A practical approach on making use of case study research in economics

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A PRACTICAL APPROACH ON MAKING USE OF CASE STUDY RESEARCH IN ECONOMICS

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Abstract

This paper is assessing the intake that case study as a research strategy drives forward research in economics area. Development in research in economics field in the last decade together with the growth of information and communication technologies led to an internationalization of education. The first section of the paper defines and compares different types of case study research with other research strategies. The next two sections of the paper are of applicative nature: one of them explains how to build a case study research holistic design that can be used for researching on the dynamics of population migration phenomenon and the other explains how a case study embedded design is used to build a framework guiding decision making on software procurement.

Keywords: research strategies, case study types, holistic design, embedded design, global learning

1. CASE STUDY AS A RESEARCH STRATEGY

Case study research is just one of the different strategies for performing research activities in social sciences. Among other methods we can briefly state experiments, surveys, historical analysis and archive information analysis. Each and every strategy has its strong parts and its weaknesses, but mainly we can choose the right strategy depending on the following conditions: (a) the type of the research question, (b) whether the researcher has any control over the events and (c) whether the research is targeting contemporary or historical events.

Mainly, case study research is the „weapon of choice" when the question that we are trying to answer is like „how" or „why", when the researcher has a limited or low control over the events that he is researching about and the focus is targeted on a contemporary event in a real life context. This kind of explanatory studies can be perfected by two other kinds: explorative studies and descriptive studies.

Case study research can be used perfectly fine in economics in situations like investigating the economy of a region or city or building frameworks based on previous cases and new regional cases for bringing specifics and particularities in the research. This research strategy has the ability of making us figure out complex social phenomena. It allows the researcher to extract characteristics of events from real life, like life cycles, managerial and organizational processes, and changes in vicinities, international affairs and development of industries.

1.1. Comparing case study research with other research strategies

When comparing research strategies in order to choose one it is advised to have a general and pluralist view. The purpose in choosing one is to avoid glaring mismatches, meaning those situations when you intend to use a certain strategy while a different one is obviously more advantageous. Although each strategy has its own particularities, there are large areas of overlapping. The following table centralizes the research strategies depending on the three factors that should influence the strategy chosen in research.

Table 1. Relevant situations for different research strategies

Strategy	Research question type	Does it require control over the events?	Does it target contemporary events?
Case study	How, why?	No	Yes
Experiment	How, why?	Yes	Yes
Survey	Who, what/which, where, how much?	No	Yes
Archive analysis	Who, what/which, where, how much?	No	Yes/No
Historical analysis	How, why?	No	No

Source: COSMOS Corporation [1]

The first condition is about the type of the research question [2]. A basic system for classifying these types of questions is the series of questions “who?”, “what?”, “which?”, “where?”, “how?” and “why?”.

If the research question is mainly like “what?” then we can have two possibilities. Firstly, some of these questions are of explorative nature. Secondly, some of them have in view the aspect of finding “how much?”. It is most probable that these types of research questions are to be answered doing surveys or archive analysis rather than case studies.

Similarly, the questions like “who?” and “where?” are susceptible of favoring strategies based on surveys and archive analysis.

On the other hand, the questions “how?” and “why” are more of explicative nature and susceptible for using case studies, historical analysis and experiments as research strategies. This is because they deal with operational activities that need to be tracked back in time, rather than determining their frequency or incidence.

If the research questions are like “how?” and “why?”, then possible research strategies are the experiment, the case study or historical analysis. What further differentiates the choice is whether the researcher has control over the events and if the events are contemporary or not.

We can do experiments when the researcher can directly manipulate the behavior. This is possible in a lab where the focus can be on one or just a few variables, or on the field where the term social experiment is gaining ground, situation when the researcher targets different groups of people in totally different ways [3].

1.2. Different types of case studies

The most common definitions of case studies have made this research strategy even more known to the research community and reminded of the variety of situations when this strategy proved to be most valuable. From the perspective of an observer, the case study research strategy is defined as it follows: “The essence of a case study, the base tendency among all kinds of studies, is the attempt to clarify a decision or a set of decisions: why were they taken, how were they implemented and with what results [4].”

Other researchers stated that the case study research starts with “the logic of the design…a strategy to be preferred when circumstances and research objectives are adequate [5]”.

A case study is an empirical investigation that can be used to research on a contemporary phenomenon in its real life context when the boundaries between the phenomenon and the context are not very well delimited.

The investigation of the case study is managing the technical situation in which the variables we are interested in are more numerous than the data sources, and as a first result, are based on multiple proofs or data sources, thus being necessary to triangulate the data. As a second result, the investigation benefits of the existence of previously made theoretical hypothesis with the purpose of guiding the gathering and analysis of data.

In other words, as a research strategy, case study represents a pervasive method, which includes the logic of design, techniques for collecting data and specific approaches for analyzing it. Therefore, case study research is not just tactic for data gathering nor a simple design feature [6], but a proper and complete research strategy.

