BABEȘ-BOLYAI UNIVERSITY CLUJ NAPOCA

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

BEHAVIORAL INFLUENCES ON INDIVIDUAL BANKING DECISION

– DOCTORAL THESIS ABSTRACT–

Thesis coordinator :
Prof. Ioan NISTOR, PhD

PhD Candidate :
Cristian BUZATU

Cluj-Napoca, 2015

KEY WORDS:
Behavioural finance, individual decision, savings, indebtedness, behavioural errors, decision architecture, financial literacy.

Acknowledgement:

This thesis was made within the framework of the strategic grant POSDRU/159/1.5/S/142115 entitled ”Performance and excellence in the Doctoral and Post-Doctoral Research in Romanian economics domain ”, co-financed by the European Social Fund within the Sectorial Operational Program Human Resources Development 2007 – 2013.

I would like to express my deepest gratitude to Prof. Ioan Nistor, PhD who guided my footsteps patiently and wisely along this work and who gave me the optimism and strength to finish this research.

I am also deeply indebted to Prof. Cristina Ciumaș, PhD, Prof. Adrian Mihai Inceu, PhD, Prof. Ioan Trenca, PhD and Associate Professor Viorel Dorin Lacatus, PhD for their priceless support given along my research.

Last, but not least, I would like to give my special thanks to my wife Gabriela and my boys Octavian and Serban who encouraged me and understood my absence or isolation in certain moments.

TABLE OF CONTENTS

Motto:

”The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.” — Alvin Toeffler

INTRODUCTION

The financial decision was approached in Romania mainly from the corporate management point of view which needs to make decisions related to the financial activity of the corporation (capital formation and adequacy, investments, profit distribution, etc.). The companies are lead by CEOs and other managers who make strategic individual decisions or linked to current activity even if these take place in a regulatory framework. Behind the scene composed of legal and organizational regulations which define the company, there are many human characters, different psychologies which are bonded to the influence of biases, emotions and social environment.

Taking into account the fact that the decision making process presumes the analysis of some alternatives in order to obtain the optimum results; this can be rational or emotional, based on concrete, real or assumed elements. The process can be a very rapid one or it can assume the collection of necessary data and profound analysis of the variants and their results.

Taking into consideration a simple but suggestive example just think about the situation when we want to cross the street a car is heading towards us. In that moment we need to make a decision. Applying the classical theory of rational choice, we should calculate the probability that the car would stop and according to the result to make the optimum decision – we jump out of its way or we continue our crossing. On the other hand – and this is how I think that things really happen– applying a model of making decision, we will quickly cross the street without calculating a certain probability of being hit.

Regarding the individual financial decision there are a series of errors which lead to a low financial efficiency, suboptimal decisions and insatisfaction. These errors are not influenced only by the level of financial knowledge, but also by the behavioural, socio-economic and psychological aspects.

Among the errors determinated by the level of financial knowledge and the information available, we may consider:

- consumers do not study the characteristics of a financial product before buying it: the efficiency ratio, the level of the associated risk, the costs involved ;
- people do not read all the terms and conditions when signing a contract – which leads afterwards to complaints and dissatisfactions regarding that product;
- consumers do not analyse all the offers that exist on the market at the moment of their purchasing the financial product;
- consumers do not re-evaluate the financial products they already have to evaluate the necessity of keeping them;
- people often purchase financial products that are not useful for them;
- consumers may have “myopia” when purchasing a product taking into consideration only the costs and long term benefits;
- some consumers can organise their money, at a cognitive level, in the so called “mental accounts”. Thus, they can assign a percent of their earnings to savings and, even if at a certain moment they buy a credit card or a consumer credit, they

continue to save the same percentage from their incomes with efficiency smaller than the costs of the credit.

- consumers may think that they get the correct and independent information from a society which has different ones, especially commercial;
- due to the level of financial knowledge they have no idea what questions to ask the financial adviser (from a bank, insurance agent, broker, etc.);
- people cannot tell the difference between some good pieces of advice and those for "interest";
- consumers excessively rely on the advice from their friends, acquaintances or family.

The suboptimal decisions regarding the use of financial products are due to the tendency of taking an action with a limited rationality. This depends on the diversified context in which the decision has to be framed and also on the way the consumer's mind sees this context. The followers of the behavioural theory consider that decision making "irrationality" is owned to the way the human brain simplifies the information received and processes it using two methods: bias and heuristics or decision shortcuts.

The bias determines people to be eager to act in a certain way because the way which corresponds to their bias represents a stimulus to act that way. For example people who do not have a turn to accepting the risk will consider this a stimulus to purchase less risky products. Among the most frequent biases we may specify:

- biases linked to risk which include abhorrence to the potential loss and the modifying of the preferences risk related to a change of the expecting yields;
- biases related to mental representations and accounts;
- biases linked to time perception, inconsistency of choices during a period of time, preferences towards immediate benefits to the detriment of long term ones;
- biases related to human ego: overconfidence, limited self-control, wishes, pride, feelings, routine and habits;
- biases linked to the group of influence which results from trust and loyalty, adherence to certain social norms;
- biases related to the limits of cognitive abilities: a lot of information and the default option considered as an established general rule.

The study of decisions in general which also includes the financial decisions requires a multidisciplinary approach, aspects of the process involving economics, psychology, sociology , mathematics and political studies, just to name some related fields.

The decision can be analysed from different perspectives: *psychological*, regarding the needs, preferences and individual values; *cognitive*, the decision making process being continuous and connected to the *normative* environment, as a logical, rational process which leads to choosing the best variant.

The behavioural finances were born from the necessity of explaining certain events which the financial theories failed to do, concentrating especially on the way the financial decision are taken. This science is based on an individual approach of the human nature which presents deviations from the behaviour assumed by classical financial concepts due to limitations and emotional and social influences. The followers of the new theory consider that the behavioural aspects from psychology can shape the financial decision making process.

Analysing the contribution of behavioural finances to the development of finance in general, the scientists take into consideration 3 major ideas (De Bondt et al., 2010):

(1) The human intuition is fragile – the base investment principles are not studied by any person who makes an investment. That is why people can make errors related to bias or they act according to some patterns.
(2) The reconsideration of the decision making process – the financial choices are identical to those from the medical or consumer goods field ;
(3) The personal beliefs are relevant in the financial field; rationality is not ubiquitous in real life.

People have limited bounded rationality (Simon, 1955) which determines them to use simplified procedures of heuristics or to have some biases which cause errors in the way of thinking and their choices.

Studies of American economists (Akerlof & Kranton, 2000) have shown the connection between the person identity and the economic decisions he or she or his/her acquaintances make: the degree of contentment and satisfaction increases once the person takes the decisions which improve the personal image, identity or vice versa.

Krugman (2009) Nobel Prize laureate, analysing the start of the financial crisis considers that modern economics should also take into consideration the concepts of the behavioural finances. Thus, analysing the investors' behaviour on international markets he discovered that these are influenced by excesses of exuberance or irrational panic and they have herd behaviour.

