc.) play an important role in the decision-making process, participate responsibly in the creation of strategic and organisational policy documents, achieve their objectives with greater success.

## 2. What is participatory management?

If we go strictly by the DEX definition, participation is the act of taking part in an activity or action or discussion. When we refer to the management sphere, participation refers to the involvement of people in several managerial processes, whether it is making decisions or evaluating how the proposed objectives have been achieved.

Participatory management style is a modern form of management. However, it can only be implemented when all players have the same interests, regardless of their professional and personal position. Awareness of shared interests creates the conditions for initiative and creativity on the part of each participant in carrying out management tasks. In this respect, the characteristics of participative management are as follows:

- 1) active participation of employees in the management process;
- 2) Involving more people from the workforce, in addition to the management team, in monitoring and evaluation processes;
- 3) active participation of all actors who have an interest in the outcome in the decision-making process important for the institution, where, given the scope but also the intensity, we have two forms of participatory management: direct and indirect.

If we were to talk about educational institutions in Romania, one can observe within them elements that can be likened to participatory management, both in direct and indirect form, depending on how they are specified in the educational policy documents, on the management style approached by the principal and, of course, on the organizational culture of the respective institution. According to Law 198/2023, *"State pre-university educational establishments with legal personality, with the exception of those in the defence, public order and national security system, are run by boards of directors, principals and deputy principals, where appropriate. In the exercise of their duties, the boards of directors and principals shall work with: (a) the Commission for Quality Assessment and Assurance, hereinafter referred to as the CEAC; (b) the Commission for Training and Career Development in Teaching, hereinafter referred to as the CFDCD; (c) the teachers' council; (d) the local public administration authorities; (e) the parents' representative council and parents' associations, where they exist; (f) the trade union organisations affiliated to the representative trade union federations at pre-university education collective bargaining sector level; (g) the pupils' school council"*. (Article 128, para. 1) *"In state educational establishments, the board of directors is the deliberative governing body of the educational establishment"* (Article 128, para. 2) *"The teaching council of the educational establishment is made up of all the teaching staff of the educational establishment, is chaired by the director and meets monthly or whenever necessary, at the proposal of the principal or at the request of at least one third of its members"*. (Article 129, para. 1)

In this sense, it can be seen how the Board of Directors and the Teachers' Council are forms that can be likened to indirect participatory management, as they function within the institution, playing an important role in the analysis and taking of managerial decisions

relevant to the educational establishment. As for direct participatory management, these are rarer. These forms, which are rather informal, being determined and maintained by the principal, through his personality, his leadership style, and the values he upholds and promotes, open up the possibility of informally involving employees or other stakeholders, fully or partially, in the act of management. There are, of course, limits to this, of which every manager must be aware, particularly in terms of the time resources involved in making a decision or solving a problem, the reluctance of some managers to involve the whole team in decision-making or to give them access to administrative matters, the possible need for additional financial resources for participatory activities and, very importantly, the risk of involving subordinates in managerial activities to the detriment of their day-to-day tasks. However, specialists believe that the benefit of involving them in the decision-making process is worthwhile and that these limitations can easily be overcome if there is effective and rational planning of management.

### 3. Conclusions

Direct participative management, even if it does not involve official forms, often has the most significant impact, especially when it becomes a tradition in the institution concerned, with the principal benefiting from the support of all subordinates, decisions benefiting from multifaceted perspectives, and the decision-making process benefiting from a collective assumption of responsibility, including for the implementation of decisions (Nicolescu, 1997).

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## EXPLORING ENTREPRENEURIAL INSIGHTS ON THE INFLUENCE OF MIGRATION ON MOLDOVAN BUSINESSES

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**Abstract:** *The paper explores, from an entrepreneurial perspective, how migration influences the business activities in the Republic of Moldova. The research uses a combination of primary and secondary data, encompassing statistical data analysis and a survey involving 204 entrepreneurs across 25 districts in the Republic of Moldova. The findings reveal that generally, entrepreneurs regard migration as having a negative consequence on their businesses, with sectors such as construction, IT, hospitality, and agriculture being the most affected by fluctuations in the active workforce. Migration's influence on labor availability is significant in both urban and rural areas, although more pronounced in rural regions. Rural entrepreneurs perceived that this migration of workers affected their businesses more adversely compared with urban ones, thus indicating economic disparities across these areas.*

**Keywords:** entrepreneurship, migration, workforce, population, business.

**JEL Classification:** L26, J61.

### 1. Introduction

In an era of increasing global mobility, the interaction between migration and economic processes has been one of the most important points of interest for understanding economic environments. This also creates much relevance for Republic of Moldova as a case study, since it is part of the current wide demographic shifts such as labor migration and emigration trends. Migration plays a key role in Moldova's economic progress, making it indispensable for its development. However, this important phenomenon also poses challenges due to the size of the country. Driving factors for emigration are an unfavorable economic environment and unstable working conditions, characterized by corruption, low wages and job insecurity - all of which are on the rise.

Migration, especially for labor, provides a short-term solution to pressing problems such as unemployment and insufficient income sources in many households. However, in the longer run, migration has an adverse effect on the local labour market and disturbs the holistic growth trajectory of the national economy. The departure of labor forces from a country presents significant challenges for businesses, affecting productivity, operational continuity, and economic stability. Some factors that have been discussed in the literature to explain this phenomenon include globalization, immigration policies, and labor market dynamics in the context of entrepreneurship and labor loss.

The loss of human capital has been noted in the research to have severe consequences for businesses, particularly in terms of innovation and competitiveness (Wadhwa & Salkever, 2012; Roudgar & Richards, 2015; Doyle, 2004). A sudden reduction in the workforce can disrupt services and production lines, leading to a direct impact on business performance (Kikeri, 1998, Aguirre & Reese, 2004). To mitigate these losses, companies often face increased costs to attract and retain local talent or invest in training programs to fill the gaps left by departing workers (Kikeri, 1998). This labor shortage can drive up wages and operational costs for businesses (Ghose et al., 2008), and companies may struggle to find specialized talent, leading to delays and reduced productivity (Kuptsch, 2006).

The compounded effects of labor shortages, higher recruitment costs, and operational disruptions all detract from business competitiveness, particularly in the global market (Kuptsch, 2006). Such disruptions not only hinder growth but also limit innovation,

exacerbating the problem of talent scarcity and driving up operational expenses (Wadhwa & Salkever, 2012). Over time, the cumulative impact can weaken the overall business environment, and add extra loads to companies that compete in the global economy.

In response to these challenges, various policy proposals have emerged, aiming to address the need for better migration management. Doyle (2004) stresses the importance of establishing norms that facilitate labor mobility while ensuring the protection of workers' rights. After all, good migration management is not only necessary for economic stability but also for preventing the social and political upsets brought about by the migration of labor. The exodus of workers can destabilize communities, with local economies and social structures bearing the brunt of the impact. Doyle emphasizes the need for international cooperation to manage migration effectively and limit its adverse social effects (Doyle, 2004). Additionally, Kikeri (1998) suggests that governments must focus on reintegration policies and job creation to alleviate the social costs associated with labor market adjustments.

While the challenges associated with labor migration are significant, some argue that out-migration can also have positive outcomes. Remittances from migrants can bolster local economies, and returning workers can contribute to knowledge transfer, enhancing the skill levels of the local workforce and potentially boosting productivity (Drinkwater et al., 2003). In many cases, migrants themselves return to establish businesses, particularly in rural areas, where they contribute significantly to job creation. Bosworth (2008) notes that in-migrants often own over half of rural microbusinesses, and their entrepreneurial efforts not only create jobs but also inject new vitality into local economies. By leveraging diverse networks, these entrepreneurs enhance local connectivity, contributing to broader economic growth and development (Bosworth & Glasgow, 2012).

The analyze of scientific literature highlights the dual nature of labor migration as both a challenge and an opportunity for business, especially in a globalized economy. It adds that good management of migration is necessary to minimize its disruptive impact and maximize its benefits.

The business consequences of migration are multi-dimensional and cannot be reduced to just statistical figures. The entrepreneurs, main players in the economic environment, have a privileged vantage point that allows them to give value-added information on the problems and opportunities induced by population movements. This paper represents an attempt at contributing to the complex understanding of how migration influences the Moldovan entrepreneurial landscape through the exploration of the entrepreneurs' perspectives. This might also allow for a more in-depth analysis of the different impacts and responses within the different segments of the business community by looking at the opinions of entrepreneurs in the context of the residential area, economic sector, region, and size of the business.

## **2. Data sources and methods**

In order to assess the way migration influence on businesses in the Republic of Moldova, primary data were used, using a survey methodology. This survey was carried out between the months of June and October 2022 and involved a comprehensive pool of 204 entrepreneurs from the Republic of Moldova. The composition of this sample was deliberately structured to reflect the key demographic characteristics that characterize the wider business sector.

The results were generalized and processed using the SPSS statistical analysis programme, which facilitated the synthesis and interpretation of the data collected and helped to extract meaningful patterns and insights. The survey questionnaire, designed to capture the perspectives of the respondents, included a number of closed-ended questions. This design

allowed participants to choose their responses from a pre-defined set of options. In order to quantify the impact of migration on businesses, the survey used a 5-point Likert scale. This scale provided participants with a range of choices to assess the impact of migration, with the points representing different levels of impact: 1 indicating 'significant negative impact', 2 indicating 'negative impact', 3 indicating 'neutral impact', 4 indicating 'positive impact' and 5 indicating 'significant positive impact'.

In addition to the primary survey data, this research integrates statistical data from the National Bureau of Statistics. This auxiliary data source contributes to the external validation of the findings, strengthens the trustworthiness of the research results and provides a well-rounded perspective on population dynamics in the context of migration.

This paper employs the terms "migration" with the following specific meaning: migration refers to the territorial movement of individuals, involving a shift in their place of residence. When this movement occurs within a country, it is termed internal migration, while migration across national borders is referred to as international migration (National Bureau of Statistics of Moldova).

### **3. Results and discussions**

In 2020, Republic of Moldova had just over 3 million inhabitants and over 1.15 million international migrants representing about 32% of the resident population. During the period 2000-2020, the migrant population has steadily grown, at a rate of approximately 100,000 people each five years, up to 248,000 in the period 2015-2020. Considering depopulation and low fertility rates, the contribution of international migrants increased by 2-3% every five years, with big increases in the last few years. This trend has been further enforced by the COVID-19 pandemic (European Training Foundation, 2021).

This significant migration has had two main socio-economic effects. The first is the significant impact of remittances on economic growth and the living conditions of the population. Conversely, the second effect is negative and manifests itself in an overall decline in national human capital development. This is reflected in brain drain, an ageing population structure and reduced work motivation. The brain drain exacerbates a complex human capital problem that entrepreneurs have to face. According to the 2019 World Economic Forum, Republic of Moldova received a score of only 3.2 out of 7 on the Ease of Finding Skilled Employees indicator, ranking last (136th) among the benchmark countries (World Economic Forum, 2019).

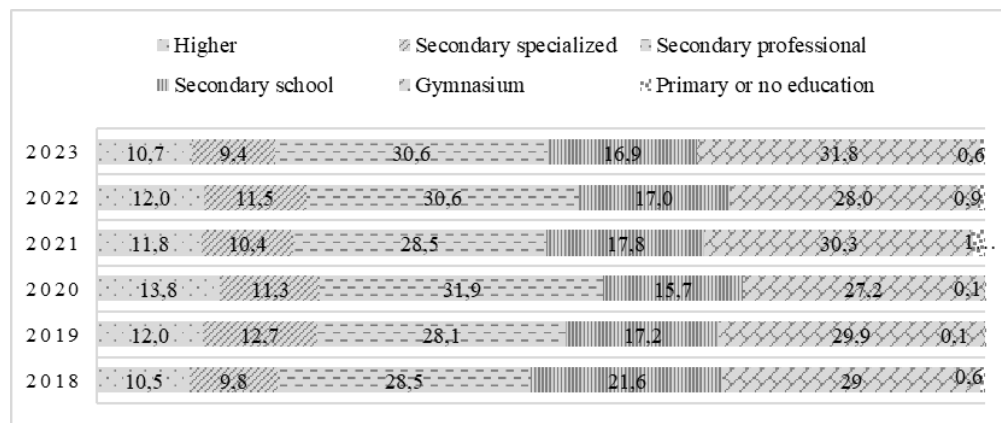
High emigration rates influence population dynamics and the age distribution of the population directly, thus having wide-ranging effects, especially in rural areas characterized by high ageing rates (European Training Foundation, 2021). Republic of Moldova has been experiencing demographic regression since 2014, whereby mortality rates surpass birth rates. As a result, current demographic trends and structural changes in Moldovan population outline a challenging perspective that will surely bring negative implications in terms of human capital formation (Government of the Republic of Moldova, 2017). In the context of the three main age groups associated with the stages of entry and exit from the labour market, a significant decrease of 21.1% in the working age population (16-56/61 years) was observed in the last 10 years (2014-2024), amounting to 377.2 thousand fewer people. Meanwhile, the population beyond working age (57/62 years old) has increased by 4.7% (Table no. 1).

**Table no. 1. Usually resident population size and structure by age group, 2014-2024**

	2014	2020	2021	2022	2023	2024
Total per country, pers.	2869302	2643675	2626588	2565030	2492278	2423287
Share, %	100	100	100	100	100	100
Under the working age (0-15 years)	547196	517536	510396	497735	476683	452927
Share, %	19.1	19.6	19.4	19.4	19.1	18.7
Working age (16-56/61 years)	1786239	1562014	1563039	1511270	1467881	1409001
Share, %	62.3	59.1	59.5	58.9	58.9	58.1
Over working age (57/62+ years)	535867	564125	553153	556025	547714	561359
Share, %	18.7	21.3	21.1	21.7	22.0	23.2

Source: authors' calculations based on National Bureau of Statistics data

The findings of the analysis of the labor migration distribution based on educational attainment highlight the prevalence of migrants with lower educational backgrounds (secondary school, high school, secondary vocational, and specialized secondary) in the overall migration population over the whole reference period. Throughout the course of the analysis, these demographic groups made up, on average, 85% to 90% of the total labor migrants observed over the time period analyzed. On the other hand, between 2018 and 2023, the percentage of migrants with tertiary education varied between 10% and 14%, making them a minority within the migrant community (fig. no.1). Because of their greater capacity for adaptation and flexibility, migrants with lesser levels of education may, therefore, integrate into their new nations more quickly. But this dynamic might also result in a lack of skilled workers on the domestic market, particularly in fields that need for medium or higher education. The aforementioned discovery underscores the complexity and interdependence of the labor migration phenomena, along with its economic and social ramifications on a local and worldwide scale.