There are variations in case studies used as research strategies. This type of investigations includes both case studies on a single case and also case studies done on multiple cases. There were studies that tried to make a clear difference between the two situations but these two situations are in fact two kinds of case study designs.

Case studies can contain quantitative data and even limit only to this data. Most preferable, the difference between quantitative data and qualitative data should not be criteria for making a distinction between research strategies.

Case study research strategy should not be confused with qualitative research [7]. Different from qualitative research, case study research can be based on any mix of quantitative and qualitative data. Moreover, it is not mandatory for case studies to use direct and detailed observation as a data source.

At its simplest, the research design it’s the logic that connects the empiric data to the initial research questions and finally with the conclusions. Using a more academic way of defining it, the research design is that logic plan that takes us from “here” to “there”, where “here” is the initial set of questions we are trying to answer and “there” is the set of conclusions regarding those questions. Between these two ends there are a major series of stages, among them having data gathering and data analysis. More advised opinions say that a research design comprises at least four

aspects: which are the research questions, which data is relevant, which data has to be collected and how the answers should be analyzed.
The design is supposed to maximize four aspects that regard the quality of the study: construct validity, internal validity (explicative and causal studies), external validity and fidelity. There are four relevant fundamental designs, in two pairs: the first pair is designs for individual or multiple cases and the second pair (which can appear combined with either two types of the first pair) is represented by holistic or embedded designs.
For case study research there are five design components of critical importance. These components are the research questions, the hypotheses, if any, the analysis unit or units, the logic used to tie the gathered data to the hypotheses and the criteria used to interpret findings.
The analysis unit might even be a person if we are researching the migration phenomenon, or let's say crimes committed by underage citizens. Of course, the case can be a certain event or entity which is not as well defined as a person is. There were case studies done on decision making, on private or governmental programs, on implementation processes and organizational changes [8].
The fourth and the fifth component of case study research design components are very little discussed in most pieces of literature on the matter. The most promising approach for case studies in this regard is pattern matching, a method which we can use to relate information on the case study with a theoretical hypothesis. More exactly, we can describe in advance patterns for some of the hypothesis and then prove that the data fits better to some of the patterns or one of the patterns described previously. If we consider the patterns to be alternative hypothesis then this is a technique to link the data to the hypothesis.
By defining the above five elements we start to build a preliminary theory on the subject of the case study. In case study research, the theory is developed before we start collecting data. Developing a theory is a key part, regardless if the purpose of the case study is to propose a new theory or to test it. As being previously said, a common theme to do case studies on is evaluating programs financed out of public money. Here we should make a difference regarding the theory of the case study. In a case like this, we should not confuse the theory of the program, for example how can we get to a more efficient education system, and with the theory of implementing the program, for example how can we implement more efficiently an educational program. A theory which is thoroughly written must be at the level from which we can generalize the results of the study.
Using statistical analysis to generalize the result of a case study is a serious error [7] because case studies are not sampling units. In this matter case study are more similar with experiments, therefore analytical generalization is the method to use. Analytical generalization uses a previously developed theory as a pattern to be used to compare the results of the study. If it is proven that two or more cases confirm the theory, then we can claim we have a replication, like in research based on experiments. These results can be considered even more solid if two or more cases confirm the theory, but at the same time, they don't confirm an alternative theory which seems to be as plausible as the one that has been confirmed. This situation is called a level two deduction [9].

2. CASE STUDY RESEARCH USE IN RESEARCHING ON MIGRATION PHENOMENON

Firstly we will present you the important role that immigrants have in the economic development process of a society. Remittances are a principal factor which has influence over the economic development process. So the conjecture I will start with in this research refers to the fact that remittances contribute to the economic development of Romania's North-East region. The purpose of this research is to identify the most important ways through which remittances can contribute to economic development. Finding the connection between remittances and economic growth will help us formulate some recommendations which will maximize the remittances positive effects concerning Romania's economy and to facilitate their transfer, so that their value would grow up. Because the number of immigrants is higher and higher, also the remittances level in increasing. It is extremely important to analyze how this influences the economy and how we can maximize their contribution to the economic development.

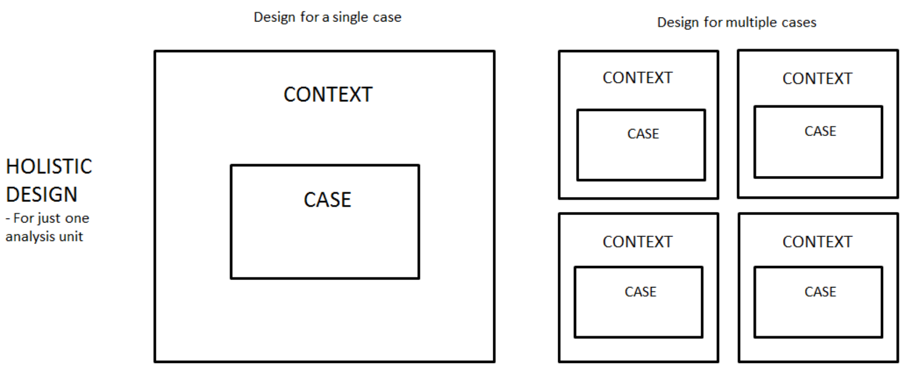
We will take into consideration the case study as a research strategy for this matter. Possible hypotheses examination and the confirmation that the purpose of this research has a major importance for Romania's North-East region is one more reason. The case study represents a research strategy which complies with some circumstances supported by reasons about which I will discuss in the next paragraphs.