The behavioural finances include in classical theories the hypothesis of the humans real behaviour, the influence of the psychological factors confirmed through various experiments lead by economists and psychologists.

In a study conducted in 2010 by the Romanian Research Institute for Quality of Life member of the Romanian Academy, for the World Bank (World Bank, 2010) on the financial literacy in Romania regarding the daily financial management, the following conclusions resulted:

- Almost 65% of the Romanian population struggle to manage their daily needs and current commitments with a monthly income of less than 150 euro per family member;
- Less than a quarter of the population (23%) keeps a record of their expenses, but even so, 66% of them know the sums available for future expenses;
- Over half of the population (61%) spends all their money earned in a month before next wage, 26% of these run out of money before salary payment date "always" or "very often", and 35% "sometimes".

Only one percent of the 11% who go broke before the next salary use financial products (consumer loans, credit cards) to avoid this situation. The most used methods are: cutting costs (75%), interest-free loans from relatives or friends (62%), informal credit "on the book" provided by stores (42%).

The study concluded that in terms of current money management, except from the income level, the following factors are great importance: the level of financial literacy, education, age and area of residence. The correlation between these factors is a positive one: the more people have a higher income, financial literacy and superior education are higher, the older they are and residence in urban area, the better they manage their current household budget.

The same study mentioned above showed that approximately 51% of the population fails to save any of the monthly income. The majority of the respondents mentioned as a cause, the low level of income. In the last years the level of term savings has improved, due also to a tendency of spending limitation. Most people, who save (78%), are doing this thinking about unexpected situations while only 48% save for a long term plan: the improvement of living conditions, retirement plans, leaving a legacy for their children or gaining financial independence.

Many people do not take good decisions regarding the long term financial plans due to lack of knowledge, the lack of will in taking same actions, or sometimes even due to overconfidence. The lack of available information may be another cause of some suboptimal decisions regarding the long term investment (Mitchell & Utkus, 2003).

The idea of this research occurred as a result of my experience gained in 17 years of banking throughout I occupied different positions (commercial, internal analysis, management) within the local branches of an important bank from Romania. Thus, I could analyse directly the way the decisions connected to the use of banking products and services are formed observing the lack of rationality of people and the influence of behavioural factors.

The purpose of the research is to analyse the influence of certain factors which in many times are not included in the analysis of the individual financial decisions. We are taking in consideration behavioural, social and educational factors.

Due to heuristic decisions, bias, social influences and lack of financial knowledge people do not always take the best decisions regarding savings, indebtedness or the use of same simple banking products. In Romania the influence of these factors is accentuated by the lack of knowledge and financial experiences owed to a relative short period in which the population had to learn the concepts of market economy and the characteristics of financial products and services.

The main objectives during the research were:

1. reveal the influence of the behavioral factors, social norms and financial literacy on individual saving decisions;

2. determine the effect of behavioral factors on the borrowing decision and in the banks' landing process regarding customer relationship;

3. assess the level of financial literacy, financial expertise, the manifestation of behavioral factors, confidence in their own decisions and banking system to various socio-economic characteristics of the population in Romania;

4. validating a model of financial decision for Romanian individuals in terms of saving and borrowing through the financial literacy and experience, behavioral factors, confidence in their own decisions and confidence in the banking system;

5. identify the most efficient means to optimize individual financial decision taking into account factors with significant influence and the degree of manifestation on specific socio-economic segments of the population.

During the research, we used quantitative and also qualitative *research methods*. Data was collected throw observation and opinion polling. We applied a questionnaire using face to face interview and on line technique through specialised sites. The operators who applied this questionnaire were experienced, collaborators of the Regional Statistics Departments from Romania.

The choosing of the respondents was made using the probabilistic multistage theory taking into consideration the place of residence, grouped on their size (4 categories + București). In the cities the respondents were randomly chosen. From the socio-economic point of view, the relevant categories were: age, sex, main occupation, and level of studies, level of monthly income and the place of residence. The data collection was made between November 2014 – February 2015 using face to face interview(646 respondents) and using specialised sites on the Internet (157 respondents).

The questionnaire was built using questions validated by other international studies, but adapted to the Romanian economic and social environment in order to allow comparison in time and space. To test the degree of understanding and the relevancy of the questions, a focus group was set with 20 respondents aged between18 and 60. Taking into consideration their answers we understood better the public opinion regarding the analysed concepts and we adjusted some questions to determine a better level of understanding of the concepts.

The data processing was performed using the STATA 12.0 program.

PhD THESIS STRUCTURE

1st CHAPTER SUMMARY

In the first chapter we present the main theories regarding the formation of the individual decision and the psychological approach of their formation.

There is also a presentation of the normative theories according to which the decisions require the analysis of a large number of alternative possibilities of various scenarios before choosing one. These cases have certain probabilities, and the decision makers can determine the awaited case expected for each alternative. The final decision will be in favour of the best scenario and with the highest probability of occurrence.

Then we complete the frame of the decision making theory presenting the normative theories which try to explain some phenomena appeared on the international financial markets including the analysis of decision and the psychological factors.

Regarding the role of psychology in the analysis of individual decision we present the main contributions.

The analysis of the individual decision is made also from the point of view of a newly appeared science: neuroeconomics, which analyses the way the preferences are formed inside our brain. Further we talk about the main decision making errors due to heuristics and bias. The social environment, the social norms and the social roles also influence the personal decisions, especially the Romanians as the academician Constantin Rădulescu Motru emphasised in an analysis of the psychology of the Romanian people (Motru, 1937). The chapter ends with the role of the financial literacy as a basis of the individual financial decisions.

The next two chapters analyse the influence of behavioural factors on the main banking business lines: saving and lending.

2nd CHAPTER SUMMARY

The second chapter presents the main errors and bias that occur in the saving decision and the role of financial literacy in their optimisation. The chapter starts with an analysis of the main saving determinants and the presentation of the main studies in the field.

The importance of saving determined the necessity of combining economics with psychology in the attempt to identify the individual way of thinking, the human behaviour regarding the saving decision. We present the main research in this field.

As a result of the influence of behavioural factors the decision making errors appear that are linked especially to long term saving and which are discussed together with the remedies identified so far.

There are also numerous studies which show that the level of financial literacy in the world is low and it is correlated with the low rates of saving, so we will also deal with the influence of financial literacy and capability over the saving rates.

The chapter ends with a quantitative and comparative analysis of the perceptions regarding the economic uncertainty in Eastern Europe towards the developed countries from Western Europe.

The main hypothesis of research is that the uncertainty has a higher influence over the forming of individual saving rates in the countries which had a centralized economy than over people from countries which had a traditional market economy from the Western Europe. We considered that frequent economic problems determined by transition contributed to a high level of uncertainty. To analyse the hypothesis we took into consideration a set of panel data between 1995 and 2014 for 18 European countries, 8 developed countries from Western Europe with a traditional market economy and a high population (Germany, France, Italy, Great Britain, The Netherlands, Belgium, Spain and Sweden) and 10 East European countries (Romania, Bulgaria, the Czech Republic, Slovakia, Slovenia, Poland, Hungary, Estonia, Lithuania and Latvia). The data begin from 1995 and deal only with 10 East European countries due to the fact that the data are not available for all the states.