**Figure no. 1. Structure of labor migrants by educational attainment, 2018-2023, %**

Source: prepared by the author based on NBS, Labor Force Survey - Employment and unemployment, 2019-2023

In addition to its socio-economic effects, migration, particularly brain drain, poses significant challenges to the competitiveness of businesses in Republic of Moldova:

- Brain drain, or the outflow of highly educated and competent persons, reduces the available talent pool for enterprises in Republic of Moldova. The migration of qualified professionals depletes local businesses of critical human capital required for innovation, productivity, and competitiveness.
- The exodus of highly qualified people from industries like technology, healthcare, and engineering might hinder innovation and technical growth in Moldovan enterprises. With fewer skilled employees participating to research, development, and problem-solving projects, organizations may struggle to remain competitive in fast changing markets.
- The Republic of Moldova is experiencing brain drain at both the level of established enterprises and at entrepreneurial ventures. This could make it even more difficult for start-ups and small businesses to attract and retain qualified employees; thus, they can't expand their activities or innovate as extensively. This can create entrance obstacles for new entrepreneurs and decrease the competitiveness and dynamism of the overall entrepreneurial environment.

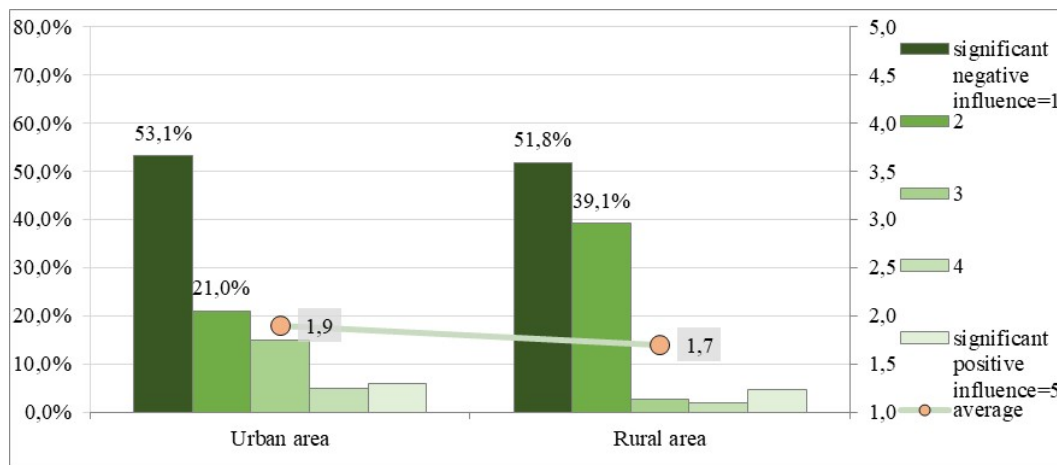
**How migration influences businesses: entrepreneurs' perceptions.** Entrepreneurs' assessment of the impact of migration on businesses shows an overall negative perception. About 79% of entrepreneurs gave scores of minimum 1 and 2 as ratings for these indicators, with an average score of 1.84. That means this is a significant obstacle that affects recruitment negatively and influences the development of the entrepreneurial ecosystem in an unfavorable way.

There are significant differences based on place of residence. The negative assessment of migration as an obstacle is particularly high among entrepreneurs from rural areas, with 90.9% of respondents expressing this view. This figure is 16.8 percentage points higher than for respondents from urban areas, where the negative assessment is 74.1% (fig. no.2).

Many complex socio-economic factors provide grounds for differences between urban and rural areas in the Republic of Moldova. In villages, due to underdeveloped economic activities and infrastructure, there is greater reliance on local manpower and resources. Thus, labor migration can lead to a loss of skilled labor force and entrepreneurs and, consequently, harm the development of local businesses. In addition, rural communities often face challenges in accessing education and training, which hinders competitive business



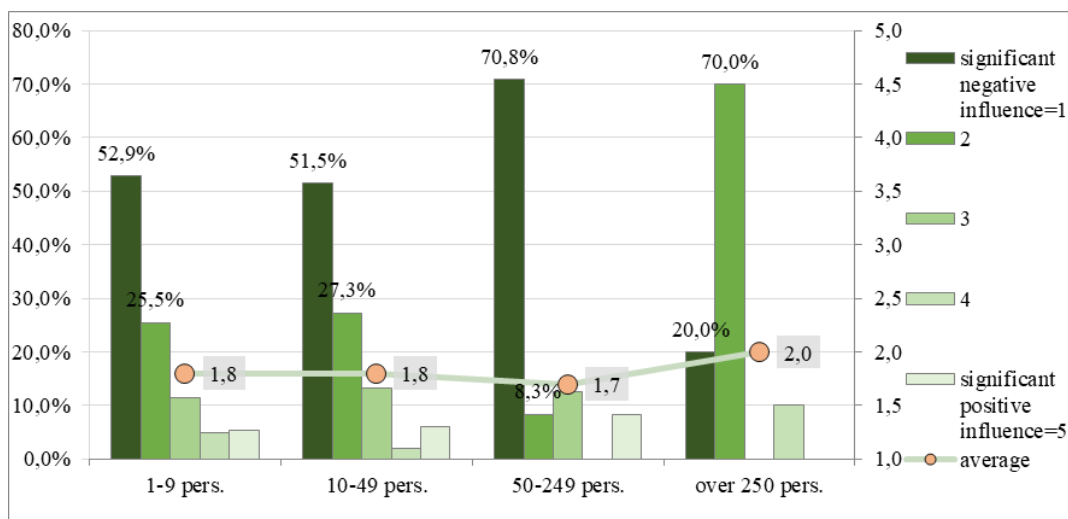
development. The lack of diversified economic activities in rural areas exacerbates the impact of brain drain on the local business ecosystem. Conversely, urban areas generally have better access to resources, markets and educational institutions.



**Figure no. 2. Perception of migration influence on businesses by area, % of respondents assessing the indicator**

Source: developed by the authors based on the survey of entrepreneurs, 2022

Irrespective of the *size of the enterprise*, entrepreneurs have indicated that migration phenomena have a significant impact on business development. In particular, large enterprises have the highest percentage (90%) of respondents recognizing the negative impact of population migration on business development (fig. no.3).

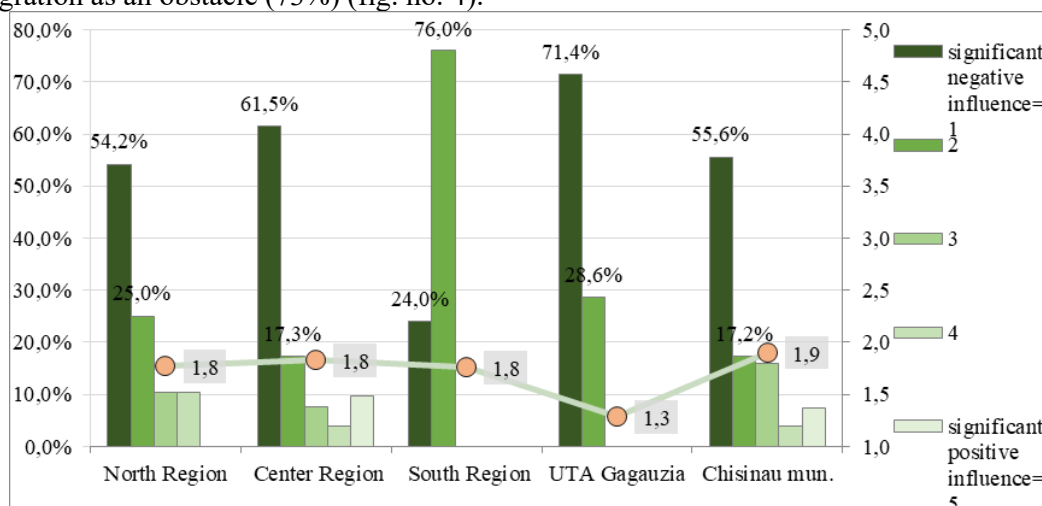


**Figure no. 3. Perception of migration influence on business by size of enterprise, % of respondents assessing the indicator**

Source: developed by the authors based on the survey of entrepreneurs, 2022

The importance of human resources is consistently recognized in all 5 development regions. Internal migration and international migration are seen as obstacles by most entrepreneurs in these regions. In particular, enterprises in the Southern Region and in the

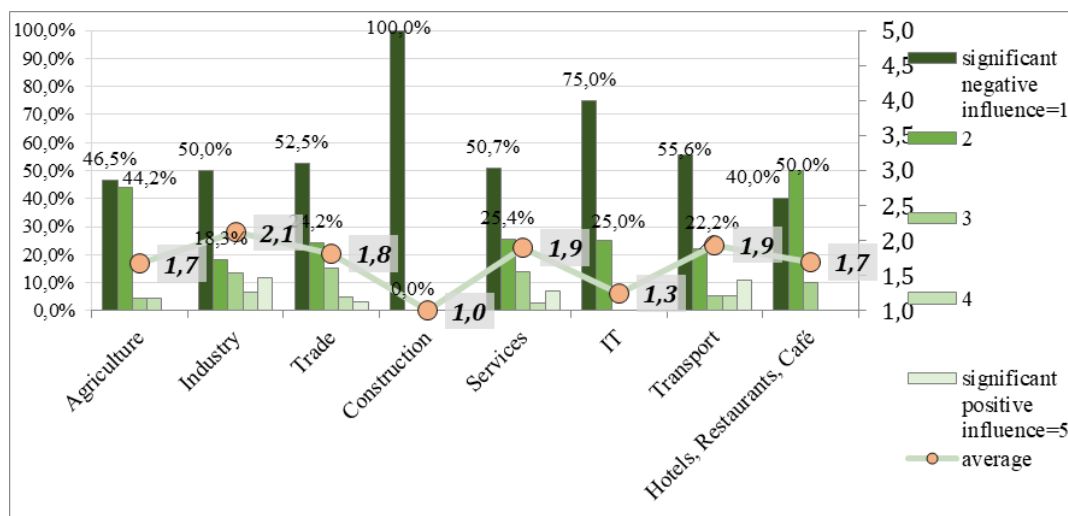
ATU of Gagauzia have an overwhelmingly negative perception of these indicators, with 100% of respondents giving scores of 1 and 2, highlighting the negative impact of this phenomenon on the entrepreneurial ecosystem. Conversely, enterprises in the city of Chisinau had a relatively lower proportion of respondents who perceived population migration as an obstacle (73%) (fig. no. 4).



**Figure no. 4. Perception of migration influence on businesses by region, % of respondents assessing the indicator**

Source: developed by the authors based on the survey of entrepreneurs, 2022

There are also differences in the assessment of the impact of migration across sectors. The construction and IT sectors had a predominantly negative view of these indicators, closely followed by agriculture and hotels and restaurants (an obstacle for 90% of entrepreneurs). In contrast, a lower proportion of respondents in manufacturing (68.3 %) saw population migration as an obstacle to their business (fig.no. 5).



**Figure no. 5. Perception of migration influence on businesses by economic sector, % of respondents assessing the component**

Source: developed by the authors based on the survey of entrepreneurs, 2022

#### 4. Conclusion

Migration is one of the most serious challenges facing Republic of Moldova, as it is clearly reflected in Moldova's labor market and economic development. While emigration can alleviate financial problems that are pressing in the short run, long-term consequences need to be foreseen through strategic plans and extensive policies capable to mitigate its impact.

Workforce reduction poses a serious threat to enterprise growth and economic stability. In the recent years, the country has been facing a significant decline in the working-age population; this is mainly due to reasons such as emigration of skilled manpower and professionals. The official statistical data and opinions from the entrepreneurs point out that migration is mostly adverse for enterprises, especially in the countryside. The impact of migration on labor force availability is more pronounced in rural regions than in urban regions, with a greater share of rural entrepreneurs perceiving it negatively. The main drivers of migration are economic in nature: they include low wage levels, limited employment opportunities, and substandard living conditions in rural areas. Large-scale enterprises (employing more than 250 people) also reported that they were more adversely affected by migration. Certain sectors—such as construction, IT, hospitality, and agriculture—are especially sensitive to fluctuations in the active labor force, making them more vulnerable to the consequences of migration.

In this view, addressing the impacts of migration, particularly brain drain, may be an essential ingredient in enhancing business competitiveness in Republic of Moldova. There is a need to prevent the loss of talent and valuable skills, boost innovation and knowledge sharing, and foster a climate favorable for entrepreneurship. In doing so, not only is the negative impact of migration minimized, but also will strengthen Moldova's economic resilience and position in the global marketplace.

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## PRE AND POST IFRSS EFFECT ON EARNINGS PREDICTABILITY: NIGERIAN LISTED COMPANIES IN PERSPECTIVE

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**Abstract:** To improve the quality of accounting information aimed at facilitating stakeholders' decision-making, such as predicting earnings (EP), the International Financial Reporting Standards (IFRSs) emerged as a globally accepted accounting standard, replacing Generally Accepted Accounting Principles (GAAPs), issued by the International Accounting Standards Board (IASB). Consequently, numerous studies have examined the impact of adopting IFRSs, revealing mixed findings, yet a dearth of evidence exists regarding all listed companies in Nigeria. This study evaluates the effects of pre- and post-IFRSs adoption on EP among companies listed on the Nigerian Stock Exchange (NSE). Utilizing secondary data sources, the study encompasses a population of 168 companies listed on the NSE as of December 31, 2020. Furthermore, the companies in the sample provided annual reports and accounts spanning from 2003 to 2011 for the pre-IFRSs period and from 2011 to 2020 for the post-IFRSs period. The study adopted Ewododhe's (2011) methodology and determined a sample size of fifty-six (56) companies listed on the NSE. Analysis was conducted using Pools, Fixed Effect, and Random Effect estimates. The findings revealed that the period following the adoption of IFRSs did not significantly impact EP proxies, namely Earnings Before Tax (EBT) and Cash Flow from Operations (CFO). Consequently, the study concluded that the adoption of IFRSs among NSE-listed companies did not yield a substantial effect on EP, which could aid stakeholders in predicting future earnings from their investments. Thus, the study recommended that stakeholders of NSE-listed companies should not solely rely on EBT and CFO under IFRSs adoption for forecasting future earnings. Instead, they should consider non-financial indicators such as management competence and integrity, market share growth, and the quality of management strategies and policies.

