

# Education, an Uncharted Cornerstone in the Economic Growth and Cooperative Banks Development -Case of a Socially Democratic Environment-

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**Abstract**— Some recent studies have focused on the relationship between democracy, intelligence and economic growth yet few have highlighted the role of education in this relationship. In this paper, it was aimed to see whether education does have an impact on cooperative banks' performance and economic growth, in a socially democratic environment, or not. The empirical results, performed on a sample of the euro area over the period of 10 years between 2004 and 2014, revealed that similar to democracy, education has a colossal effect on the economic growth. Furthermore, it turned out that education has a bigger influence in countries with high levels of openness and democracy. On the other hand, the link between education and the performance of cooperative banks was proved inexistent.

**Keywords**—Education, cooperative banks performance, democracy, economic growth, social environment.

## I. INTRODUCTION

For years, considerable attention has been placed on the banking system and its involvement in the economy evolution. Inevitably, the succession of financial crises has not spared the reproaches towards the dire governance of commercial banks. However, the existing literature has emphasized the role of democracy in promoting financial development; in fact it was widely perceived as crucial to economic growth. In fact, [1] argue that the openness and competitiveness of a country tends to be reflected in the openness and competitiveness of its financial system. They concluded that a democratic system tends to limit the opportunistic behavior of individuals and thus generates a more competitive and efficient banking system. These results were subsequently supported by [2] where he showed the existence of a positive association between democracy and bank development.

In addition, several studies have pointed out that the cognitive and intelligence differences between countries can be a crucial factor in economic development and social relations between individuals. [3] emphasize the fact that the cognitive difference between the countries is likely to increase the level of economic development and GDP. Indisputably, it is clear in the recent research of [4] that the national education IQ strongly influences the social behavior of individuals. What is more, the banking sector has become increasingly

competitive in the world. This is particularly true for cooperative banks whose governance is structured based on a socially democratic system.

Working within the aforementioned context, this article examines the role of educational intelligence in a democratic system and its influence on the evolution of the cooperative banks, the economic and social development. In fact, many studies working on the banking sector have highlighted how the development of an effective relationship has led to an increased customer satisfaction e.g. [5], [6]. However, the purpose of our research is not about studying the relationship between individuals but to first explore the current concept of education in a developed and democratic country then to verify if education can be a key to improving the banks' performance hence the economic and social environment. Thus, this study examines on one hand, the link between educational intelligence and cooperative banks' performance and on the other hand it assesses the importance of education in developing the economy of a socially democratic environment.

## II. REVIEW OF THE LITERATURE AND RESEARCH HYPOTHESES

This study contributes the existing literature treating on the link between democracy and economic and financial development presented by [2] and [7]. Motivated by recent publications on intelligence and democracy (e.g. [8]; [9]; [10]). This paper aims to combine the aforementioned works, in the sense where democracy and the cooperative banking system's development on the one hand and social economy the other are the foundation of an intellectually advanced system.

We propose in this paper, two possible interactions to explain the significant interactive effect between intelligence and democracy on the social and banking growth, where the first is the cognitive ability in the social and economic development. According to [11], intelligence aims to understand the principles and rules governing the countries in order to better manage their ability towards more rewarding axes in terms of national development. Still in the same subject, [12] points out that corruption is lower in high-IQ societies and the economic development is superior. He

deduced that cognitive skills are more likely to detect and punish acts of corruption. Hence, other studies have established the role social responsibility in economic development.

However, scarce researches have shed the light on the involvement of education in the social and democratic development and the evolution of the financial and banking sectors. Indeed following the recent economic and financial perturbations, it would be interesting to develop a new model based on the knowledge that we call society, whose pillars are deeper values such as solidarity, sustainability and human development. In this context several existing studies clearly show how the forms of the social economy, including the development of cooperative banks which is our second point of interaction, were established in times of crisis, and that during these times, they not only have been more stable in terms of career security, but even managed to create more employments.