The econometric model used was the GLS one (Generalized least squares) with fixed effects. I have analysed the effect of uncertainty and I have tested using as control variables different macroeconomic indicators considered to be also determinants of saving: inflation rate, unemployment and changes in real wages (similar control variables were used by Ismail and Rashid, 2013).

Analysing the results, we observe that our initial hypothesis is not validated by the empirical results. Thus we cannot say that in East European countries the uncertainty has a higher influence over the forming of individual saving rates than over the population from countries with traditional market economy from Western Europe. However, we can observe that the saving rates from Eastern Europe countries are influenced more by an economic uncertainty confirmed especially by the unemployment rate. The negative expectations seem to have a higher impact over the individual saving rates from the developed countries.

A cause of the post-factum reaction from East European countries may be the low level of financial literacy and the degree of understanding of the market economy principles especially in the 90's, the saving being influenced more by a real manifestation of the negative economic phenomena than by a forward-looking thinking.

3rd CHAPTER SUMMARY

Chapter number 3 deals with the errors and bias which determine people not to realise the rational judgements regarding the borrowing decision. People do not have enough time, enough information, knowledge or necessary capacities to take into consideration and analyse all the options and take a decision to maximise their own profit. The empiric evidences which we present prove that not even in the borrowing process (referring to borrow from the bank), the human behaviour does not obey the rules of the classical economic models.

When people have to take a complex decision which assumes calculations and predictions about future, many of them rely on heuristic decisions, analyse the behaviour of acquaintances, adjust the decision according to framing and the implicit option. The studies in the behavioural area analysing the borrowing decision have shown the manifestation of overconfidence in personal judgements based on available information in the memory of the decision maker which makes that the afferent risk to be wrongly judged. Thus, the decision maker will be subject to a decision making error underestimating the future costs and over evaluating the present beliefs.

The manifestation of behavioural factors may appear under the form of borrowing decision stimulation determining an over-indebtedness of the person and difficulties in paying the debt, but also as avoidance to borrow even in the moments when the results would prove profitable (education and investments).

A special case is the appetite for borrow in exotic currencies (especially in CHF, JPY) due to low interest rates. The low level of financial literacy of population, the ”myopic” effect of current benefit towards future risks, herd behaviour or the wish of the banks to make big profits may be other causes of lending in foreign currencies.

The chapter ends with a qualitative research of the behavioural influences that arise from the banks' lending process at individual level.

The main hypothesis of this research is that the process of lending is influenced by the manifestation of the behavioural factors at both client's and bank clerk's level.

The data collection was made using the observation method.

To identify more exactly these influences I have divided the lifespan of a credit in 2 phases: the advertising and the granting of credit phase and the implementation, monitoring and recovery phase.

After identifying the appearance of the behavioural errors some remedies are propounded that can attenuate these influence. I consider that using some results of the research from the behavioural finance field in the bank-client relation would have benefic effects for both sides, contributing also to rebuilding trust in banks.

4th CHAPTER SUMMARY

In this chapter we present our *own model* of the construction of individual decision in the financial field that we tested on 803 respondents aged over 18.

To analyse the variables taken into account, the population sample was layered by the place of residence (5 categories). From the socio-economic point of view, the most relevant categories for the analysis of these variables were: age, sex, main occupation, and level of studies, level of monthly income and the place of residence. The data collection was made between November 2014 – February 2015 using face to face interview (646 respondents) and using specialised sites on the Internet (157 respondents).Taking into consideration that the face to face interviews have greater advantages regarding the quality and quantity of the collected data, we have mainly chosen this method applied by experienced operators, collaborators of The Statistics Regional Departments from Romania.

The questionnaire was built using questions validated by other international studies, but adapted to the Romanian economic and social environment, to be able to get through a specific brief of the correct answers – the quality of the individual financial decision, financial experience, the influence of the behavioural errors, the trust in banks and their own decisions.

Thus, the questions were grouped in above mentioned chapters, but randomly placed in the questionnaire. For each chapter was made an analysis of the influence of the economic and social factors and, in the end, the econometric model was validated taking into account the most significant variables.

The survey results highlighted the following aspects of the individual decision of the Romanian population:

The quality of individual banking decision is at a low level, most respondents (18.2%) getting only 4 points out of a maximum total of 20 that would show its high quality. The age distribution of respondents show an inverted U shape, with lows occupied by 18-24 years category and above 60 years category. The maximum quality of decision is made by the respondents in the age group 35-44 years.

In terms of employment, employers and employees have the highest quality of financial decision while unemployed, daily employees and individual farmers occupy the last places.

Increased education and higher income leads to a better quality of decision.

The people with residence in bigger towns have higher quality decisions, due to the concentration of highly educated people in the larger towns and a formal education made especially to work as resulting from occupational analysis.

The Romanian historical region with the best score was Crisana (7.9 points), followed by Maramures (7.5 points) and Transylvania (7.1 points) while Dobrogea occupied the last position with 5.5 points.

Research on financial literacy reveals a low level of financial literacy among the population of Romania. The questionnaire included three questions about compound interest, inflation and knowledge of the risk related financial products. Almost a third (27.7%) of the sample did not answer any questions correctly, while only 11.8% answered all the questions, the largest share of respondents having only one correct answer: 34 5%.

Most correct answers in the total sample were registered to the question of inflation (60.7%), followed by compound interest (39.6%) and risk of financial instruments (21.2 %). An explanation can be given for periods of galloping inflation experienced by current generations after 1990.

The female population have less knowledge showing higher rates for no correct answer (28.6% versus 26.4%) and lower than the male population at all correct answers (8.9% versus 15.5%). In terms of age, education and financial literacy occupations have similar distributions with quality financial decision, otherwise normal.

The highest weight of correct answers is recorded in big cities and Bucharest. Moldova and Dobrogea most respondents with no correct answer (48% and 41.9%), while the share of respondents holding Crisana and Maramures with the most correct answers.

Financial experience is low among the population due to the small number of banking products used. The largest share of respondents (22.17%) achieved only two points out of a maximum of 9 possible. The female population has distributed more compact between 2 and 5 points, but a weaker position than men to extremes: more answers with zero points and less than 5 points.

Age segments 35-44 and 25-34 showed the biggest financial experience (with an average of 4.29 points or 4.11) while those over 60 years financial experience reduced (2.02 points) due to lack of financial and banking products are used during the active life.

Employers show the largest financial experience among occupational categories analyzed while daily employees, the unemployed and retired people occupy the last places.

Financial experience is positively correlated with education, income and size of place of residence, their growth leading to an increased financial experience.

Behavioral factors influence is strong over the individual banking decision in Romania, 77% of respondents receiving more than half of the points that would have been obtained in case of a perfectly rational decision.

The lowest incidence of behavioral factors occurs in the age range 25-34 years, people over 60 are the most vulnerable to errors due to these factors. Employees, students and pupils have the best control over these factors while day laborers and farmers are the most influential individual. Studies, income and size of place of residence have a positive influence on awareness behavioral factors influence.