**Keywords:** Companies listed on the NSE, Earnings predictability, Pre-and post-IFRSs adoption, Stakeholders' theory.

**JEL Classification:** M41.

### 1. Introduction

To address the limitations and inconsistencies present in national accounting standards such as Generally Accepted Accounting Principles (GAAP), International Financial Reporting Standards (IFRS) emerged as a globally recognized accounting framework aimed at supplanting GAAP. Moreover, in a bid to foster international trade and investment and promote uniformity in financial reporting across borders, IFRS was introduced. The primary objective of IFRS is to facilitate national financial development by encouraging nations to conform to standardized methods of preparing and presenting financial reports, as highlighted by Okoughenu, Evbota, and Amughoro (2019). Nigeria is among the countries that have adopted IFRS, aiming to deliver high-quality financial reporting that meets the needs of various stakeholders. Issued by the International Accounting Standards Board (IASB), IFRS emphasizes current cost accounting as an alternative to historical cost accounting, which is often criticized for its failure to accurately reflect the economic realities of a business entity's transactions during a given period.

Investors' perception of earnings predictability (EP) in the market, as discussed by Ebirien, Nkanbia-Davies, and Chukwu (2019), focuses on how previous earnings can

elucidate current earnings. Simamora (2018) argues that EP is contingent upon the caliber of a company's Profit before Tax (PBT) and Cash Flow from Operating Activities (OCF). When historical earnings data (i.e., PBT and OCF) inadequately estimate present earnings (i.e., PBT and CFO), as indicated by Schiemann and Guenther (2013), predictability tends to be diminished, and vice versa. EP hinges on the quality of information revealed in financial reports, as emphasized by Indrarini, Chandrarin, and Subiyantoro (2019), where superior accounting information quality leads to more informed investment decisions, aiding users in forecasting future cash flows and stock returns. Consequently, the study of EP holds significance for users of accounting information in multiple respects. For instance, Ashbaugh and Pincus (2001) argue that EP is crucial for assessing firm valuation, while Imhoff and Lobo (1992) suggest EP can elucidate the accuracy of analysts' predictions and the coefficients of earnings responses. Given the diverse roles EP plays in enhancing users' information, and considering Ebirien et al.'s (2019) assertion that one of the motivations behind IASB issuing IFRS is to improve accounting quality, this study is driven by the curiosity to investigate whether the period post-IFRS implementation affects earnings predictability differently compared to the pre-IFRS era.

Prior research presents conflicting findings regarding the impact of IFRSs on earnings predictability. While some studies, such as Ball (2006) and Silva, Fraga, Noriller, and Lopes (2019), suggest that IFRS adoption increases earnings volatility, thus reducing the accuracy of earnings predictability, others like Soderstrom and Sun (2007) argue that IFRSs enhance reporting quality, providing investors with better information to forecast future earnings. Additionally, Preiato et al. (2009), as cited by Rizki and Rosyidiana (2017) and Nwaogwugwu (2020), contend that the effect of IFRS adoption on the decision usefulness of financial statements, enabling users to predict future earnings, remains uncertain. Consequently, further research is necessary to validate these findings and understand the impact of IFRS adoption on business operations, particularly earnings predictability. Moreover, existing evidence, especially in Nigeria, such as studies by Ebirien, Nkanbia-Davies, and Chukwu (2019) and Nwaogwugwu (2020), tends to focus on the financial sector, leaving other sectors understudied.

Furthermore, while robust evidence exists regarding earnings predictability (EP) measurement, such as pre-IFRSs indicators like profit before tax (PBT) and cash flow from operations (CFO), there is a dearth of evidence regarding the post-IFRSs period, particularly in assessing how both periods have influenced EP. Therefore, this study aims to address these gaps in the literature by specifically investigating the following questions: (i) What is the impact of pre- and post-IFRSs on the PBT of firms listed on the Nigeria Stock Exchange (NSE)? (ii) To what extent do pre- and post-IFRSs periods affect the CFO of firms listed on the Nigeria Stock Exchange (NSE)?

The primary aim of this study is to evaluate the impact of pre- and post-IFRS adoption on the earnings performance (EP) of companies listed on the NSE. Specifically, the objectives are as follows: (i) to explore whether earnings before tax (EBT) during the post-IFRS adoption period exhibit a more significant effect compared to the pre-IFRS adoption period for NSE-listed companies, and (ii) to assess whether cash flow from operations (CFO) during the post-IFRS adoption period demonstrate a more substantial impact compared to the pre-IFRS adoption period for NSE-listed companies. To address these objectives, the study formulates the following null hypotheses:

H01: There is no significantly higher effect on EBT during the post-IFRS adoption period compared to the pre-IFRS adoption period for companies listed on the NSE.

H02: There is no significantly higher effect on CFO during the post-IFRS adoption period compared to the pre-IFRS adoption period for companies listed on the NSE.

## **2. Literature Review**

### **2.1 Conceptual Review**

**International Financial Reporting Standards:** These standards, issued by the International Accounting Standards Board (IASB) headquartered in London, United Kingdom, establish consistent principles for financial reporting, bridging the differences among national standards. According to Eke (2018), International Financial Reporting Standards (IFRSs) are characterized by a focus on objectives and principles, aiming to provide a universal framework applicable to financial reporting by public interest companies worldwide. Taking advantage of the challenging global economic conditions, Nwaogwugwu (2020) highlighted Nigeria's decision to adopt and begin implementing IFRSs in 2012, aligning with other countries. To ensure adherence to these standards, the Financial Reporting Council of Nigeria (FRCN) mandated that all publicly listed companies prepare their financial statements in accordance with IFRSs.

Hence, by aiming to transition from historical accounting-based measurement to current accounting practices and encompassing both rule-based and principle-based standards, IFRSs diverge from GAAPs, which offer flexibility in accounting measurement and estimation. Consequently, IFRSs have the potential to provide data with greater value relevance and improve the accuracy of analysts' future earnings predictions. Similarly, according to Barth, Landsman, and Lang (2008), IFRSs are acknowledged for their capacity to enhance the quality of accounting information due, in part, to their principle-based nature, thereby better reflecting a company's financial position and aiding in forecasting future earnings for the firm.

**Earnings Predictability (EP):** According to Uwuigbe, Uyoyoghene, Jafaru, Uwuigbe, and Jimoh (2017), earnings predictability (EP) can be described as the process of evaluating how current earnings can accurately anticipate or project future earnings of firms. EP serves the purpose of enhancing the precision of earnings forecasts by enabling earnings to predict themselves and other business activities, as emphasized by Canina and Potter (2019). Olaniyi, Abogun, and Salam (2020) identify determinants of earnings predictability, which are closely linked to general determinants of earnings quality. Thus, EP signifies the capacity of past earnings to forecast future earnings, representing the earnings power of a company.

Investors utilize various variables to anticipate earnings, including return on equity, price-to-earnings ratio, and stock options, as noted by Dakka and Rostami (2015). Furthermore, Simamora (2018) suggests that EP can be better understood through pre-tax profit (PBT) and cash flow from operations (CFO), given their direct correlation with the entity's investment returns. Similarly, Mollah et al. (2015) argue that the ability of current earnings to forecast both PBT and future cash flows defines PBT and cash flow predictability, reflecting quality earnings associated with PBT and CFO.

However, Khaleghi (2000) points out that variables such as organizational size, financial leverage, forecast horizon, organizational life, and profit changes can influence the accuracy of an entity's EP.

Investors depend on the information presented in publicly available annual reports and financial statements of companies because they lack direct communication channels with these organizations. According to Okoughenu et al. (2019), adherence to high-quality standards, such as fair value accounting, can mitigate information asymmetry and

manipulation, thus improving decision-making quality. However, Dichev and Tang (2009) argue that some believe fair value accounting introduces earnings volatility, especially in illiquid capital markets, potentially impacting a business entity's earnings per share (EPS).

Moreover, EPS can diminish information asymmetry between major shareholders and potential investors (Dakka & Rostami, 2015). Manson and Coakley (2009) suggest that EPS can influence user behavior in determining stock prices and trading volume. Consequently, it can be inferred from these perspectives that EPS involves utilizing past earnings reported in a company's annual reports and financial statements to forecast future earnings. This aids investors in evaluating a business entity's profitability performance, the current value of its shares or the entity itself, and assessing investment and financial risks.

## 2.2 Theoretical Review

Typically, the examination of accounting standards is grounded in a positive perspective of accounting theory. This perspective, as outlined by Dumitru (2011), regards accounting information as an economic asset capable of effectively addressing financial and investment challenges for its users. However, Odoemelam, Okafor, and Ofoegbu (2019) argue that this viewpoint can be constrained within agency and stakeholders' theories. Consequently, in this investigation, recognizing the significance of Environmental Performance (EP) to stakeholders, we adopt the theoretical framework of stakeholders' theory, which is elaborated upon as follows:

**Stakeholder theory:** In 1984, Freeman introduced stakeholders' theory, which posited that directors should be entrusted to manage a company in a manner that creates sustainable long-term value, considering the various stakeholders such as creditors, government, shareholders, employees, customers, and the general public (Adegbe, Akintoye, & Isiaka, 2019). Hoffmann and Zülch (2014) further elucidated this theory, linking it to accounting lobbying, while Ahmad (2015) proposed that stakeholders' lobbying decisions are influenced by their power, urgency, and legitimacy.

IFRSs, as high-quality standards established by the IASB, aim to provide stakeholders with quality information to enhance decision-making and create value in their investments within any economy (Hope, Thomas, & Vyas, 2017). The continuous demand for high-quality information from stakeholders, among other factors, has led to the widespread adoption of IFRSs by countries worldwide (Odoemelam et al., 2019). Given this framework, stakeholders' theory predicts that the adoption of IFRSs will positively impact earnings performance (EP) within business entities.

## 2.3 Empirical Review

Kundu and Banerjee (2021) utilized a sample comprising sixty-seven (67) large-cap Indian stocks spanning thirty-three (33) quarters from 2010 to 2018 to investigate the influence of quarterly earnings announcements on stock returns in India. Employing panel data estimation techniques with fixed and random effects, the study tested hypotheses, revealing that all stocks exhibited return premiums during the preannouncement period. This suggests that companies reporting improved earnings figures compared to the previous period which generated significantly higher stock returns.

Mensah (2020) examined pre-IFRS adoption (2001 to 2006) and post-adoption (2007 to 2014) periods in Ghana to assess their impact on the quality of financial statements among listed manufacturing firms. The study analyzed data from audited annual reports of eleven (11) manufacturing firms using ordinary least squares regression techniques. The regression analysis indicated a reduction in earnings management post-adoption compared to pre-adoption, signifying a noteworthy enhancement in quality following the adoption of IFRS.



Lee, Walker, and Zeng (2020) delved into the anticipation of earnings reflected in share prices (SPAE) within the context of China's adoption of IFRSs. Leveraging the unique institutional framework in China, the study differentiated between the initial adoption of IFRS in 2007 as a treatment group and the period post-IFRS adoption as a control group. Their analysis unveiled that SPAE demonstrated improvement during the initial adoption of IFRS in 2007 compared to the subsequent post-IFRS adoption period, aligning with the notion of enhanced transparency facilitating investors' ability to forecast future earnings.

Nwaogwugwu (2020) examined the impact of IFRS adoption on the financial performance and valuation of listed banks in Nigeria, utilizing a sample comprising five banks observed over eight years. The observation period spanned from 2012 to 2015 post-IFRS adoption, and from 2008 to 2011 pre-IFRS adoption. Employing panel data analysis, the study incorporated return on assets, return on equity, and earnings per share alongside an IFRS dummy variable as independent variables in the model. Contrary to expectations, the results from the fixed regression model suggested that the adoption of IFRS in Nigeria did not lead to enhanced performance or increased value.

Eluyela, Adetula, Oladipo, Nwanji, Adegbola, Ajayi, and Falaye (2019) conducted a study where they gathered data from the annual reports of listed SMEs in Nigeria to compare the periods before and after the adoption of IFRS from 2012 to 2015. The study utilized profitability, liquidity, and market ratios, represented by return on capital employed, return on equity, debt to equity, and earnings per share respectively. Their analysis, including the one-sample Kolmogorov-Smirnov test, descriptive statistics, and Mann-Whitney U-test, concluded that there wasn't a significant difference between profitability and leverage ratios in IFRS and NGAAP-based financial statements of listed SMEs. However, a notable difference was found in market ratios prepared under IFRS compared to NGAAP-based financial statements of listed SMEs.

In another study by Ebirien et al. (2019), they examined the impact of the mandatory adoption of IFRSs on the earnings performance (EP) of deposit money banks (DMBs) and insurance firms listed on the Nigerian Stock Exchange (NSE). They analyzed one hundred and ninety-six firm-year observations spanning from 2008 to 2014. Using regression analysis, they tested hypotheses and found that the mandatory adoption of IFRS did not lead to an improvement in EP for firms in the services sector, based on earnings and cash flow from operations (CFO). Additionally, they observed that EP during the post-mandatory IFRS adoption period did not significantly differ between DMBs and insurance firms.

Adedayo, Foluke, and Paul (2018) investigated the adoption of IFRS in Nigeria, utilizing a sample of eleven banks to evaluate its influence on profitability ratios. They analyzed data spanning a three-year period before IFRS implementation (2009-2011) and a three-year period afterward (2013-2015) using the Wilcoxon Signed Rank test and Normality test. The findings indicated that the adoption of IFRS did not yield significant effects on the profitability ratios of listed banks in Nigeria.

Olayinka, Paul, and Olaoye (2017) gathered data from fifty-two quoted companies operating in the financial services and consumer goods sectors in Nigeria. They examined the value relevance of accounting information content during both pre- and post-IFRS periods spanning from 2008 to 2015. Employing price and returns regression models for analysis, the study revealed improvements in CFO and net profit due to the adoption of IFRS.