In light of these facts, our paper contributes to the literature in several ways. To begin with, we focus on cooperative banks, which are represented as new pillars of social finance. Indeed, they recognized how to integrate into developed country and witnessed major developments during the last years especially during financial crises. In fact, these banks based their functioning on the principles of solidarity, partnership and democracy. In this context, we have sought to empirically test the importance of education, which according to [11] and [12] is the key to nations' evolution. We examine whether the increase in educational level can affect the performance and stability of the cooperative banks. Secondly and following the research of [13] which revealed the existence of a strong link between democracy and economic growth, we sought to empirically scrutinize whether education can also have the same impact as democracy in the development and growth of the economy?

III. PRESENTATION OF DATA AND VARIABLES

The analysis of the relationship between education and the cooperative banks' stability on one hand and the economic growth rate on the other was established via a sample of 14 countries in the euro area. The Databases come from the European Commission Eurostat and the European Association of Cooperative Banks data for the period 2004 to 2014. The use of this relatively small cross-sectional sample is explained in a part by the omission of countries with small cooperative banking sector and by the availability of relevant information. The description of our variables is displayed in Table I.

TABLE I  
VARIABLES DEFINITION

Variable	Description	Definition and calculation method
Education	Average years of schooling at all levels	Encompass the average years of schooling of the population and aims to reflect the cognitive level in each country
Democracy	Democracy index	Arithmetic average of the civil liberties and political rights

		indices. Civil liberties are expressed by the freedoms of expression and belief, associated with the right to organize and the right to personal autonomy. While the political right is represented by the right to vote and political integration. This indicator of the quality of democratic institutions has been widely used in the empirical literature ([13]; [14]). This approach allows us to compare the effect of education on economic growth and development of cooperative banks in countries with strong and weak democracies
Integration	Social integration rate	The rate of the population social integration in each country. The use of this indicator shows the importance of education in strengthening the principles of solidarity and partnership among the population
Growth	Average Annual growth	The growth rate of GDP per capital. This variable is calculated to display the impact of education on economic growth
Performance	Z-scores	Recently used in a variety of studies e.g. [15]; [16]; [17]; [18]). This measurement was used to reflect the performance of cooperative banks. It is calculated as the sum of assets on capital ratio (CAR) and the sum of the profitability of the assets of the cooperative banks (ROA) that is expressed as the net profit rate on total assets divided by the standard deviation of return on assets (ROA), which aims to indicate the degree of risk present in bank balance sheets.
Members	Number of Stakeholders	This variable is calculated by increasing rate in the number of members i.e. Stakeholders in each cooperative banks .According to [19] the performance of cooperative banks depends on the concentration indices of members

Therefore our model is represented as follows:

$$education_{it} = \alpha_{it} + \beta_1 performance_{it} + \beta_2 membres_{it} + \beta_3 GPD_{it} + \beta_4 democracy_{it} + \beta_5 integration_{it} + \beta_6 education_{it-1} + \epsilon_{it}$$

regressions testing. Although the initial assessment of the correlation between the variables (present in Table II) gave us an idea about relationships between variables, the correlation analysis cannot be precise and determinative when it comes to the presence of causal links between series.

IV. RESULTS OF REGRESSION

To monitor the impact of education on the performance of cooperative banks and economic growth in a democratic and socially developed environment, we had recourse to panel

TABLE III  
CORRELATION MATRIX

	Education	Performance	Membres	Growth	Democracy	Integration
Education	1.0000					
Performance	-0.0662	1.0000				
Membres	-0.0908	-0.0425	1.0000			
Growth	-0.1178	-0.1519	-0.0002	1.0000		
Democracy	0.2100	-0.1591	0.0185	0.0039	1.0000	
Integration	-0.3521	0.1406	-0.2259	0.1179	-0.5090	1.0000

To achieve results, we used two estimation methods: individual fixed effects estimator and the estimator of the generalized method of moments (GMM). In this context, the panel regression fixed effects allows us to go beyond simple cross-country comparison and to examine the variation within countries, to see by the end whether a country is more likely to have a higher level of education in a democratic and inclusive environment.