Analysing the *two aspects of trust*, we note that both are at a medium level, 44.15% of respondents believing that financial decisions taken earlier would have been better, and in terms of confidence in banking institutions, 38.8% gave a neutral response. Those who "rather trust banks" are 26.9%.

From the point of view of gender and age distributions responds do not differ significantly. Among occupational categories employers have the highest confidence both in their decisions and in banking institutions in contradiction to the unemployed who have the lowest levels of trust both segments.

Educational level increases the confidence in their own decisions, but could not identify a correlation between it and the level of trust in banks.

People with higher incomes have a greater confidence in their decisions, but the strongest confidence in banks is among people with incomes between 2000 and 4000 lei. We believe that this is due to the level of indebtedness and the emergence of negative feelings and experiences related to banking institutions.

Both confidence in their decisions and in banks recorded the highest level in towns with less than 50,000 inhabitants.

Although confidence in the quality of decisions is highest, this is not validated by the scores obtained by the inhabitants of these places in any of the previous categories: quality of decisions, culture and financial experience, behavioral errors. This leads to the idea that the level of financial literacy in this category is lower. Our assumption is confirmed by the score of financial literacy module where 61.8% of respondents smaller towns of 50,000 inhabitants were given one correct answer from three, and 21.7% did not answer any questions correctly.

In terms of trust in banking institutions in the small towns we consider that it is due to the confidence in bank staff witch comes from the community. In the case of villages the hypothesis is not confirmed becouse of the absence or a small number of banks.

Most respondents are confident in their own decisions in Banat with an average of 2.61 points (out of 4 possible) and Muntenia (2.59 points). People in Dobrogea show the slightest confidence in their decisions (2.13 points). Confidence in banks is manifested stronger in Banat (2.50 points) and weaker in Crisana (1.71 points).

5th CHAPTER SUMMARY

The fifth chapter presents the main focus of the international organizations, authorities, non-governmental organisations and the companies from Romania to improve the quality of individual financial decision.

Regarding the worries about the people’s capacity to take optimal financial decisions mostly generated by the financial crisis, there are concerns both at international level (World Bank, O.E.C.D.) and also at certain countries level to implement national programmes in order to increase the financial education among people and the access at information.

Starting from the frame established by O.E.C.D. to develop a strategy at national level in the financial education field, many countries began to implement certain national plans. We will present the stages of the implementation of these plans starting with the surveys about financial literacy of the people to establish the necessity of education and to identify some target groups, finding organisations willing to get involved in this process, a leader and the best ways of implementing and communication.

Because these programmes cannot guaranty an improvement of the individual decision making in the financial field, taking into account the fact that not all the people will show availability to learn, not all have the necessary capacities of understanding and using the financial terms or mathematical capacities to manage the information, we will also present the principles of libertarian paternalism.

This concept was introduced by Thaler and Sunstein (2008) to express those actions performed by the decision architects to influence people’s decision to make their life longer, healthier and better.

We analyzed the programs developed in Romania to improve the financial literacy of the population.

In the last section we present actions to improve the quality of the financial decision of the Romanians, actions structured on the three identified directions that have a significant influence over it: financial experiences, financial literacy and the awareness of behavioural factors.

Although the level of the correlation coefficients show a more powerful correlation between the quality of the financial decision and the financial decision (0,4838) than between this and the financial literacy (0,3633) we think that this situation is owed mostly to the lack of educational programmes in the past. We consider that information was gathered among adults especially through previous experiences in using the banking products and services. In conclusion, in order to improve the individual financial decision we cannot exclude the improvement of financial literacy as integral part of a national strategy.

The solutions take into account the most stringent necessities resulted from the market research, the most appropriate methods of dissemination according to the age of the people and the best moments in the life of a person which would determine an increase interest in developing the financial education.

FINAL CONCLUSIONS AND RESEARCH LIMITATIONS

In the past years, once with the increase of the complexity of financial products and the awareness of their risks, it has become obvious the necessity of increasing the decision making capacity for each person in the financial field.

International organisations like O.E.C.D., European Commission and World Bank being aware of the impact of the decision making capacity over the financial stability, have become more active in drawing up programs and guides to establish the level of financial education of the people from different countries. In this way, over the past years a series of international and national actions were started to increase the people's financial education. However the economic knowledge is not enough to have optimum individual decisions in the financial field, the human factor influencing significantly their quality.

We think that the multidisciplinary approach of the architecture of individual decision from the economic, psychological and neuroscience point of view, may explain more exactly the individual decision making process and determines the premises to identify the possibilities of their improving .

Starting from the concepts of behavioural finance which represents basically the inclusion of psychology in the classical economic theories, we have analysed the degree of influence of the behavioural factors in the quality of individual decision of the Romanian population regarding the use of banking products.

Our endeavour assumes the mixing of some economic and psychological elements used by behavioural finance to analyse the way of constructing the financial decision of the Romanian consumer of banking products and services. After identifying their level of influence we propound adequate remedies to improve the decision making capacity of the population in the banking field. The chosen approach was multidimensional analysing the architecture of the individual decision in light of financial literacy, financial experience, the influence of behavioural factors and the trust in their own decisions and in the banking system.

The econometric model built validates the powerful and significant influences of the financial experience, behavioural factors and the trust in their own decisions regarding the quality of individual financial decision. The financial literacy and the trust in the banking system do not appear as variables with a significant influence over the quality of the individual financial decision.

To test the validity of the model control variables were introduced as level of studies, age and income. The monthly income is also added as a variable which influences powerful and positively the quality of the individual financial decision.

Regarding the lack of the financial literacy as a significant variable in the model, we think that it is due to a specific financial knowledge accumulation in Romania more through financial experiences as a result of using banking products and services and less through a well defined educational system.

Thus, to improve the financial literacy of the next generation we suggest its introduction as a compulsory subject even from middle school and during high school. Among the theoretical aspects, the syllabus must also include the practical aspects regarding the use of paying methods, saving, lending and operations security.

To communicate the information to the retired people we think that written messages can be used under the form of letters or leaflets which include emotional stimuli (personalised letters, contests with prizes, using colours and self adhesive labels) or informal communication, especially in the rural area and small towns through informal leaders identified and trained by the local authorities.

The unemployed and the individual farmers may receive the necessary information as leaflets or other standard written papers distributed by the institutions they most often come in contact with (National Employment Agencies or county offices of The Payments and Intervention Agency for Agriculture).

The population with low income and /or a low level of studies may receive the minimum financial education using the TV programs under the form of some popular serials. These can include various financial problems which occur during a life and the proper way of solving them.

To have a higher impact among adults, the broadcast of financial information should be structured in that way to catch the important moments from a person's life which assume a change of the attitude towards money management.

The financial experiences may be increased among young people by combining the educational programs with the possibility to use financial products with very low costs or even zero costs, grouped under the form of an internet banking application.

The compulsoriness to have a current account for paying some financial aids or even wages can increase the financial experience in using the basis banking products.