Uwuigbe et al. (2017) investigated the impact of IFRS adoption on the earning persistence (EP) of eleven listed banks in Nigeria. Their study covered the periods 2010 to 2011 (pre-adoption) and 2013 to 2014 (post-adoption). Utilizing regression statistical

techniques, they found a decrease in the ability of current earnings to predict future earnings after the adoption of IFRS in Nigeria, indicating a negative impact of IFRS adoption on EP.

Uwuigbe, Emeni, Uwuigbe, and Ataiwrehe (2016) investigated the impact of adopting IFRSs on the accounting quality of banks listed on the NSE. Their study, conducted from 2010 to 2013, utilized ordinary least square regression to analyze the data. Findings indicated that following the implementation of IFRS in Nigeria, there was a notable increase in income smoothing and earnings management, indicating a decline in the accounting quality of the banks.

### 3. Methodology

Due to the absence of direct control over the independent variables and reliance on historical data, this study employed an ex-post facto research design to investigate the effects of the transition to IFRS on earnings performance (EP) of companies listed on the NSE. The study utilized secondary sources and included a population of one hundred and sixty-eight (168) companies listed on the NSE as of December 31, 2020. Among these, firms have annual reports and accounts available from 2003 to 2011 for pre-IFRS periods and from 2011 to 2020 for post-IFRS periods. The sample size of fifty-six (56) companies listed on the NSE is determined using Ewododhe's (2011) formula. Data was collected longitudinally across firms (panel data), and ordinary least squares regression analysis was employed to analyze the data.

The research identified the following equations to accommodate each individual explanatory variable in the study:

$$PBT_{it} = \beta_0 + \beta_1$$

$$Pre-IFRS_{sit} + eit \dots \dots \dots 3.1$$

$$CFO_{it} = \beta_0 + \beta_1$$

$$Pre-IFRS_{sit} + eit \dots \dots \dots 3.2$$

Equation 3.1 and 3.2 are regression models specified to demonstrate the effect of pre-IFRSs on EP (i.e., proxies PBT and CFO).

$$PBT_{it} = \beta_0 + \beta_1$$

$$Post-IFRS_{sit} + eit \dots \dots \dots 3.3$$

$$CFO_{it} = \beta_0 + \beta_1$$

$$Post-IFRS_{sit} + eit \dots \dots \dots 3.4$$

Equation 3.3 and 3.4 are regression models specified to demonstrate the effect of post-IFRSs on EP (i.e., proxies PBT and CFO).

PBT represents profit before tax, indicating the total profit available for equity holders prior to taxes. CFO denotes cash flow from operating activities, representing the net cash flow from operations. Pre-IFRSs is indicated by a dummy variable set to '0', otherwise '1' for Post-IFRS.  $\beta_1$  stands for the coefficient of the explanatory variable, while *eit* signifies disturbance terms accounting for effects from other variables not considered. The research adopts  $H_0$  if the test's P-value is greater than or equal to 0.05; otherwise, it accepts  $H_1$ .

## 4. Data Analysis and Discussion of Findings

### 4.1 Data Analysis

**Table 1 OLS Regression Result for Model 1 PBT on Pre-IFRSs**

Variables	Pred. Sign	POLS Estimate			Fixed Effect (FE) Estimate			Random Effect (RE) Estimate		
		Coef	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		3.08	11.02	0.00*	-10.21	-0.22	0.22	5.31	0.32	0.04*
Pre-IFRSs	-	0.03	0.16	0.00*	0.09	0.01	0.07	0.38	0.11	0.00*
R-Sq.		0.66			0.59			0.65		
Adj R-sq.		0.23			0.19			0.21		
F-stat.		2.08			2.37			2.19		
Prob.		0.00			0.04			0.00		
Durbin-Watson stat.		1.45			1.91			2.01		

Source: Authors' computation (2022).

Note: \*p < 0.05.

### **Table 2 Hausman Test (HT)**

Equation: EQ01

Test cross-section random effects

Test Summary	Chi-Sq. Statistic		
	Chi-Sq.	d.f.	Prob.
Cross-section random	2.03	1	0.09

From Table 1, the Durbin-Watson statistic exhibits a value very close to 2.00, indicating, according to Mundfrom, Smith, and Kay (2018), the absence of multicollinearity issues in the regression model. The F-statistic values of 2.08 for POOL Estimate, 2.37 for FE, and 2.19 for RE are observed. Adeyemi and Bamigboye (2021) suggest that FE and RE are preferable over POOL estimation due to their higher F-statistic values. Table 2 presents the Hausman Test (HT) results, indicating a probability value of 0.09, which exceeds the significance level of 0.05. Thus, it suggested that RE is suitable for interpreting the regression results.

Consequently, RE analysis demonstrates an R-squared value of 65%, suggesting that 35% of the systematic variation in the dependent variable (PBT) remains unexplained by other variables, assuming no heterogeneity effects across the sampled firms. Moreover, it reveals a significant positive effect of pre-IFRS adoption on EP (proxied by PBT) at the 5% level, with a coefficient value of 0.38, indicating that an increase in the pre-IFRS period leads to an increase in EP. This outcome will be compared with the results presented in Table 3 to either accept or reject the formulated null hypothesis (H0).

**Table 3 OLS Regression Result for Model 3 PBT on Post-IFRSs**

Variables	Pred. Sign	POLS Estimate			Fixed Effect (FE) Estimate			Random Effect (RE) Estimate		
		Coef	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		23.12	0.46	0.11	33.01	0.20	0.08	- 27.90	- 0.24	0.00*
Post-IFRSs	+	1.02	0.99	0.19	1.22	0.13	0.19	0.55	0.23	0.17
R-Sq.		0.66			0.59			0.51		
Adj R-sq.		0.22			0.19			0.15		
F-stat.		2.10			2.22			2.16		
Prob.		0.00			0.00			0.00		
Durbin-Watson stat.		1.45			1.61			1.89		

Source: Authors' computation (2022).

Note: \*p < 0.05.

**Table 4 Hausman Test (HT)**

Equation: EQ01

Test cross-section random effects

Test Summary	Chi-Sq. Statistic			Prob.
	Chi-Sq.	d.f.		
Cross-section random	2.25	1		0.12

According to Table 3, the Durbin-Watson statistic closely approaches 2.00, indicating, as per Mundfrom, Smith, and Kay (2018), the absence of multicollinearity issues in the regression model. The F-statistic value of 2.10 from the POOL Estimate is lower than both FE (2.22) and RE (2.16), suggesting, as per Adeyemi and Bamigboye (2021), that FE and RE estimations outperform POOL estimation. Table 4 presents the Hausman Test (HT) to determine the suitability of either FE or RE for interpreting the regression results. With a probability value of 0.12 exceeding 0.05, the HT suggests that RE is appropriate for interpreting the analysis results.

Consequently, RE reveals an R-square of 51%, indicating that 49% of the systematic variation in the dependent variable (PBT) remains unexplained by other variables, assuming the study did not consider heterogeneity effects across sampled firms. Furthermore, it indicates that post-IFRS adoption has a positively insignificant effect on EP proxies by PBT at the 5% significance level, with a coefficient value of 0.55, implying that an increase in the post-IFRS period would lead to an increase in EP.

**Table 5 OLS Regression Result for Model 3 CFO on Pre-IFRSs**

Variables	Pred. Sign	POLS Estimate			Fixed Effect (FE) Estimate			Random Effect (RE) Estimate		
		Coef	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		44.12	1.90	0.00*	38.01	0.23	0.03*	26.10	0.29	0.02*
Pre-IFRSs	-	0.51	0.04	0.00*	0.12	0.03	0.00*	- 0.27	-0.23	0.00*
R-Sq.		0.52			0.71			0.77		
Adj R-sq.		0.14			0.25			0.26		
F-stat.		2.10			2.35			2.26		
Prob.		0.03			0.00			0.00		
Durbin-Watson stat.		2.09			2.01			1.99		

Source: Authors' computation (2022).

Note: \*p < 0.05.

**Table 6 Hausman Test (HT)**

Equation: EQ01

Test cross-section random effects

Test Summary	Chi-Sq.		
	Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.07	1	0.04

According to Table 5, the Durbin-Watson statistic is close to 2.00, which, as Mundfrom, Smith, and Kay (2018) suggest, implies the absence of multicollinearity issues in the regression model. Furthermore, the F-statistic value of 2.10 for the POOL Estimate is lower than the values for FE (2.35) and RE (2.26), as noted by Adeyemi and Bamigboye (2021), indicating that FE and RE estimations may be superior to POOL estimation.

Table 6 presents the Hausman Test (HT), revealing a probability value of 0.04, which is below the significance threshold of 0.05. This suggests that FE is suitable for interpreting the analysis results.

Consequently, the FE estimation outcome demonstrates an R-squared value of 71%, indicating that 29% of the systematic variation in the dependent variable (CFO) remains unexplained by other variables, assuming the study did not account for heterogeneity across sampled firms. Moreover, the FE results show that pre-IFRS adoption has a positive and significant effect on EP proxies by CFO at the 5% significance level, with a coefficient value of 0.12, implying that an increase in the pre-IFRS period would lead to an increase in EP.

These findings will be compared with those presented in Table 7 below to either accept or reject the formulated null hypothesis (H0).

**Table 7 OLS Regression Result for Model 4 CFO on Post-IFRSs**

Variables	Pred. Sign	POLS Estimate			Fixed Effect (FE) Estimate			Random Effect (RE) Estimate		
		Coef	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		-9.04	-0.16	0.09	-4.01	-0.22	0.13	17.10	0.29	0.00*
Post-IFRSs	+	0.94	0.20	0.00*	1.08	0.02	0.00*	-0.52	-0.20	0.15
R-Sq.		0.48			0.52			0.53		
Adj R-sq.		0.10			0.17			0.18		
F-stat.		2.38			2.99			2.44		
Prob.		0.03			0.01			0.01		
Durbin-Watson stat.		1.53			2.01			1.90		

Source: Authors' computation (2022).

Note: \*p < 0.05.

**Table 8 Hausman Test (HT)**

Equation: EQ01

Test cross-section random effects

Test Summary	Chi-Sq. Statistic		
	Chi-Sq.	d.f.	Prob.
Cross-section random	2.05	1	0.51

According to Table 7, the Durbin-Watson statistic closely approximates 2.00, suggesting, as indicated by Mundfrom, Smith, and Kay (2018), the absence of multicollinearity issues in the regression model. Additionally, the F-statistic values are 2.38 for POOL Estimate, 2.99 for FE, and 2.44 for RE. According to Adeyemi and Bamigboye (2021), this implies that FE and RE estimations outperform POOL estimation. Table 8 presents the HT, revealing a probability value of 0.04, which is less than the significance level of 0.05, suggesting that FE is suitable for interpreting the analysis results. Furthermore, the HT from Table 8 suggests that RE is appropriate for interpreting the results in Table 7, as the probability value of 0.51 exceeds 0.05.

Consequently, the results of the RE estimation indicate an R-squared value of 53%, indicating that 47% of the systematic variation in the dependent variable (CFO) remains unexplained by other variables, assuming no consideration of heterogeneity effects across the sampled firms. The F-statistic value indicates a significant linear relationship between the dependent and independent variables. Furthermore, the results indicate that post-IFRS adoption has a negative and insignificant effect on EP proxies by CFO at the 5% significance level, with a coefficient value of -0.55, suggesting that an increase in the post-IFRS period leads to a reduction in EP.

## 4.2 Test of Hypotheses

**Table 9 Restated Hypotheses, Results and Hypotheses Selection**

Hypotheses Restated	Results		Hypotheses Selection
<b>H0<sub>1</sub>:</b> EBT under the post-IFRSs adoption period show no higher significant effect than the pre-IFRSs adoption period of the companies listed on the NSE.	<b>Pre-IFRSs Adoption</b>	<b>Post-IFRSs Adoption</b>	Accept
	Positive/Significant	Positive/Insignificant	
<b>H0<sub>2</sub>:</b> CFO under the post-IFRSs adoption period show no higher significant effect than the pre-IFRSs adoption period of the companies listed on the NSE.	Positive/Significant	Negative/Insignificant	Accept

Source: Authors' Computation (2022).

## 4.3 Discussion of Findings

The findings regarding hypothesis 1 in the study indicated that during the post-IFRS adoption period, there is no statistically significant increase in Earnings Before Tax (EBT) compared to the pre-IFRS adoption period for companies listed on the NSE. This suggests that implementing IFRS, particularly using fair value measurement or current-based accounting methods, does not notably boost EBT, thus making it less reliable for investors in predicting future investment earnings. These results align with the stakeholders' theory, suggesting a positive relationship between the post-IFRS adoption period and Earnings Perceptions (EP). They also support previous studies by Nwaogwugwu (2020), Adedayo et al. (2018), and Uwuigbe et al. (2017), which found that post-IFRS adoption did not significantly enhance EP and might even have a negative impact.

However, these findings contradict the conclusions drawn by Mensah (2020) and Olayinka et al. (2017), who reported a positive and significant impact of post-IFRS adoption on EBT compared to the pre-IFRS adoption period.

Regarding hypothesis 2, the results indicated that during the post-IFRS adoption period, there is no significant increase in Cash Flow from Operations (CFO) compared to the pre-IFRS adoption period for companies listed on the NSE. This implies that implementing IFRS, particularly using fair value measurement or current-based accounting methods, does not significantly enhance CFO, thus making it less reliable for stakeholders, such as investors, to predict future earnings from their investments. These findings do not support the stakeholders' theory predicting a positive effect of the post-IFRS adoption period on EP. Additionally, they contradict the outcomes of the study by Olayinka et al. (2017), which reported improvements in CFO and net profit as a result of IFRS adoption in Nigeria.

## 5. Conclusions and Recommendations

This research conducted a comparative analysis to assess the impact of adopting International Financial Reporting Standards (IFRSs) on the earnings performance (EP) of companies listed on the NSE. The comparison involved examining the differences between the periods before and after the adoption of IFRSs. In this study, pre- and post-IFRSs adoption periods were represented by dummy variables, while EP was measured using variables such as earnings before tax (EBT) and cash flow from operations (CFO).

Various estimation models, including Pooled Ordinary Least Squares (POLS), Fixed Effects (FE), and Random Effects (RE), were employed to evaluate the influence of pre- and

post-IFRSs adoption on EBT and CFO. The results of these tests indicated that the pre-IFRSs adoption period had a significant impact on both EBT and CFO when compared to the post-IFRSs adoption period. Consequently, the study concludes that the adoption of IFRSs by companies listed on the NSE did not lead to a significant effect on EP, which could aid stakeholders in predicting future earnings from their investments.