TABLE IIIII  
PANEL REGRESSION RESULTS

Dependent variable	(1)	(2)	(3)
	Education	Education	Education
Performance	-0.44 (0.638)	-0.48 (0.630)	-0.01 (0.995)
Membres	1.83 (0.068)*	1.87 (0.061)*	1.01 (0.314)
Integration	1.12 (0.262)	1.10 (0.270)	-0.73 (0.466)
Growth	-3.02 (0.000)***	-4.84 (0.000)***	-5.56 (0.000)***

Democracy		-1.66 (0.097)*	-1.06 (0.289)
Education t-1			6.66 (0.000)***
Constant	11.71 (0.000)***	8.49 (0.000)***	3.85 (0.000)***
R-squared	0.20	0.22	0.22
Observation	154	154	154

The system GMM is used in regressions (3). P-values are reported in parentheses.\*Denote statistical significance at 10%. \*\*\*Denote statistical significance at 1% respectively

At the beginning of the analysis and to better see the interaction between our key independent variables, that define the performance of cooperative banks and economic growth, we omitted the democracy variable. The results of this regression presented in column (1) (Table III) confirm the existence of a positive and significant effect of education on the economic growth on the one hand and the increase members' number on the other hand. However, it was noted that education has no influence on social integration and performance of cooperative banks. More so when the democracy variable was included in the model (column 2), the results were the same. Yet, it was noted that education has a

significant influence on democracy. In summary, the main results of this study showed that education is more pronounced in countries with strong economic growth and with a high level of openness of mind and democracy.

The inclusion of the lagged dependent variable (education) as an explanatory variable (column 3), could introduce potential bias. Therefore, to work around this problem, we will use the generalized method of moments (GMM). Our results show that there is not necessarily a direct relationship between education and the cooperative banks' performance or even the democratic development because all the coefficients are not significant and do not have the expected sign. By cons, it was noted that the variable for economic growth is significant. So it was concluded that the effect of education can occur through its impact on the economy.

#### V. DISCUSSION

Our results were consistent with previous researches e.g. [2] in which it was affirmed that intelligence and level of education respectively have an influence on the growth of GDP. Also, with the work of [20] who deduced that democratic freedom increases the willingness to challenge the social, political and religious, which in turn can lead to rejection of the traditional conservative attitude. In other words, when considering the social, moral and economic situations, people whose cognitive ability is greater are able to understand, integrate and monitor economic progress and technological development with an open mind.

In addition, the variation in level of education between individuals can explain the insignificance of our social integration variable. Indeed, cognitive ability and level of education are different among individuals in a democratic environment; therefore their level of social integration is differentiated according to their belief and openness. According to [21], the intelligence level is the attitude initiator. Therefore it is believed that the results obtained in this study, about the significance of our member variable, strengthen the research of the aforementioned authors. Indeed, individuals, belonging to a democratic environment and growing up with a higher level education and openness, are more able to be integrated in the values and principles of cooperative banks. Hence, these people are more prone to risks taking thus investing in innovative projects. Regarding the non-significance of the relationship between cooperative banks performance and education, it is safe to presume that their performance is due to increased number of members of units, their level of educations is notwithstanding; although their attitudes and level of Education is key to have a good understanding and to build a consolidated social environment within the cooperative bank.

Moreover and as it was explained previously, education have an impact on the cooperative banks' performance through its role in the economy growth. Thus, it can be said that the influence of education is not the same in every country and that there is a unique educational threshold for all countries. Indeed, one can conclude that the level of education

differs in each country according to their democratic openness and the tolerance level of individuals.

#### VI. CONCLUSIONS

The previous empirical studies have emphasized the importance of democracy in economic growth and financial development. However, few attempts have been made to examine the influence of education in this democratic, economic and financial evolution. It is from this gap that this study stems its significance where it aimed to test whether education can influence the performance of cooperative banks and economic growth in a socially democratic environment or not. Our theoretical predictions, supported by econometric results showed that the impact of education is different in each country and the level of education has a strong effect on a significant and positive economic growth. Nonetheless, we believe that the influence of education is more complex and multifaceted. In fact, we sustain the belief that the impact of education is more related to the degree of mind openness and cognitive capacities of individuals, which was supported by our econometric results. Nevertheless, our results should be interpreted with caution and further studies are needed to understand the cultural differences and psychological behavior of individuals.

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