The creation of experiences among pensioners, unemployed or other people with low income may be done using the radio and television. This way discussions may be simulated between different people and bankers on different topics: saving, lending, and using simple bank products (current account, cards) or certain special situations like: delayed loan instalments, the necessity of extra funds etc.

Regarding the awareness of the influence of behavioural factors among people with a high level of financial literacy this may be done by explaining the various influences and errors they can determine, simultaneously sustained by interactive applications that can prove them. These actions can be performed in interactive museums of money that can combine communication with audio and visual applications.

Concerning the people with a lower level of financial capability we may talk more about a protection towards the influence of these factors rather than awareness. This can be done applying the libertarian paternalism principle and the concept of ”nudging”, or the supplementary regulation of the financial market. Thus, the setting of an implicit option for the long term saving products or the compulsoriness of the financial institutions to promote some of the basis lending products (regarding the consumer credit) which later may be ”improved” with various supplementary functions, may be valid options for the people who do not have financial knowledge.

Possible actions of the supervisory authorities or professional associations would be: to issue a code of conduct for the entire Romanian banking system, to ensure some common procedures for all banks regarding the answer to complaints, to inform the clients when signing a contract about all the recovery processes, permanent training and testing of bankers, brief and clear presentation of all the risks and functions of each banking product at the moment of selling.

To make a self-critical analysis, this thesis presents advantages but also certain limitations. The main advantage is the interdisciplinary approach of the architecture of the individual banking decision regarding saving and borrowing. There are other studies regarding this theme, but only few deals with the existence of decision making errors due to psychological and behavioural factors.

Another advantage is the use of experienced operators specialised in data collection for qualitative research and collaborators of The Statistics Regional Departments from Romania which determines o superior quality of the collected data and of the obtained results.

The questionnaire construction which is based on questions used at international level, adapted to the Romanian context, is made to determine the financial literacy and financial experience.

The limitations of the research may exist both from the environment of analysis, but also from that of researchers. Thus among the main limitations we may consider:

- The sampling method chosen was a random method, so within the sample there is a over representativeness on some historical regions Walachia, Banat, Transylvania and Dobrogea and a lower representativeness on Oltenia, Crișana, Moldova and Maramureș;
- Although the data collection was made by specialised agents (80%), there may appear limitations from the point of view of the truthfulness of answers or the interpretation of questions;
- There may exist some subjective interpretations of the author;
- The econometric models have not been sufficiently tested.

Even if these limitations can negatively influence the results of the research we think that this study may determine a reference point in the development of the research of the individual decision making process, but also concerning the construction of some educational models in the financial field. The results of the research regarding the individual decision of saving or borrowing may be used by:

1. *each person* at an individual level to become aware of the behavioural influences, emotions, social factors in their own financial decisions, but also of the importance of financial literacy and experience in taking some optimal financial decisions for their future and their families';
2. *banking institutions* may use the results of this research to develop different products for their clients according to their capacity of understanding, the use of behavioural and emotional aspects to improve the communication with their clients; to train their employees to have a better relation with the clients taking into account the behavioural factors;
3. *the authorities that are in charge of educating people* to implement a national plan for increasing the quality of the decision making in the financial field on three directions: the increase of financial experiences, financial literacy and of the awareness of behavioural factors.

As future research directions may be taken into consideration the behavioural influences over the insurance decision especially regarding the insurances linked to events in people's life: death insurance, private pension system, health insurance, the enumeration not being restrictive.

Another research direction would be the analysis of the psychological factors over the personal budget management knowing that many Romanians have difficulties in managing their own income and monthly expenses. Although we are tempted to take into consideration the level of income as a main cause of these difficulties, the identifying and awareness of some suboptimal decisions may lead to better budget management.

BIBLIOGRAPHY (SELECTION)

1. Akerlof, G. A., & Kranton, R. E. (2000). Economics and identity. *Quarterly journal of Economics*, 715-753, available at http://public.econ.duke.edu/~rek8/economicsandidentity.pdf, accessed on 20/08/2012.
2. Akerlof, G., & Shiller, R. (2010). *Spirite Animale* , Publica, București.
3. Ariely, D. (2010). *Irational in mod previzibil. Fortele ascunse care ne influenteaza deciziile*, Publica.
4. Ando, A., & Modigliani, F. (1963). The" life cycle" hypothesis of saving: Aggregate implications and tests. *The American Economic Review*, 55-84.
5. Atkinson, A. & Messy, F.A. (2012). Measuring Financial Literacy: Results of the OECD/International Network on Financial Education (INFE) Pilot Study, *OECD WorkingPapers on Finance, Insurance, and*

Private Pensions, No. 15, OECD Publishing, available at http://dx.doi.org/10.1787/5k9csfs90fr4-en, accessed on 15/05/2015.
6. Ayres, I. (2010). *Carrots and Sticks: Unlock the Power of Incentives to Get Things Done*, Random House Publishing Group.
7. Baker, K. & Nofsinger, J. (2002). Psychological Biases of Investor, *Financial Services Review* 97, 101. available at http://www.researchgate.net/profile/John_Nofsinger/publication/230720757_Psychological_Biases_of_Investors/links/0fcfd50d0c09f84410000000.pdf, accessed on 10/02/2015.
8. Banca Mondială (2010). *Analysis of the Financial Literacy Survey in Romania and Recommendations,* available athttp://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/Romania_Financial_Literacy_June_2010.pdf, accessed on 25/09/2013
9. Banca Mondială (2013). *Making sense of Financial Capability Surveys around the World*, available athttp://responsiblefinance.worldbank.org/~/media/GIAWB/FL/Documents/Misc/Financial-Capability-Review.pdf, accessed on 02/05/2015.
10. Banca Mondială (2013a). *Toolkit for the Evaluation of Financial Capability Programs in Low- and Middleincome Countries – Summary*, available at http://www.finlitedu.org/team-downloads/evaluation/toolkit-for-theevaluation-of-financial-capability-programs-in-low-and-middle-income-countries-summary.pdf, accessed on 10/04/2015.
11. Banca Mondială (2013b). *Measuring Financial Capability: a New Instrument and Results from Low- and Middle-Income Countries*, available athttp://www.finlitedu.org/team-downloads/measurement/measuringfinancial- capability-a-new-instrument-and-results-from-low-and-middle-income-countriessummary. pdf, accessed on 15/04/2015.
12. Beckmann, E. (2013). Financial Literacy and Household Savings in Romania, *Numeracy*: Vol. 6: Iss. 2, Articol 9, available at http://scholarcommons.usf.edu/numeracy/vol6/iss2/art9, accessed on 20/09/2014.
13. Beckmann, E., & Stix, H. (2013). Foreign currency borrowing and knowledge about exchange rate risk.*Journal of Economic Behavior & Organization*, 112, 1-16., available at http://www.snb.ch/n/mmr/reference/sem_2014_11_21_Stix_Beckmann/source/sem_2014_11_21_Stix_Beckmann.n.pdf, accessed on 01/05/2015.
14. Beer, C., S. Ongena, and M. Peter (2008): "Borrowing in Foreign Currency: Austrian Households as Carry Traders", Swiss National Bank Working Paper 2008-19.
15. Benartzi, S., & Thaler, R.H. (1995). Myopic Loss-Aversion and the Equity Premium Puzzle, *Quarterly Journal of Economics* 110.1, pp. 73–92.
16. Benartzi, S., & Thaler, R. H. (2001). Naive diversification strategies in defined contribution saving plans. *American Economic Review*, 79-98.
17. Benartzi, S. & Thaler, R. H. (2007), Heuristics and Biases in Retairment Saving Behavior, *Journal of Economic Perspectives*, vol. 21, nr.3, page 81-104;
18. Bernheim, B.D. & Garrett, D.M. (2003). The Effects of Financial Education in the Workplace: Evidence from a Survey of Households, *Journal of Public Economics* 87, pp.1487–1519.
19. Bertrand, M., Karlan, D., Mullainathan, S., Shafir, E., & Zinman, J. (2010). What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment, *Quarterly Journal of Economics* 263, available at http://karlan.yale.edu/p/AdContentWorth_mar09Final.pdf, accessed on 05/09/2014.
20. Bertrand, M., & Morse, A. (2011). Information disclosure, cognitive biases, and payday borrowing.*The Journal of Finance*, 66(6), 1865-1893.
21. Bowman, D., Minehart, D., & Rabin, M. (1999). Loss aversion in a consumption–savings model. *Journal of Economic Behavior & Organization*, 38(2), 155-178.
22. Brown, M., & Zehnder, C. (2007). Credit reporting, relationship banking, and loan repayment. *Journal of Money, Credit and Banking*, 39(8), 1883-1918.
23. Browning, M., Lusardi A. (1996). Household Saving: Micro Theories and Micro Facts, *Journal of Economic Literature*, vol.34, page 1797-1855.
24. Brugiavini, A., & Weber, G. (2003). Household saving: Concepts and measurement. *Life-Cycle Savings and Public Policy: A Cross-National Study in Six Countries*, 33-55.
25. Buchanan, L., O´Connell A (2006). A brief history of decision making, available at https://hbr.org/2006/01/a-brief-history-of-decision-making, accessed on 01/06/2013.
26. Caetano, G., Palacios, M., & Patrinos, H.A. (2011). Measuring aversion to debt: An experiment among student loan candidates. *World Bank Working Paper*.