Therefore, the study recommended that stakeholders of companies listed on the NSE should not solely rely on EBT and CFO under IFRSs adoption to forecast future earnings. Instead, they should consider non-financial indicators such as management competency and integrity, market share growth, and the quality of managements strategies and policies for a more comprehensive understanding of future earnings potential.

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## OPTION AGREEMENT. PROMISE OF SALE. RIGHT OF PRE-RECEPTION

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**Abstract:** *In the case of the option pact regarding a sales contract on a determined individual asset (cert), between the date of conclusion of the pact and the date of exercise of the option or, as the case may be, that of the expiration of the option term, the asset that constitutes the object of the pact cannot be disposed of. The right of pre-emption is a priority right to purchase recognized by law for certain persons. The right of pre-emption is different from the right of preference which has a contractual nature. The right of preemption is a variant of the unilateral promise to sell, but in this situation the owner of the thing does not oblige himself to sell, but only to give preference to a person if he decides to sell a certain thing.*

**Keywords:** *preemption, option agreement, preemptor, preference.*

**JEL Classification:** *K0, K1.*

The sale-purchase contract produces effects from the moment of conclusion, i.e. from the moment of consent, the realization of the agreement of will of the parties on the good and the price, even if the thing has not been handed over and the price has not been paid yet, if the law does not provide or the parties I do not agree otherwise.

There are situations when, at the conclusion of the contract, the parties only assume the obligation to conclude the sale-purchase contract in the future. Thus, the situations are: the option pact; promise to sell; right of preemption.

a) the option agreement regarding the sale-purchase contract.

According to art. 1668 of the Civil Code, in the case of an option agreement regarding a contract for the sale of a specific individual asset (cert), between the date of conclusion of the agreement and the date of exercise of the option or, as the case may be, that of the expiration of the option term, no of the good that constitutes the object of the agreement.

Characteristics:

- the option agreement is a type of offer;
- the option agreement must contain the elements of the future contract that will be concluded;
- the option pact cannot be revoked unilaterally by the obligee;
- the beneficiary exercises his right to option in the sense that he accepts the promise made.

In the case of the sale with the right of option, the contract will be concluded by exercising the right of option by the beneficiary of the agreed pact.

The legal status of the asset is regulated during the existence of the pact and until the expiration of the option term, the asset cannot be alienated.

When the agreement concerns tabular rights, the option right is noted in the land register. The pact must be recorded in the land register, an operation that signifies the prohibition of the sale by the bidder to another person. If the beneficiary refuses the offer within the time frame set for the option, the bidder can ask for the notation to be deleted from the land register.

The right of option is canceled ex officio if, by the expiration of the option term, a declaration of exercise of the option has not been registered, accompanied by proof of its communication to the other party.

By reference to the provisions of art. 1278 of the Civil Code, the option agreement includes an irrevocable offer to contract, which in principle belongs to the owner, having the

effect of making the asset unavailable for this period until the exercise of the option, but no later than the expiration of the term fixed for option.

The object of the option agreement is the obligation to give, to transmit the ownership of a building by exercising the option to buy.

If the beneficiary accepts the offer, i.e. from the moment the pact is concluded, the offeror cannot go back on the offer to sell.

When the parties agree that one of them remains bound by their declaration of will, and the other can accept or refuse it, that declaration is considered an irrevocable offer and produces the effects provided for in art. 1191<sup>12</sup>.

If the parties have not agreed on a deadline for acceptance, it can be established by the court by presidential ordinance, with the summons of the parties.

The option pact must contain all the elements of the contract that the parties aim to conclude, so that it can be concluded by the simple acceptance of the beneficiary of the option.

The contract is concluded by exercising the option in the sense of acceptance by the beneficiary of the declaration of intent of the other party, under the conditions agreed by the pact.

Both the option agreement and the declaration of acceptance must be concluded in the form prescribed by law for the contract that the parties seek to conclude.

b) The promise to sell and the promise to buy

A unilateral promise to sell is a contract by which a party called the promisor undertakes to sell a good, at a determined price, to the other party called the beneficiary, who accepts the promise.

The unilateral promise to sell or the "option to sell" or the promise to buy, represents a contract by which one party, the "promisor", undertakes to the other party, the "beneficiary", to sell him a certain good, on the day in which the latter will decide to buy it (Chirica, 1997, p.18).

The unilateral promise to sell should not be confused with the offer to contract (policy)<sup>13</sup>, because the first is a contract, while the second (offer) is only a unilateral manifestation of will, which may or may not be accepted by its recipient. Consequently, an option to sell cannot be withdrawn, unlike an offer which can be withdrawn before it is accepted by the offeree.

The promise to sell is not a contract of sale, being in fact a pre-contract<sup>14</sup>.

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<sup>12</sup> Art. 1191 of the Civil Code

Irrevocable offer

The offer is irrevocable as soon as its author undertakes to maintain it for a certain period. The offer is also irrevocable when it can be considered as such based on the agreement of the parties, the established practices between them, the negotiations, the content of the offer or customs.

The declaration of revocation of an irrevocable offer has no effect.

Art.1192 The term of acceptance

The term of acceptance runs from the moment the offer reaches the recipient.

<sup>13</sup> A solicitation is an offer to contract, that is, an offer made to a person or the public to enter into a contract under certain conditions.

<sup>14</sup> Decision no. 12 of the ÎCCJ appealed in the interest of the law, published in M. Of. no. 678/07.09.2015.

Admits the appeal in the interest of the law formulated by the Management Board of the Suceava Court of Appeal and, consequently, establishes that:

In the interpretation and application of the provisions of art. 1073 and art. 1077 of the Civil Code of 1864, art. 5 para. (2) from title X of Law no. 247/2005 regarding the reform in the fields of property and justice, as well as some adjacent measures, art. 1.279 para. (3) thesis I and art. 1,669 para. (1) of the Civil Code, in the situation

According to art.1279 of the Civil Code, the promise to contract must contain all those clauses of the promised contract, without which the parties could not execute the promise.

In case of non-fulfillment of the promise, the beneficiary has the right to damages.

If the beneficiary opted and accepted the purchase of the good but the promisor sold the good or it no longer exists, the beneficiary has the right to damages to cover the damage suffered.

If the promisor sold the asset to a third party with his complicity, the beneficiary of the preferential agreement can bring an action to cancel the sale.

Likewise, if the promisor refuses to conclude the promised contract, the court, at the request of the party that has fulfilled its own obligations, can pronounce a decision that takes the place of the contract, when the nature of the contract allows it, and the requirements of the law for its validity are fulfilled. The provisions of the paragraph are not applicable in the case of the promise to conclude a real contract, if the law does not provide otherwise.

The agreement by which the parties undertake to negotiate in order to conclude or modify a contract does not constitute a promise to contract.

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where the promisor-seller has promised the sale of the entire building, although he does not have the capacity of its exclusive owner, the promise of sale cannot be executed in kind in the form of the pronouncement of a court decision that takes place by sales contract for the entire asset, in the absence of the consent of the other co-owners.

Mandatory, according to art. 517 para. (4) of the Civil Procedure Code.

Pronounced in public session, today, June 8, 2015. Decision no. 21/2016 of the ÎCCJ resolving some legal issues, published in M. Of. no. 774/04.10.2016.

It rejects, as inadmissible, the referral made by the Vâlcea Court — Civil Section I, in File no. 3.117/223/2014, regarding the pronouncement of a preliminary decision for the resolution of the following legal issue: the admissibility of the action for the pronouncement of a court decision that will take the place of an authentic deed of sale and purchase of an urban land, in the situation where the immovable property that is the object the bilateral promise of sale-purchase is not registered in the land register, as it results from the corroboration of the provisions of art. 57 of the Government Emergency Ordinance no. 80/2013 regarding judicial stamp duties, with subsequent amendments and additions, art. 35 para. (1) and art. 36 para. (2) from the Cadastre and Real Estate Advertising Law no. 7/1996, republished (3), with subsequent amendments and additions, art. 2 para. (1) from Law no. 17/2014 regarding some measures to regulate the sale-purchase of agricultural land located outside the village and to amend Law no. 268/2001 regarding the privatization of commercial companies that manage public and private lands of the state for agricultural purposes and the establishment of the State Domains Agency, with subsequent amendments and additions, art. 885 para. (1), 887 par. (1), art. 1.676, art. 1.279 para. (3) and art. 1,669 of the Civil Code.

Mandatory, according to the provisions of art. 521 para. (3) of the Civil Procedure Code.

Pronounced in public session today, June 13, 2016.

Details: <http://legeaz.net/monitorul-oficial-774-2016/decizie-iccj-21-2016-hotarare-act-autentic-imobil-neinscris-cartea-funciara>

Decision no. 24/2016 of the ÎCCJ resolving some legal issues, published in M. Of. no. 936/22.11.2016

Admits the referral made by the Giurgiu Court — Civil Section, in File No. 4 929/236/2014, regarding the pronouncement of a preliminary decision and, consequently, establishes that: The provisions of art. 5 para. (1) from Law no. 17/2014 regarding some measures to regulate the sale-purchase of agricultural land located outside the city and to amend Law no. 268/2001 regarding the privatization of commercial companies that hold under management public and private state-owned land for agricultural purposes and the establishment of the State Domains Agency, with subsequent amendments and additions, applies to bilateral promises of sale and purchase regarding agricultural land located outside the city, concluded before the entry into force of this normative act, regardless of the time of notification to the court

The court may order the fulfillment of the formalities in order to obtain the approvals provided for in art. 3 and art. 9 of Law no. 17/2014, with subsequent amendments and additions, from the competent authorities and the completion of the procedure regarding compliance with the right of pre-emption provided for by art. 4 of the same normative act, during the trial.

Mandatory, according to the provisions of art. 521 para. (3) of the Civil Procedure Code.

Pronounced in public session today, September 26, 2016.

When one of the parties who concluded a bilateral promise of sale refuses, unjustifiably, to conclude the promised contract, the other party can request the pronouncement of a court decision (declaratory action to take the place of the contract, if all other validity conditions are met).

The right to action is prescribed within 6 months from the date on which the contract should have been concluded.

These provisions apply accordingly to the unilateral promise to sell or to buy, as the case may be.

The High Court of Cassation and Justice decided that the court cannot pronounce a decision that takes the place of a sale-purchase contract in the conditions where the sale-purchase promise provides for a disclaimer clause in favor of the promisor-seller and which produced the effects under the conditions stipulated by the parties<sup>15</sup>.

In the case of a unilateral promise to purchase a specific individual good, if, before the promise has been executed, his creditor disposes of the good or establishes a real right over it, the promisor's obligation is considered extinguished (art. 1669 of the Civil Code).

In the absence of a stipulation to the contrary, sums paid under a promise to sell are an advance on the agreed price.

The unilateral promise to buy is the symmetrical opposite of the unilateral promise to sell.

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<sup>15</sup> Decision no. 486 of March 6, 2019 issued by the First Civil Section of the High Court of Cassation and Justice.

In reality, the promise of sale gives rise, in the responsibility of the parties, to an obligation to do, respectively, to submit all the diligence for the completion of the contract to which they have committed themselves, without this obligation usually having as consideration the payment of a sum of money (a price of the promise). the price mentioned in the sales promise is, in fact, an advance from the agreed sale price, as stipulated in art. 1670 C. civil ("in the absence of a contrary stipulation, the amounts paid under a promise to sell represent an advance of the agreed price") and as the parties provided in the content of their agreement.

Therefore, it is erroneous to claim that the payment of the advance, made on the date of conclusion of the promise, would represent an act of its execution (and as such, the termination clause could no longer be activated) and not an anticipatory clause regarding part of the sale price that it was to be perfected. As such, the exercise of the discretionary right, arising from the unilateral termination clause, to withdraw from the contract until the date provided for its completion (1.12.2015) was done in compliance with the provisions of art. 1276 para. (1) Civil Code, i.e. before the start of the execution of the contract and without being abusive (the notification being sent before the mentioned date and also returning both the advance received and the agreed amount, as compensation, in case of cancellation).

- Regarding the invocation of the difference between the criminal clause and the penalty charge, of the incompatibility between a commission pact and the insertion of a clause in the contract regarding the penalty charge, the appellant's assertions are irrelevant in relation to the facts of the case, to what fixed the limits of the judgment and could be subject to judicial review. Thus, the reference to the legal nature of the amount of 100,000 euros, the restitution of which had to be made in case of non-perfection of the contract, as representing interest damages and not the double of the arvuna (to be considered the price of dispossession, in the sense of art. 1545 C. civil. ), the appellant does it also in the idea of qualifying the contractual clause in dispute as a commission agreement and not a termination clause.

- In this context, in which it was correctly held by the courts of the fund that the promise of sale between the parties had a termination clause inserted in favor of the promising seller, which produced its effects in the agreed terms (being returned the amount of 100,000 euros received as advance, as well as the amount of 100,000 euros in damages) the claim of the appellant according to which the conditions for the pronouncement of a judgment that would take the place of an authentic deed of sale were fulfilled, is devoid of any legal basis. According to art. 1669 para. (1) Civil Code, text relied on by the appellant-plaintiff, for the pronouncement of such a decision and therefore, the fulfillment by the court of the consent of one of the parties, it is necessary that the latter unjustifiably refused to conclude the promised contract, hypothesis that does not exist when the party has prevailed over the effects of the clause of disclaimer stipulated in its favor.

A unilateral promise to buy is a contract by which a person, called the "promisor", firmly undertakes to buy an asset if its owner decides to sell it.

In such a situation, "mutatis mutandis" (changing what needs to be changed), the validity conditions and effects of such a contract are similar to those regarding the unilateral promise to sell.

#### Bilateral promise of sale and purchase

The bilateral promise of sale and purchase is that synalagmatic contract by which one of the parties called the promisor undertakes to sell and the other party called the beneficiary undertakes to buy the respective good at a determined price, through a sale and purchase contract that will be concluded later.

The bilateral promise of sale-purchase is an ante-contract, but which does not have the effect of transferring ownership of the good to be sold.

The bilateral sale-purchase promise is a preliminary contract by which the parties oblige themselves to conclude a sale-purchase contract in the future, at a set price.

The agreement by which one of the parties or both parties undertakes to conclude a certain contract in the future, the essential content of which is determined at the date of conclusion.

The pre-sale contract (promise to sell) constitutes an obligation to perform which gives rise to a right of claim, one of the parties being obliged to the other party to sell a certain asset in the future. Therefore, regardless of the form of the preliminary contract, it represents a right of claim.

The persons who concluded preliminary sales contracts in authentic form, on the one hand, and the persons who concluded preliminary sales contracts either in the form of a document under a private signature, or in the form of a document certified by a lawyer, on the other hand, having as object agricultural lands located in the outskirts, are in the same legal situation, since the legal nature of the act - pre-sale contract, the effects produced by it - the obligation to conclude the sales contract in the future, as well as the moment of concluding the pre-contracts are identical. The only difference that can be noted between these two categories of persons refers to the form of concluding the pre-contract, an aspect that is not likely to create different legal situations for the parties of these two types of pre-contract considering the fact that, regardless of its form, the effects products are the same. Thus, both the pre-contract concluded in authentic form and the unauthenticated one did not themselves transfer the right of ownership, generating only the obligation of the parties to conclude the sales contract in the future.

In relation to the particular situation of pre-contracts concluded in authentic form, the Court notes that, by Law no. 127/2013 on the approval of GEO no. 121/121/2011 for the modification and completion of some normative acts, published in the Official Gazette of Romania, Part I, no. 246 of April 29, 2013, the obligation to conclude in authentic form the promise to conclude a contract having as its object the property right over the building or another real right in relation to it, under the penalty of absolute nullity, but subsequently, art. II of Law no. 221/2013 regarding the approval of GEO no. 12/2013 for the regulation of some financial-fiscal measures and the extension of some terms and of amending and supplementing some normative acts, published in the Official Gazette of Romania, Part I, no. 434 of July 17, 2013, expressly abrogated this obligation. Therefore, during the period May 2-July 19, 2013, there was the obligation to conclude the preliminary sales contracts in authentic form, under the penalty of absolute nullity of the act. However, this legal obligation to conclude pre-contracts in authentic form did not produce any different consequence in terms of the transferable effect of ownership, considering the fact that both the pre-contract

concluded in authentic form and the one not notarized did not themselves transfer ownership<sup>16</sup>.

The pre-contract, for the sale and purchase of a property, is a bilateral promise to contract; in case of non-execution of the assumed obligation, the liability is contractual, and the forced execution in kind, of the obligation to do, is ensured by the personal action having as its object the pronouncement of a decision that takes the place of a sale-purchase deed, subject to the limitation period.

The prescription period runs from the moment the contract is concluded, but when the promising buyer has taken over the property, its possession, with the consent of the promising seller, is equivalent to the recognition of his right.

The prescription of the right to action begins to run when the promisor-seller manifests himself expressly in the sense of denying the right of the promisor-buyer<sup>17</sup>.

The contract will be concluded in the future and the parties have agreed on both the work and the price.

If a party at fault does not comply with the assumed obligation to conclude the sale-purchase contract, it gives the other party the right to request the resolution of the contract which constitutes the bilateral promise with damages to cover the damage suffered by the party that is not at fault.

In the absence of a stipulation to the contrary, sums paid under a promise to sell are an advance on the agreed price.

This does not mean that the parties cannot, by their will, adopt a clear and unequivocal termination clause; otherwise, the clause has a confirmatory role in the sense that in case of non-realization of the sale due to the fault of one of the parties, the other party has the choice between asking for forced execution, or putting into operation the clause of *arvuna*<sup>18</sup>.

According to art. 906 of the Civil Code, the promise to conclude a contract with the object of ownership of the property or another right in relation to it can be noted in the land register, if the promisor is registered in the land register as the holder of the right that is the object of the promise, and the pre-contract, under penalty of rejection of the scoring request, provides the term in which the contract is to be concluded. The notation can be made at any

<sup>16</sup> Decision no. 755/2014 of the Constitutional Court published in M. Of. no. 101/09.02.2015.

<sup>17</sup> Ú.C.C.J., civil and intellectual property section, Decision no. 1212 of February 17, 2005

Since the pre-contract is a bilateral promise to contract, in case of non-execution of the assumed obligation, the liability is contractual, and the forced execution in kind of the obligation to do is ensured by the personal action having as its object the pronouncement of a decision that takes the place of a deed of sale-purchase, subject to the limitation period.

This term runs from the moment the agreement is concluded, but when the promisor-buyer has taken over the property, its possession with the consent of the promisor-seller, is equivalent to the recognition of his right.

In such situations, the prescription of the right to action begins to run when the promisor-seller manifests himself expressly, in the sense of denying the right of the promisor-buyer.

However, in this case, the plaintiffs-appellants took over the property with the conclusion of the preliminary sale-purchase contract of September 1, 1986, having possession of it and in , and the defendant-respondent, in response, confirms this fact, states that it recognizes the plaintiffs' right and asks for a decision to be issued that will take the place of an authentic deed of sale and purchase.

Related to these circumstances, which prove the recognition by the respondent-defendant of the right of the appellants-plaintiffs, it was wrongly held that the exception invoked, ex officio, by the first instance, is founded. For the stated reasons, the appeal was admitted, the judgment pronounced by the court of appeal was overturned and the case was sent to the same court for retrial, with the referring court proceeding according to art. 297 (1) Civil Procedure Code.

<sup>18</sup> Ú.C.C.J., Civil and Intellectual Property Section, decision no. 2688 of March 27, 2007.

time within the term stipulated in the preliminary contract for its execution, but no later than 6 months after its expiration.

The promise may be revoked, if the entitled person has not asked the court to pronounce a decision that will replace the contract, within 6 months from the expiry of the term set for its conclusion or if, in the meantime, the property has been definitively adjudicated in the sale enforced by a third party who is not held liable for the promisor's obligations.

The deletion will be ordered *ex officio*, if, until the expiration of the 6-month period, the registration of the right that was the object of the promise was not requested, except for the case when the entitled person requested the notation of the action in the land register. Also, the promise will automatically be revoked in all cases when, until the conclusion of the contract mentioned above or until the final settlement of the action, the property has been definitively awarded in the forced sale by a third party who is not held responsible for the obligations the promisee.

The provisions of the article apply by analogy to the option agreements noted in the land register. In these cases, if, until the expiry of the term stipulated in the contract for the exercise of the option, the beneficiary of the agreement does not request, based on the declaration of option and the proof of its communication to the other party, the tabulation of the right to be acquired, the deletion will be ordered *ex officio* the pact signed in his favor.

#### c) The right of pre-emption

Another aspect of unilateral manifestation of will, regarding the sale or purchase, is what the doctrine calls the "preference pact".

The preference pact is the contract by which one of the parties - the owner of a thing - commits to another person - the beneficiary -, who accepts this promise, to prefer it under equal price conditions, if the owner decides to sell (Chirica, 1997, p.19).

The practical utility of the preference pact appears especially in the case of lease relationships, when the landlord promises the tenant, and he accepts, that he will prefer the latter, if he decides to sell the rented property.

The right of pre-emption is a priority right to purchase recognized by law for certain persons. The right of pre-emption is different from the right of preference which has a contractual nature.

The right of preemption is a variant of the unilateral promise to sell, but in this situation the owner of the thing does not oblige himself to sell, but only to give preference to a person if he decides to sell a certain thing.

The right of pre-emption is regulated by art. 1730 – 1740 of the Civil Code.

According to art. 1730 of the Civil Code, under the conditions established by law or contract, the holder of the right of preemption, called preemptor, can buy a good with priority.

The provisions of the Civil Code regarding the right of preemption are applicable only if the law or contract does not establish otherwise.

The holder of the right of pre-emption who rejected a sale offer can no longer exercise this right with regard to the contract that was proposed to him. The offer is considered rejected if it was not accepted within a maximum of 10 days, in the case of the sale of movable goods, or of a maximum of 30 days, in the case of the sale of immovable goods. In both cases, the term runs from the communication of the offer to the preemptor.

Characteristics of the right of preemption

The right of preemption is indivisible and cannot be assigned.

The sale to a third party of goods subject to preemption



The sale of the asset with respect to which there is a legal or conventional right of pre-emption can be made to a third party only under the suspensive condition of the non-exercise of the right of pre-emption by the pre-emptor.

Conditions for exercising the right of preemption

According to art. 1732 of the Civil Code, the seller is obliged to immediately notify the pre-emptor of the contents of the contract concluded with a third party. The notification can also be made by the latter.

This notification will include the name and surname of the seller, the description of the good, the duties that encumber it, the terms and conditions of the sale, as well as the place where the good is located.

The pre-emptor can exercise his right by communicating to the seller his agreement to conclude the sales contract, accompanied by the recording of the price at the seller's disposal<sup>19</sup>.

The right of pre-emption is exercised, in the case of the sale of movable goods, within a maximum of 10 days, and in the case of the sale of immovable goods, within a maximum of 30 days. In both cases, the term runs from the notification to the pre-emptor.

Effects of exercising preemption

By exercising preemption, the sales contract is considered concluded between the pre-emptor and the seller under the conditions contained in the contract concluded with the third party, and the latter contract is retroactively terminated. However, the seller is liable to the third party in good faith for the eviction resulting from the exercise of preemption.

The clauses of the contract concluded with the third party with the aim of preventing the exercise of the right of pre-emption do not produce effects against the pre-emptor.

Competition between preemptors

If several owners have exercised their preemption on the same asset, the sales contract is considered concluded:

a) with the holder of the legal right of pre-emption, when it is in competition with holders of conventional rights of pre-emption;

b) with the holder of the legal right of pre-emption chosen by the seller, when he is in competition with other holders of legal rights of pre-emption;

c) if the asset is immovable, with the holder of the conventional pre-emption right that was first entered in the land register, when he is in competition with other holders of conventional pre-emption rights;

d) if the asset is movable, with the holder of the conventional right of pre-emption having the earliest certain date, when he is in competition with other holders of conventional rights of pre-emption.

Any clause that contradicts the provisions mentioned above is considered unwritten.

According to art. 1735 of the Civil Code, when the preemption is exercised regarding a good purchased by a third party together with other goods for a single price, the seller can claim from the pre-emptor only a proportional part of this price.

In the event that goods other than the one subject to pre-emption were sold, but which could not be separated from it without damaging the seller, the exercise of the right of pre-emption can only be done if the pre-emptor records the price set for all the goods sold.

Expiration of the obligation to pay the price

<sup>19</sup> Art. 1006 - 1013 of the Code of Civil Procedure

When in the contract concluded with the third party, deadlines for payment of the price have been granted, the preemptor cannot avail himself of these deadlines.

Noting the right of preemption on a property in the land register.

The conventional right of preemption in relation to a building is noted in the land register.

If such a notation has been made, the consent of the preemptor is not necessary for the one who bought under a suspensive condition to be able to register his right in the land register, based on the sales contract concluded with the owner. The registration is made under the suspensive condition that, within 30 days from the communication of the conclusion by which the registration was ordered, the preemptor does not notify the land registry office of the proof of recording the price at the disposal of the seller.

The notification made within the land registry office replaces the communication provided for in art. 1732 para. (3) and has the same effects.<sup>20</sup>

Pursuant to this notification, the preemptor may request the deletion of the third party's right from the land register and the registration of his right.

If the preemptor has not made the notification within the deadline, the right of preemption is extinguished and automatically deleted from the land register.

Exercising the right of preemption in the context of enforced execution

If the property is the object of forced pursuit or is put up for forced sale with the authorization of the syndic judge, the right of preemption is exercised under the conditions provided by the Code of Civil Procedure.

Extinction of the conventional right of preemption

According to the provisions of art. 1740 of the Civil Code, the conventional right of preemption is extinguished by the death of the preemptor, with the exception of the situation in which it was established for a specific term. In the latter case, the term is reduced to 5 years from the date of establishment, if a longer term was stipulated.

According to art. 848 of the Code of Civil Procedure, the holder of a right of preemption who did not participate in the auction will no longer be able to exercise his right after the adjudication of the immovable property.

In the case of movable assets, the holder of the right of preemption who did not participate in the auction will no longer be able to exercise his right after the award of the asset (art. 770 of the Code of Civil Procedure).

The right of preemption provided by special laws.

- According to art. 17 of Law no. 10/2001, tenants of buildings having the destinations shown in annex no. 2 lit. a) and lit. b) point 1, they have the right of pre-emption to purchase them<sup>21</sup>.

<sup>20</sup> Art. 1732 paragraph 3 of the Civil Code

The pre-emptor can exercise his right by communicating to the seller his agreement to conclude the sales contract, accompanied by the recording of the price at the seller's disposal.

<sup>21</sup> 1. Buildings occupied by educational units and institutions from the state system (kindergartens, schools, high schools, colleges, professional schools, post-secondary schools, higher education institutions)

2. Buildings occupied by sanitary units and medico-social assistance from the public system (nurseries, homes-hospitals for the elderly, hospitals, foster care centers, children's homes)

3. Buildings occupied by financial administrations, treasurers, ministries and other authorities of the central public administration, prosecutors' offices, judges, courts of appeal, police, border police, gendarmerie, community public services for emergency situations, customs offices, national archives, county directorates, health insurance companies, town halls, prefectures, local and county councils, school inspectorates;

4. Buildings occupied by public cultural institutions: theaters, opera houses, libraries, museums, philharmonics, cultural centers.

b) The list of buildings falling under art. 13 para. (2) from Law no. 10/2001, republished:

This right can be exercised, under penalty of forfeiture, within 90 days from the date of receipt of the notification regarding the intention to sell.

The notification is made through the bailiff.

Sales-purchase contracts concluded in violation of the right of pre-emption are null and void.

According to art. 19 of Law no. 10/2001, in the case of buildings-constructions that are the subject of the notifications formulated and to which were added, horizontally and/or vertically, in relation to the initial form, additional independent bodies, the former owners or, as the case may be, to their heirs, the surface held in ownership on the date of transfer to state ownership shall be returned to them in kind.

The owner of the area added to the property taken over has the right of pre-emption to purchase the area returned to the former owner or, as the case may be, to his heir.

The new owner of the area returned to ownership has a right of preemption to purchase the area added to the building after it has passed into state ownership.