27. Camerer, C. (2008). *Neuroeconomics: Opening the Gray Box*, available at http://web.mit.edu/writing/2009/July/Neuroeconomics-Opening-the-Gray-Box_2008_Neuron.pdf, accessed on 31/03/2015.
28. Camerer, C. & Loewenstein, G. (2002). *Behavioral Economics: Past, Present, Future*, pag. 43, available at http://nowandfutures.com/d2/BehavioralEconomics%28conventional%29ribe239.pdf, accessed on 06/09/2015.
29. Camerer, C., Loewenstein, G., & Prelec, D. (2005). Neuroeconomics: How neuroscience can inform economics. Journal of economic Literature, 9-64.
30. Damasio, A.R.(1994), *Descartes error: Emonion, reason and the human brain*, New York, Putman, available at https://bdgrdemocracy.files.wordpress.com/2014/04/descartes-error_antonio-damasio.pdf, accessed on 02/04/2015.
31. De Bondt, W., Forbes, W., Hamalainen, P., & Gulnur Muradoglu, Y. (2010). What can behavioural finance teach us about finance?. *Qualitative Research in Financial Markets*, 2(1), 29-36., available at www.emeraldinsight.com/1755-4179.htm, accessed on 02/03/2013.
32. Denizer, C. & Wolf, H.C. (1998). Aggregate Savings in the Transition. *Savings Across the World Project, Washington DC: The World Bank.*
33. Denizer, C. & Wolf, H.C. (2000). The Saving Collapse during the Transition in Eastern Europe. World Bank Economic Review, 14, 445-455.
34. Elster, J., (1998), Emotions and Economic Theory, *Journal of Economic Literature*, Vol.36, page47-74
35. Evers and Jung (2007), Survey of Financial Literacy Schemes in EU 27, available at http://ec.europa.eu/finance/finservices-retail/docs/capability/report_survey_en.pdf, accessed on 12/05/2015.
36. Field, E. (2009). Educational debt burden and career choice: Evidence from a financial aid experiment at NYU Law school. *American Economic Journal: Applied Economics*, 1, 1-21.
37. Financial Literacy and Education Russia Trust Fund, https://www.finlitedu.org/, accessed on 31/03/2015.
38. Financial Literacy Foundation (2008). *Understanding Money Pays Off* , available at http://www.understanding money.gov.au, accessed on 15/05/2015.
39. Fisher, P. J. (2013). Is there evidence of loss aversion in saving behaviors in Spain?, *Journal of Family and Economic Issues*, 34(1), 41-51.
40. Fisher, P. J., & Montalto, C. P. (2011). Loss aversion and saving behavior: Evidence from the 2007 Survey of Consumer Finances. *Journal of Family and Economic Issues*, 32(1), 4-14.
41. Fiske, S. T., & Taylor, S. E. (1991). *Social cognition*, 2nd. NY: McGraw-Hill, 16-15.
42. Forbes, W. (2010). *Behavioral Finance*, UK, Wiley Publication;
43. Gale, W. G., & Levine, R. (2011). Financial Literacy: What Works? How Could It Be More Effective?. How could it be more effective, available at http://squaredawayblog.bc.edu/wp-content/uploads/2011/03/FSP-2011-1.pdf, accessed on 10/09/2014.
44. Gathergood, J. (2012). Self-control, financial literacy and consumer over-indebtedness. *Journal of Economic Psychology*, 33(3), 590-602.
45. Garon, S., (2004). The transnational promotion of saving in Asia. 'Asian values' or the 'Japanese model'. în: Garon, S., & Maclachlan, P. L., *The Ambivalent Consumer: Questioning Consumption in East Asia and the West*. Cornell University Press, Ithaca.
46. Garner, R. (2005). Post-it note persuasion: a sticky influence, *Journal of Consumer Psychology*, 15(3);
47. Gervais, S. & Odean, T. (2001). Learning to be Overconfident , *Oxford Journals, Review of Financial Studies*, Vol.14, nr. 1, Page 1-27, available at http://faculty.haas.berkeley.edu/odean/papers%20current%20versions/learningrfs.pdf, accessed on 02/08/2014.
48. Gilboa, I. (2010). Rational Choice, *Massachusetts Institute of Technology*, available at http://mitpress.mit.edu/sites/default/files/titles/content/0262014009app4.pdf, accessed on 01/02/2015.
49. Gneezy, U., Rockenbach, B., & Serra-Garcia, M. (2013). Measuring lying aversion. *Journal of Economic Behavior & Organization*, 93, 293-300.
50. Gounan, M. & Wang Y. (2010). China's high saving rate: myth and reality, *BIS Working Papers*, no.312.
51. Gul, F., Pesendorfer, W. (2005). *The Case for Mindelss Economics*, available at http://www.princeton.edu/~pesendor/mindless.pdf, accessed on 15/02/2015.
52. Hilgert, M., Hogarth,J. & Sondra B. (2003). Household Financial Management:The Connection between Knowledge and Behavior, *Federal Reserve Bulletin*,309-32, available at http://www.federalreserve.gov/pubs/bulletin/2003/0703lead.pdf, accessed on 12/04/2015.