According to art. 42 of Law no. 10/2001, the buildings that, following the procedures, are not returned to the entitled persons remain under the administration of the current owners<sup>22</sup>.

Real estate with a different purpose than residential can be alienated according to the legislation in force. Holders with a valid title have the right of preemption.

Residential buildings can be alienated according to the legislation in force, with tenants having the right of pre-emption.

- According to art. 45 par. 6 of Law no. 46/2008 Forestry Code<sup>23</sup>, co-owners and neighboring forest property owners, natural or legal persons, under public or private law, have a right of preemption, in the order provided in art. 1,746 of the Civil Code<sup>24</sup> and under the terms of Law no. 46/2008, when purchasing privately owned forest land at the same price and under equal conditions.

The seller has the obligation to notify all the preemptors in writing, through the bailiff or the notary public, about the intention to sell, showing the price requested for the land to be sold. If the co-owners or neighbors of the fund, other than the administrator of the public forests of the state, do not have a known domicile or headquarters, the notification of the sale offer is registered at the town hall or, as the case may be, the town halls within which the land is located and is displayed, in the same day, at the town hall headquarters, through the care of the secretary of the local council.

Holders of the right of pre-emption must express in writing their intention to buy and communicate their acceptance of the sale offer or, as the case may be, register it at the town

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1. Buildings occupied by headquarters of legally registered political parties

<sup>22</sup> Law no. 10/2001 on the legal regime of some immovable property taken over abusively between March 6, 1945 - December 22, 1989, republished in M.Of. no. 798/02.09.2005, amended by GEO no. 209/2005, Law no. 263/2006, Law no. 74/2007, Law no. 1/2009 published in M. Of. no. 63/03.02.2009.

<sup>23</sup> Law no. 46/2008 Forestry Code, republished in M.Of. no. 611/12.08.2015, amended by Law no. 232/2016 published in M. Of. no. 972/05.12.2016/, by Law no. 175/2017 published in M.Of. no. 569/18.07.2017.

Art. 1746 of the Civil Code

Privately owned forest land can be sold in compliance with the right of pre-emption of the co-owners or neighbors.

<sup>24</sup> Art. 1746 of the Civil Code

Privately owned forest land can be sold in compliance with the right of pre-emption of the co-owners or neighbors.

hall office where it was displayed, within 30 days from the communication of the sale offer or, as the case may be, from its display at the town hall headquarters.

In the situation where the land to be sold is adjacent to the forest fund, public property of the state or administrative-territorial units, the exercise of the right of pre-emption of the state or administrative-territorial units within the term of 30 days prevails in relation to the right to neighbors' preemption.

If, within 30 days, none of the pre-emptors shows their intention to buy, the sale of the land is free. In front of the public notary, the proof of the notification of the preemptors is made with a copy of the communications made or, if applicable, with the certificate issued by the town hall, after the expiration of the 30-day period in which the intention to purchase had to be expressed.

Failure by the seller to notify all preemptors in writing or selling the land at a lower price or under more favorable conditions than those shown in the sale offer results in the cancellation of the sale.

These provisions of Law no. 46/2008, regarding the exercise of the right of preemption, are supplemented by the provisions of common law.

- The priority right to acquire the expropriated property.

According to art. 37 of Law no. 33/1994 on expropriation for reasons of public utility, if the works for which the expropriation was carried out have not been completed, and the expropriator wishes to alienate the building, the expropriated - former owner - has a priority right upon acquisition, at a price that cannot be higher than the updated compensation.

For this purpose, the expropriator will notify the former owner under the terms of art. 35, and if he does not opt for the purchase within two months of receiving the notification, the property can be disposed of freely.

If the priority right of acquisition is violated, the former owner can substitute himself in the rights of the buyer, paying him the price, as well as the expenses caused by the sale. The right of substitution is exercised within two months from the date of communication of the conclusion ordering the entry in the land register in favor of the buyer.

In this case, the former owner takes the place of the buyer, replacing the latter in all rights and obligations arising from the contract concluded in violation of the priority right of acquisition.

The provisions regarding the offer of payment followed by registration apply accordingly.

The minutes concluded by the bailiff to ascertain the receipt of payment by the third party buyer or, as the case may be, the conclusion of the bailiff confirming the recording of the payment of the price by the third party buyer, which remains final, takes the place of title. The provisions regarding the land register remain applicable<sup>25</sup>.

- according to art. 36 of Law no. 182/2000, movable cultural goods, property of natural or legal persons under private law, classified in the treasury, can be the subject of a public sale only under the conditions of exercising the right of pre-emption by the Romanian

<sup>25</sup> Law no. 33/1994 on expropriation for reasons of public utility, republished in M. Of. no. 472/05.07.2011.  
Article 35

If, within one year, the expropriated real estate has not been used according to the purpose for which it was taken from the expropriated or, as the case may be, the works have not been started, the former owners can request their return, if a new declaration of public utility. For this purpose, the former owners will be notified at the initial address communicated to the expropriator in order to pay the due compensation for the expropriated building.

state, through The Ministry of Culture, and in compliance with the provisions of art. 35 para. (7)<sup>26</sup>.

Failure to comply with these provisions results in the absolute nullity of the sale.

The decentralized public services of the Ministry of Culture are obliged to transmit to the Ministry of Culture, within 3 days of receiving the written communication of the authorized economic operator, the registration regarding the sale of a movable cultural asset classified in the treasury.

The term for exercising the state's right of preemption is a maximum of 30 days, calculated from the date of registration of the communication, and the purchase value is the one negotiated with the seller or with the authorized economic operator or the one resulting from the public auction.

The Ministry of Culture will provide in its own budget the necessary sums intended for the exercise of the right of pre-emption.

- According to art. 4 of Law no. 422/2001<sup>27</sup>, historical monuments belong either to the public or private domain of the state, counties, cities or communes, or are the private property of natural or legal persons.

Historical monuments public property of the state or administrative-territorial units are inalienable, imprescriptible and inalienable; these historical monuments can be administered to public institutions, they can be concessioned, given for free use to institutions of public utility or rented, under the law, with the approval of the Ministry of Culture and Cults or, as the case may be, of the decentralized public services of the Ministry of Culture and Cults .

Historical monuments belonging to the private domain can be subject to the civil circuit under the conditions established by law.

Historical monuments owned by individuals or legal entities under private law can only be sold under the conditions of exercising the right of pre-emption of the Romanian state, through the Ministry of Culture and Religion, for historical monuments classified in group A, or through the decentralized public services of the Ministry of Culture and Religion , for historical monuments classified in group B, or of administrative-territorial units, as the case may be, under the penalty of absolute nullity of the sale.

The owners, natural or legal persons under private law, who intend to sell historical monuments, send to the decentralized public services of the Ministry of Culture and Cults the notification regarding the intention to sell, accompanied by the documentation established by order of the Minister of Culture and Cults.

The decentralized public services of the Ministry of Culture and Cults transmit the notification, documentation and response proposal to the Ministry of Culture and Cults, within 5 working days of receiving them.

The deadline for exercising the state's right of pre-emption is a maximum of 25 days from the date of registration of the notification, documentation and response proposal to the Ministry of Culture and Religion or, as the case may be, to the decentralized public services

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<sup>26</sup> Law no. 182/2000 on the protection of movable national cultural heritage, republished in M. Of. no. 259/09.04.2014.

Art. 35 paragraph 7

The economic operators authorized to sell movable cultural goods are obliged to, within 3 days from the date of registration in their own register of the goods placed in the treasury, communicate in writing to the decentralized public service of the Ministry of Culture, in whose territorial radius they are based, putting them up for sale, as well as, as the case may be, to send a copy of the catalog edited for the purpose of organizing a public auction, regardless of whether the goods put up for auction are or are not classified as movable national cultural heritage.

<sup>27</sup> Law no. 422/2001 on the protection of historical monuments, republished in M. Of. no. 938/20.11.2006.

of the Ministry of Culture and Religion; the holders of the right of pre-emption shall provide in their own budget the necessary sums intended for the exercise of the right of pre-emption; the purchase value is negotiated with the seller.

If the Ministry of Culture and Religions or the decentralized public services of the Ministry of Culture and Religions do not exercise their right of pre-emption within a maximum of 25 days, this right is transferred to the local public authorities, who can exercise it in a maximum of 15 days.

Communications regarding the non-exercise of the right of pre-emption are valid for the entire calendar year in which they were issued, including for situations in which the historical monument is sold several times.

Under the law, in order to protect historical monuments, in extreme cases, they can be relocated.

- according to art. 15 of Law no. 16/1996 on National Archives<sup>28</sup> private organizations and individuals who hold documents from the National Archives Fund of Romania can deposit them at the National Archives in the form of custody or donation, exempt from fees and taxes.

The holder who wants to sell documents that are part of the National Archives Fund of Romania is obliged to communicate this to the National Archives or, as the case may be, to the county services of the National Archives, which have priority when buying any documents that are part of the National Archives Fund of Romania and which must be pronounced within 60 days from the date of registration of the communication.

- Law no. 112/1995 establishes another case of limitation of the will of the seller in the choice of the co-contractor, in the sense that the sale of houses passed under the title of state property can only be done by the tenants.<sup>29</sup>

- Right of preemption according to Law no. 17/2014.<sup>30</sup>

Agricultural lands located in urban areas do not fall under the provisions of Law no. 17/2014.

The provisions of Law no. 17/2014 apply to Romanian citizens, respectively citizens of a member state of the European Union, of the states that are party to the Agreement on the European Economic Area (EEA) or of the Swiss Confederation, as well as stateless persons residing in Romania, in a member state of the European Union, in a state that is a party to the ASEE or the Swiss Confederation, as well as to legal entities having Romanian nationality, respectively of a member state of the European Union, of the states that are a party to the ASEE or the Swiss Confederation.

The citizen of a third country and the stateless person domiciled in a third country, as well as legal entities having the nationality of a third country can acquire the right of ownership over agricultural land located outside the city under the conditions regulated by international treaties, on the basis of reciprocity, under the conditions of Law no. 17/2014.

Sale-purchase of agricultural land located outside the village

According to art. 3 of Law no. 17/2014, agricultural lands located outside the city at a depth of 30 km from the state border and the Black Sea shore, inland, as well as those located

<sup>28</sup> Law no. 16/1996 on National Archives, republished in M. Of. no. 293/22.04.2014.

<sup>29</sup> Law no. 112/1995 for the regulation of the legal situation of some residential buildings, passed into state ownership, published in M. Of. no. 279/29.11.1995.

<sup>30</sup> Law no. 17/2014 regarding some measures to regulate the sale-purchase of agricultural land located outside the village, published in M.Of. no. 178/12.03.2014, amended by Law no. 68/2014, published in M.Of. no. 352/13.05.2014, Law no. 138/2014 published in M. Of. no. 753/16.10.2014.

outside the city at a distance of up to 2,400 m against the special objectives can be alienated by sale-purchase only with the specific approval of the Ministry of National Defense, issued following consultation with the state bodies with attributions in the field of national security, through the specialized internal structures mentioned in art. 6 para. 1 of Law no. 51/1991 on the national security of Romania, with subsequent amendments and additions<sup>31</sup>.

These provisions do not apply to preemptors.

The notices will be communicated within 20 working days from the registration of the request by the seller. The procedure and other elements regarding obtaining the specific opinion of the Ministry of National Defense are regulated by the methodological norms of law enforcement<sup>32</sup>.

In case of non-fulfillment of this obligation to issue the opinion, it is considered favorable.

Agricultural lands located outside the village, where there are archaeological sites, where areas with archaeological heritage have been established or areas with archaeological potential highlighted by chance, can be alienated by sale only with the specific approval of the Ministry of Culture, respectively of the decentralized public services of to him, as the case may be, issued within 20 working days from the registration of the request by the seller. The procedure and other elements regarding obtaining the specific opinion of the Ministry of Culture are regulated by the methodological norms of law enforcement. In case of non-fulfillment of this obligation, the opinion is considered favorable.

Exercising the right of preemption

The alienation, by sale, of agricultural land located outside the village is done in compliance with the substantive and formal conditions provided by the Civil Code, and the right of preemption of the co-owners, lessees, neighboring owners, as well as the Romanian state, through the State Domains Agency, in this order, at the same price and under equal conditions.

By way of exception, the alienation, by sale, of agricultural land located outside the village on which classified archaeological sites are located is done according to the provisions of Law no. 422/2001 on the protection of historical monuments<sup>33</sup>.

The request and use of the land book certificate in transferable property contracts regarding real estate and other real rights fully prove the good faith of both the parties to the contract and for the instrument professional, regarding the seller's ownership of the property subject to sale according to the description in the land register.

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<sup>31</sup> By Decision no. 24/2016, ÎCCJ (Complete DCD/C), published in M.Of.nr.936/22.11.2016, admitted the referral made by the Giurgiu Court – Civil Section, in File no. 4.929/236/2014, by which a preliminary decision is requested to resolve a question of law and, consequently, establishes that:

The provisions of art. 5 para. (1) from Law no. 17/2014 regarding some measures to regulate the sale-purchase of agricultural land located outside the village and to amend Law no. 268/2001 regarding the privatization of commercial companies that manage public and private lands of the state for agricultural purposes and the establishment of the State Domains Agency, with subsequent amendments and additions, applies to bilateral promises of sale and purchase regarding agricultural land located outside the city, concluded previously the entry into force of this normative act, regardless of the time of notification to the court.

The court may order the fulfillment of the formalities in order to obtain the approvals provided for in art. 3 and art. 9 of Law no. 17/2014, with subsequent amendments and additions, from the competent authorities and the completion of the procedure regarding compliance with the right of pre-emption provided for by art. 4 of the same normative act, during the trial.

<sup>32</sup> Order no. 2333/2014 for the approval of Methodological Norms for the application of Law no. 17/2014, published in M. Of. no. 401/30.05.2014.

<sup>33</sup> Law no. 422/2001 on the protection of historical monuments, republished in M. Of. no. 938/20.11.2006.

In all cases where a court decision is requested that takes the place of a sale-purchase contract, the action is admissible only if the pre-contract is concluded according to the provisions of the Civil Code and the relevant legislation, and the property that is the subject of the pre-contract is registered in the role fiscal and in the land register.

The application for registration in the land register of the ownership right is rejected if the conditions provided by Law no. 17/2014 are not met.