53. Hochman, G., Yechiam, E. (2011). Loss aversion in the eye and in the heart: The autonomic nervous system's responses to losses, *Journal of Behavioral Decision Making* **24**: 140–156.
54. Holzmann, R., Mulaj, F., & Perotti, V. (2013). *Financial Capability in Low-and Middle-Income Countries: Measurement and Evaluation*, available at http://www.microfinancegateway.org/library/financial-capability-low-and-middle-income-countries-measurement-and-evaluation, accessed on 14/05/2015.
55. Hsee, C., Kunreuther, H. (2000). The Affect Effect in Insurances Decisions, *Journal of Risk and Uncertainty*, 20:2; 141]159.
56. Hsu, J. (2011). Aging and Strategic Learning: The Impact of Spousal Incentives on Financial Literacy, *Networks Financial Institute Working Paper* 2011-WP-06, Indiana State University, available at http://www.federalreserve.gov/pubs/feds/2011/201153/201153pap.pdf, accessed on 15/03/2015.
57. Huston, S. (2010).Measuring Financial Literacy, 44 *The Journal of Consumer Affairs* 296, 305.
58. Hyytinen, A., & Putkuri, H. (2012). Household optimism and borrowing. *Bank of Finland Research Discussion Paper*, (21).
59. Jappelli, T., & Padula, M. (2013). Investment in financial literacy and saving decisions. *Journal of Banking & Finance*, 37(8), 2779-2792, available at http://www.econstor.eu/bitstream/10419/57354/1/647478986.pdf, accessed on 02/08/2014.
60. Jolls, C., Sunstein, C. R., & Thaler, R. (1998). A behavioral approach to law and economics. *Stanford Law Review*, 1471-1550.
61. Kahneman, D. (2003), Maps of Bounded Rationality: Psychology for Behavioral Economics, *The American Economic Review*, 93(5), pp. 1449-1475, available at https://www.princeton.edu/~kahneman/docs/Publications/Maps_bounded_rationality_DK_2003.pdf, accessed on 02/06/2014.
62. Kahneman, D. (2011). *Gandire rapida, gandire lenta*, Publica.
63. Kahneman, D., & Lovallo, D. (1993). Timid choices and bold forecasts: A cognitive perspective on risk taking. *Management science*, 39(1), 17-31.
64. Kahneman, D. & Tversky, A. (1979). Prospect Theory: An Analysis of Decisions under Risks, *Econometrica*, Vol. 47, Nr.2.
65. Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American psychologist*, 39(4), 341.
66. Kahneman, D., & Tversky, A. (2000). *Choices, values, and frames*. Cambridge University Press.
67. Kahneman, D., Knetsch, J. & Thaler, R. (1991). Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias, *The Journal of Economic Perspectives*, 5(1), pp. 193-206, available at http://www.princeton.edu/~kahneman/docs/Publications/Anomalies_DK_JLK_RHT_1991.pdf, accessed on 01/02/2013.
68. Keynes JM (1936).*The General Theory of Employment, Interest and Money*. London: Macmillan, reeditat București, Publica 2009.
69. Kimball, M., (2015), Cognitive Economics, *National Bureau of Economic Research*, W.P. 20834, available at http://www.nber.org/papers/w20834.pdf, accessed on 05/05/2015.
70. Kose MA, Terrone ME (2012). How does uncertainty affect economic performance?. *World economic outlook Box*, 1, 49-53
71. Kreider, K. New Paternalism, available at http://www2.gcc.edu/dept/econ/ASSC/Papers%202015/ASSC%202015%20-%20Kreider,%20Kyle.docx, accessed on 05,05,2015.
72. Krugman, P. (2009), *Întoarcerea economiei declinului și criza din 2008*, Publica, București.
73. Kulikov, D., Paabut, A. & Staehr, K. (2007). A Microeconometric analysis of Household Saving in Estonia: Income, Wealth and Financial Exposure, *Working Paper Estonoan National Bank*, available at https://www.eestipank.ee/sites/default/files/publication/en/WorkingPapers/2007/_wp_807.pdf, accessed on 01/10/2014.
74. Larrick, P. (2004). Debiasing, în The *Blackwell Handbook of Judgment and Decision Making*, Koehler, D. & Harvey, N., eds. Oxford: Blackwell, 316–37.
75. Loayza, N., Hebbel, K. & Serven, L. (2000). What Drives Private Savings Around the World ?. *Savings Across the World Project, Washington DC: The World Bank.*
76. Loayza N (2000). Saving in Developing Countries: An Overview. *The World Bank Economic Review*, 14, 393-414.
77. Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational behavior and human decision processes*, 65(3), 272-292.

78. Loewenstein, G., (2000), Emotions in Economic Theory and Economic Behavior, *The American Economic Review*; 90, 2; EconLit page 426, available at http://www.cmu.edu/dietrich/sds/docs/loewenstein/emotionsEconTheory.pdf, accessed on 02/02/2013.
79. Lusardi, A. (2007). *Household saving behavior: The role of financial literacy, information, and financial education programs* (No. w13824). National Bureau of Economic Research, available at http://beta.accesstofinancialsecurity.org/sites/default/files/HouseholdSavingBehavior_NBER_2.pdf, accessed on 31/08/2014.
80. Lusardi, A. & Mitchell, O.,S. (2007). Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education Programs, *Business Economics*, 42 (1), 35–44, diponibil la http://www.dartmouth.edu/~alusardi/Papers/Financial_Literacy.pdf, accessed on 01/08/2014.
81. Lusardi, A. & Mitchell O.S. (2011a). *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, Oxford: Oxford University Press, pp. 17–49.
82. Lusardi, A. & Mitchell O.S. (2011b). Financial literacy around the world: An overview. *Journal of Pension Economics and Finance* 10(4): 497–508.
83. Lusardi, A., & Scheresberg, C. D. B. (2013).*Financial literacy and high-cost borrowing in the United States* (No. w18969). National Bureau of Economic Research.
84. Lusardi, A., & Tufano, P. (2009). Debt literacy, financial experiences, and overindebtedness. *NBER Working Paper No. 14808. National Bureau of Economic Research, Cambridge, MA*, available at http://www.nber.org/papers/w14808.pdf, accessed on 02/07/2014.
85. Mann, R. (2013). Assessing the optimism of payday loan borrowers. *Supreme Court Economic Review*,21(1), 105-132.
86. Manning, R. D. (2000). *Credit card nation. The Consequences of America's Addiction to Credit*, New York.
87. McKenzie, C. R., & Liersch, M. J. (2011). Misunderstanding savings growth: Implications for retirement savings behavior. *Journal of Marketing Research*, 48(SPL), S1-S13.
88. McLeod, S. A. (2010). Attribution Theory, available at http://www.simplypsychology.org/attribution-theory.html, accessed on 12/12/2014.
89. Meier, S. & Sprenger C. (2010). Present-Biased Preferences and Credit Card Borrowing, *American Economic Journal* 193, 195, 205, 206.
90. Milgram, S. (1963). Behavioral study of obedience.*The Journal of Abnormal and Social Psychology, 67(4), 371.*
91. Minsky, H. (2011). *Cum stabilizăm o economie instabilă*, Publica.
92. Mitchell, O. S., & Utkus, S. P. (2003). Lessons from behavioral finance for retirement plan design, *PRC Working Paper* No. 2003-6, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=464640, accessed on 01/02/2014.
93. Mitchell, S. O. & Utkus, S.,P., (2004), The Role of Company Stock in Defined Contribution Plans, în Mitchell, O. & Smetters, K. eds., *The Pension Challenge:Risk Transfers and Retirement Income Security*, Oxford: Oxford University Press, pp. 33–70.
94. Modigliani, F. (1986). Life cycle, individual thrift, and the wealth of nations. *The American Economic Review*, 297-313.
95. Moore, D. (2003). Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes, and Experiences, *Social and Economic Sciences Research Center*, 03-39 Washington State University.
96. Mottola, G. R. (2013). In our best interest: Women, financial literacy, and credit card behavior. *Numeracy*, 6(2), 4.
97. Motru, C.R. (1937), ”Psihologia poporului român”, Paideia, București, reeditat 1999.
98. Nagy, P. M., Jeffrey, S., & Zettelmeyer, J. (2011). Addressing private sector currency mismatches in emerging Europe. *Financial Market Regulation and Reforms in Emerging Markets*, 365-405.
99. OECD/INFE (2013), *Financial Literacy and Inclusion: Results of the OECD/INFE Survey across Countries and by Gender*, available at http://www.oecd.org/daf/fin/financial-education/TrustFund2013_OECD_INFE_Fin_Lit_and_Incl_SurveyResults_by_Country_and_Gender.pdf, accessed on 04/04/2015.
100. Politser, P. (2008), Neuroeconomics: A guide to the new science of making choices, *Oxford Scholarship Online*, available at http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780195305821.001.0001/acprof-9780195305821, accessed on 12/03/2015.

101. Pompian, M. (2006), *Behavioral Finance and Wealth Management* , John Wiley & Sons, Inc., Hoboken, New Jersey
102. Rabin, M.(1996). Psychology and Economics, *Journal of Economic Literature*, Vol.36, Nr.1, 11-46,pag 31, available at http://www.nyu.edu/econ/user/bisina/rabin_survey.pdf, accessed on 06/02/2015.
103. Remund, D. (2010). Financial Literacy Explicated: The Case for a Clearer Definintion in an Increasingly Complex Economy, 44 *The Journal of Consumer Affiars* 276.
104. Rizzo, M. J., & Whitma, D. G. (2009). Knowledge Problem of New Paternalism, *The. BYU L. Rev*., 905.
105. Rusu, E.C. (2007), *Psihologie cognitivă*, Editura Fundației România de Mâine, București.
106. Schlag, P. (2010). Nudge, choice architecture, and libertarian paternalism. *Michigan Law Review*, 108, 913-924.
107. Scheresberg, C., D., B.(2013). Financial literacy and financial behavior among young adults: evidence and implications. *Numeracy*, 6(2), 5.
108. Schrooten, M. & Stephan, S. (2003). Back on Track? Saving Puzzle in EU Accession Countries. *ENEPRI Working Paper, No. 23.*
109. Schultz, W.M., Nolan, J.M. & Cialdini, R.B., (2007), The constructive, deconstructive and reconstructive power of social norms, *Psycological Science* 18(5): 429-34.
110. Seonglim L, Hanna S, Siregar M (1997). Children's college as a saving goal. *Financial Counseling and Planning*, 8, 33-36.
111. Shefrin, H., & Statman, M. (2000). Behavioral portfolio theory. *Journal of Financial and Quantitative Analysis*, 35(02), 127-151.
112. Shefrin, H.(2010), *Behavioralizing Finance*, now Publishers Inc., Hanover USA, page9-25
113. Shiller, R.(1998), Human Behavior and the Efficiency of the Financial System, *National Bureau of Economic Research, WP 6375*, available at http://dido.wss.yale.edu/P/cp/p10a/p1025.pdf , accessed on 02/08/2014.
114. Shiller, R. (2005). *Irrational Exuberance*, Crown Publishing Group, page157-175.
115. Shu, L., Gino, F. & Bazerman M. (2011). When to Sign on the Dotted Line? Signing First Makes Ethics Salient and Decreases Dishonest Self-reports, *Harvard Business School*, Working Paper11-117.
116. Sloman, A. (2002). Architecture-based conceptions of mind. In In the Scope of Logic, Methodology and *Philosophy of Science* (pp. 403-427). Springer Netherlands.
117. Stango, V., & Zinman, J. (2009). Exponential growth bias and household finance. *The Journal of Finance*, 64(6), 2807-2849.
118. Stanovich, K. E., & West, R. F. (2008). On the relative independence of thinking biases and cognitive ability. *Journal of Personality and Social Psychology*, 94(4), 672.
119. Sunstein, C. (1996), Social norms and social roles, *Columbia Law Review,* 96, 903–968.
120. Sunstein, C. R. (1997). *Behavioral analysis of law*. U. Chi. L. Rev., 64, 1175.
121. Teixeira, P.N., Johnstone, D. B., Rosa, M.J., & Vossensteijn, J.J. (2008). C*ost sharing and accessibility in higher education: A fairer deal?* The Netherlands: Springer Publishing
122. Thaler, R. (1983), Transaction Utility Theory, *Advances in Consumer Research*, Vol. 11, pp.229-232, available at http://www.acrwebsite.org/volumes/6118/volumes/v10/NA-10, accessed on 02/02/2015.
123. Thaler, R. (1990). Saving, Fungibility, and Mental Accounts, *Journal of Economic Perspectives*, 193, 194-195, available at https://scholar.google.com/scholar_url?url=http://www.researchgate.net/profile/Richard_Thaler/publication/4727260_Saving_Fungibility_and_Mental_Accounts/, accessed on 01/05/2014.
124. Thaler, R. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, 12(1), 183-206.
125. Thaler, R. (2008). A Short Course in Behavioral Economics, *Edge Master Class, available at* http://www.edge.org/3rd_culture/thaler_sendhil08/class6.html, accessed on 31/01/2014.
126. Thaler, R. & Benartzi, S. (2004). Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving, *Journal of Political Economy,* 112 (81), 164–87.
127. Thaler, R. & Sunstein, C. (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. London: Yale University Press.
128. Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *Journal of Business*, S251-S278.
129. Tzanninis, D. (2005). What Explains the Search in Foreign Currency Loans to Austrian Households?, *IMF Country Report* No 05/249.
130. Willis, L. E. (2008). Against financial literacy education. *Iowa Law Review,* 94, 08-10, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1105384, accessed on 05/06/2014.