According to art. 6 of Law no. 17/2014, by way of derogation from art. 1.730 et seq. of the Civil Code regarding the right of pre-emption, the seller registers, at the town hall within the administrative-territorial unit where the land is located, a request requesting the display of the offer for sale of the agricultural land located outside the village, in order to bring it to the attention of the pre-emptors. The request is accompanied by the offer to sell the agricultural land and the supporting documents provided by the methodological norms.

Within one working day from the date of registration of the request, the town hall has the obligation to display the sale offer at its headquarters and, as the case may be, on its website for 30 days.

The town hall has the obligation to transmit to the structure within the central apparatus of the Ministry of Agriculture and Rural Development, hereinafter referred to as the central structure, respectively to its territorial structures, hereinafter referred to as territorial structures, as the case may be, a file containing the list of preemptors, respectively the copies of the request of the display, of the sales offer and of the supporting documents within 3 working days from the date of registration of the application.

For the purpose of extended transparency, within 3 working days from the registration of the file, the central structure, respectively the territorial structures, as the case may be, have the obligation to display the sale offer on their websites, for 15 days.

The holder of the right of pre-emption must, within the term of 30 days, express in writing his intention to buy, communicate the acceptance of the seller's offer and register it at the town hall where it was posted. The city hall will display, within 24 hours from the registration of the acceptance of the sale offer, the data provided in the methodological norms, respectively it will send them for display on the website to the central structure, respectively the territorial structures, as the case may be. If, within the 30-day period, several pre-emptors of different rank express in writing their intention to buy, at the same price and under the same conditions, the seller will choose the pre-emptor, potential buyer, and communicate his name to the town hall.

If, within the 30-day period, several pre-emptors of the same rank express in writing their intention to buy and no other pre-emptor of a higher rank has accepted the offer, at the same price and under the same conditions, the seller will choose from among them and will communicate his name to the town hall.

If, within the 30-day period, a lower-ranking preemptor offers a higher price than the one in the sale offer or that offered by the other higher-ranking preemptors who accept the offer, the seller can resume the procedure, with the registration of the sale offer with this price, with higher preemptors. This procedure will be carried out only once, within 10 days from the completion of the 30-day deadline. At the end of the 10 days, the seller will notify the town hall of the name of the preemptor.

Within 3 working days from the communication, the town hall has the obligation to transmit to the central structure, respectively to the territorial structures, as the case may be, the identification data of the chosen preemptor, potential buyer, in order to verify the fulfillment of the legal conditions.



If, within the period of 30 days, none of the holders of the right of pre-emption expresses their intention to buy the land, the sale of the land is free, in compliance with the provisions of this law and the methodological norms, and the seller must notify the town hall about this in writing. The free sale of the land at a price lower than that requested in the sale offer or under more advantageous conditions than those shown in it attracts absolute nullity.

If, within the 30-day period or within the 10-day period, the seller modifies the data entered in the sales offer, he resumes the registration procedure.

Control of the application of the right of preemption procedure

The final approval necessary for the conclusion of the sale contract in authentic form by the notary public or the court's pronouncement of a court decision that takes the place of the sale contract is issued by the territorial structures for lands with an area of up to 30 hectares inclusive, and for lands with an area of over 30 hectares, by the central structure.

The verification of the fulfillment of the conditions will be done by the central structure, respectively by the territorial structures at the location of the building, as the case may be, within 5 working days from the receipt of the data and documents. If the legal conditions are met, within two working days from the expiry of the verification deadline, the central structure, respectively the territorial structures, as the case may be, will issue the notice necessary to conclude the sale-purchase contract. In the event that no pre-emptor expresses his intention to purchase by submitting the offer within the term provided by this law, it is not necessary to issue the opinion. In this case, the sales contract is concluded based on the certificate issued by the town hall.

In the event that, following checks by the central structure, respectively the territorial structures, as the case may be, it is found that the chosen preemptor does not meet the conditions provided by this law, a negative opinion will be issued within two working days from the expiration of the term for 5-day verification.

The notices will be issued by the territorial structures. The notices will be published on their own websites, within two working days of their issuance.

In the situation where there is no longer any purchase offer from the holders of the right of pre-emption who have shown their acceptance of the offer within the legal term, the sale is free.

In the situation where there is no longer any of the holders of the right of pre-emption who have expressed their acceptance of the offer within the 30-day period, the sale of the land is free.

The lessee who wants to buy the agricultural land located outside the village must have this quality for the respective land, established by a valid lease contract concluded and registered at the time the sale offer is displayed at the town hall.

In the exercise of its duties, the Ministry of Agriculture and Rural Development, together with the subordinate structures, as the case may be:

- a) ensures the publication of sale-purchase offers on its own website;
- b) ensures the verification of the exercise of the right of pre-emption;
- c) verifies the fulfillment of the legal sale-purchase conditions by the potential buyer pre-emptor;
- d) issue the necessary notice for the conclusion of the sale-purchase contract of agricultural land located outside the village;
- e) establish, manage and administer the database of agricultural lands located outside the city, according to the methodological norms;
- f) ascertains the contraventions and applies the sanctions provided by this law, through the authorized personnel.

Violation of the provisions of Law no. 17/2014 attracts administrative, contraventional or civil liability, as the case may be.

The following acts constitute contraventions:

a) the sale-purchase of agricultural land located outside the village, where there are archaeological sites, where areas with identified archaeological heritage or areas with archaeological potential highlighted by chance were established, without the specific approval of the Ministry of Culture, respectively of its decentralized public services, as the case;

b) the sale-purchase of agricultural land located outside the village without the specific approval of the Ministry of National Defense, if this situation was noted in the land register at the time of requesting the land register extract for authentication;

c) the sale-purchase of agricultural land located outside the village without the approval of the central structure, respectively of the territorial structures of the Ministry of Agriculture and Rural Development, as the case may be;

d) non-compliance with the right of pre-emption under the conditions provided for in art. 4.

According to art. 16 of Law no. 17/2014, alienation by sale-purchase of agricultural land located outside the village without respecting the right of pre-emption, or without obtaining approvals, is prohibited and is sanctioned with relative nullity.

Finding and sanctioning contraventions are done by the authorized personnel from the central and local structures with attributions in the field, subordinated to the Ministry of Agriculture and Rural Development.

The provisions of Law no. 17/2014 do not apply to alienations between co-owners, spouses, relatives and relatives up to the third degree, inclusive.

The provisions of Law no. 17/2014 do not apply in the framework of forced execution procedures and sales contracts concluded as a result of public auction formalities, such as those carried out in the insolvency prevention and insolvency procedure or as a result of belonging of the building to the private domain of local or county interest of the administrative-territorial units.

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## THE INTER-BRANCH BALANCE OF LEANKAGES

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**Abstract:** *This article analyzes the necessity of developing the Balance of Branch Linkages (BLR) model in the value expression. BLR has an increasing use in economic science and practice, providing thus advantages over other economic models of analysis and of prognosis.*

**Key words:** *modelling, ballance, systemic treatment, matrix, correlation, branch.*

**JEL Classification:** *O11, O14, O25.*

### 1. Introduction

The national economy represents a complex of economic branches and units, inter-linked by the most diverse economic activities. The country's economy can be successful only if the rates of development between the branches and sub-branches are well established. The statistical balance of the national economy is to be characterized in material and value terms, as well as the extended reproduction of the labor force. The acknowledgement of the extended production forces is possible only through elaboration of a set of balances;

- the balance of production, consumption and accumulation;
- balance of production, distribution and utilization of Gross National Product;
- the balance of labor resources. Each of these balances is of immense importance in the economic development of the country.

In other words, the country's economic development is impossible without elaboration of these balances, which must underpin government decisions.

### 2. The need and advantages of developing the balance of inter-branch linkages

The proportions between branches of the economy can be determined with the help of the balance of inter-branch linkages under conditions of production diversification, of increasing specialization and cooperation in production, and through rapid changes in the structure of production. This problem can be solved exclusively by working out a balance of inter-branch linkages. The balance, being complex, covers the movement of the entire gross national product, divided on different economy branches, which provides the possibility to make a rich analysis, in particular: characterization of interdependence between economic branches and sub-branches; calculation of labor expenditures by branch; calculation of coefficients of direct and total material consumption; determination of scenarios of programs development etc.

The balance of inter-branch linkages is a way of contemplating economic problems and represents a method of analysis, based on modeling of economic processes, which allows to measure and evaluate the mutual effects of production activity, determining interdependences, apply mathematics, substantiate forecasts of economic development programs and analyze a large volume of information on the development of the economy.

An important point is that the balance of inter-branch linkages proposes methods, procedures, techniques and algorithms, thus being the methodology of economic analysis in a systemic view. Broadly speaking, systemic (cybernetic) treatment is a set consisting of: the economic process; the governing body; the information and data processing system. These elements are interconnected. The connection of the elements is realized through continuous information flows. The steering and regulating mechanism of the economic system ensures the optimal development of economic activities.

The balance model of inter-branch linkages; it is represented through a system of economic and mathematical relations as an adequate picture of the real process. As the component elements of the system are taken economic branches, where the movement of production is captured in two aspects: a production process (destination, delivery, dividing, distribution, etc.) of the product, and a process of value formation (process of supply, consumption, and resource utilization, etc.).

The inter-branch linkage balance model identifies the statistical indicators used to determine total, intermediate and final output, value added, value newly created, imports and exports, consumption and development funds. The relationships between the variables of the model are defined as the equations of the distribution by destination of the total output of the branches and as the equations of the structure of factor expenditure. In these relations, current consumption and stock flows are transformed in such a way that each flow is represented as the product of a constant value and a variable one.

The correlation of the indicators of the balance of inter-branch linkages with the system of indicators of the other balances of the national economy constitutes a method of checking the authenticity and veracity.

Due to the multiple and extremely vary possibilities of inter-branch linkage balance, the model positions further are developing into sub-models, describing the balance and development of vertical or territorial blocks of the production system (balance by branches and groups of branches, by territorial, dynamic, static balances, etc.) or different overall aspects of the system (foreign trade, production funds, labor force, price correlations, systematization of material balances in the form of the model in natural expression, the process of accumulation and formation of the development fund, etc.).

### 3. The balance model inter-branch linkage

In the proposed model, the output of each branch denoted by  $X_i$  ( $i = 1, 2, \dots, n$ ) is decomposed by destination elements: consumption for own production and other branches of material production, non-production consumption (individual, public, accumulation, reserves, export).

We denote by  $x_{ij}$  ( $j = 1, 2, \dots, n$ ) the part of the output of branch  $i$ , which is consumed productively in branch  $j$ ; and  $Y_i$  the part of the output of branch that is non-productively consumed. Then:

$$X_i = \sum_{j=1}^n x_{ij} + Y_i, i = 1, 2, \dots, n. \quad (1)$$

The elements  $X$  denote inter-branch flows, where:  $Y_i$ - final output. We analyze the inter-branch linkage balance model in the value expression (Table 1).

**Table 1. The model of inter-branch balance linkage**

Consuming branches Producing branches	1	2	...	j	...	n	Final product	Global product
1	X <sub>11</sub>	X <sub>12</sub>	...	X <sub>1j</sub>	...	X <sub>1n</sub>	Y <sub>1</sub>	X <sub>1</sub>
2	X <sub>21</sub>	X <sub>22</sub>	...	X <sub>2j</sub>	...	X <sub>2n</sub>	Y <sub>2</sub>	X <sub>2</sub>
...	...	...	...	...	...	...	...	...
i	X <sub>i1</sub>	X <sub>i2</sub>	...	X <sub>ij</sub>	...	X <sub>in</sub>	Y <sub>i</sub>	X <sub>i</sub>
...	...	...	...	...	...	...	...	...
n	X <sub>n1</sub>	X <sub>n2</sub>	...	X <sub>nj</sub>	...	X <sub>nn</sub>	Y <sub>n</sub>	X <sub>n</sub>
Amortization	a <sub>1</sub>	a <sub>2</sub>	...	a <sub>j</sub>	...	a <sub>n</sub>		
Salary fund	s <sub>1</sub>	s <sub>2</sub>	...	s <sub>j</sub>	...	s <sub>n</sub>		
Plusproduct	p <sub>1</sub>	p <sub>2</sub>	...	p <sub>j</sub>	...	p <sub>n</sub>		
Global product	X <sub>1</sub>	X <sub>2</sub>		X <sub>j</sub>		X <sub>n</sub>		

If we add up the items in each row, from each column, we get:

$$\sum_{j=1}^n \sum_{i=1}^n x_{ij} + \sum_{i=1}^n Y_i = \sum_{j=1}^n s_j + \sum_{j=1}^n p_j + \sum_{j=1}^n \sum_{i=1}^n x_{ij} \quad (2)$$

$$\sum_{i=1}^n Y_i = \sum_{j=1}^n s_j + \sum_{j=1}^n p_j, \quad (3)$$

where:  $\sum_{i=1}^n Y_i$  – non-productive consumption;  $\sum_{j=1}^n s_j$  – the remuneration of productive sphere;  $\sum_{j=1}^n p_j$  – surplusproduct intended as remuneration for work in the non-productive sphere

If we note:  $\frac{x_{ij}}{x_i} = a_{ij}$ ;  $i, j = 1, 2, \dots, n$  then:  $x_{ij} = a_{ij} \cdot X_i$ ;  $i, j = 1, 2, \dots, n$ , and the model of the balance of inter-branch linkages can be written as follows:  $X_i = \sum_{j=1}^n a_{ij} \cdot X_j + Y_i$ ,  $i, j = 1, 2, \dots, n$ .

Or in matrix form as follows:

$$X = AX + Y$$

$$(I - A)X = Y \quad (4)$$

$$X = (I - A)^{-1} Y$$

The value of  $(I - A)^{-1}$  is the total expenditure matrix.

#### 4. Conclusions

The static balance of inter-branch linkages describes the country's economic circuit over the entire year. In this case, the model does not reproduce the uninterrupted circuit of the extended reproduction of gross national product. The model lacks the link between two

successive periods of economic time, which consists in the accumulation of assets to form the development fund in the first period and their transformation into new capacities, so this would ensure the planned growth of output. Therefore, for effective forecasting of the trajectory of output development, it is recommended to develop dynamic models.

The model of the balance of inter-branch linkages provides undeniable advantages over other models in economic calculations of analysis, forecasting, substantiation and balancing of economic development programs.

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