A reason for using an individual case it is emphasized by the idea that it represents that crucial case in one well done theory verification. The theory sets off some obvious hypothesis and also the circumstances in which they are available. To confirm or to drop this theory, a particular study can accomplish all conditions for making a test [10].

For emphasizing what I meant before, I will take for example one of the most important theory concerning the migration phenomenon, namely the push and pull factor's theory. This theory was developed by Everett Lee and relied on the opportunity's model released by the American sociologist Stouffer [11] who mentioned that the movement's dimension between two areas depends mostly of the opportunity's number which occurs between these two points. As a matter of fact, the development degree of some areas is influencing more the migration evolution than the distance between them. Some studies show that the majority of the poor people are living in the North-East part of Romania, this region holding also the majority concerning the least developed districts from Romania.

In most cases those who take the decision to leave abroad are the young people from the country side. If at the beginning the immigrant were seen like persons without superior studies, today, young people, students, single persons, who have an average wage and who are still working are those involved in the migration phenomenon. The wage from Romania is considerably lower than EU's average and the fiscal system together with deficiencies from the social assistance system, emphasize the migration decision making process. Half of Romania's poor people are not those from the social excluded people: unemployed people, chronically sick or persons with disabilities, but are represented by those people who have a permanent job, but who have needs which are not be covered by the wage real level [12]. To draw a conclusion, of what I mentioned before, we can say that the migration way is determined by the possibility to obtain higher wages and by the exploitation of some developed areas.

Figure 1. Case study holistic design



Source: Application of case study research [7]

Using this design for this particular migration case is partially due because it's the representative case for North-Eastern Romania. In this case, we are trying to capture the circumstances and the context of a common situation in this particular area of Romania. We have to be aware that we cannot bring migration to discussion unless we have in focus the people and the institutions with which they interact.
Choosing just one case in our research is also because this case is an almost extreme case, if not a unique one. This North-Eastern region is the area in which this phenomenon is more present that in the whole rest of the province of Moldova. According to a World Bank report, Romania is ranked 10th in the world and second in the E.U. from the remittances point of view. What we can study in this research is also what happens with the remittances once they get back home, we can evaluate the capacity of saving or investing of the people that are still home. Even if part of this money is for immediate expenditures, they represent a real factor for economic growth.
We consider that the study of migration in this region is a new topic for research and this is a revealing case that could not be researched before due to various reasons, one of them being the political regime before the 1990's when people were not allowed to leave the country in such large numbers that could count as migration. The research can bring light over the life of these people, observing them can explain the external migration from the North-East area and help improve public service so that their needs are better met.
We can do research on this case in various moments in time. One of these moments could be before the 1990's when this phenomenon was limited or lacking, as it was

declared by the authorities though there still were accounted a few illegal migration cases. A second period in time to research on this case would be from 1990 to 2007 when the number of emigrants increased dramatically and remittances started to be a visible part of the gross domestic product. The third period that we can include in our research is starting from 2007 when Romania entered the E.U. and citizens started to be able to exit the country toward other European countries without having a visa. In this period, an interesting segment would consist of topics like institutional convergence and alignment of internal regulations with European regulations about the labor market and free passage of citizens. Studying from the point of view of the three periods would help us build a migration theory that could make us understand better how the phenomenon evolved and show us where it is heading. In this individual case study we can have more analysis units, leading to a more complex design. These units can bring more details over the context, but if we insist too much on the subunits we can lose the holistic aspects of the case and we risk changing its nature and focus.

We consider that the migration phenomenon is a component of our society that is more and more present in Romania; it can be a factor that stimulates the global market and a tool to regulate and balance the labor force in different regions. There are also a series of benefits for the countries that welcome labor force from other countries, such as having a labor force that is already trained and capable of good results with lower expenses for the companies.

As for one of the main results of migration, the remittances, it is obvious that if they are big enough they can have an influence over the economic potential of a region. The urge to save money is usually lower in the families that are receiving more money from abroad, partly because they usually are younger families and spend more. Also, younger families have a tendency of spending more money on school for their children and they invest in agriculture by upgrading their farming oriented household. It is known that in this region the constructions market and real estate registered growth in the next periods after migration started to increase [13]. In the country side of the region, often the remittances are used to cover day to day expenses, in many cases by elderly persons still living in their native region, the remittances send by their relatives becoming a substitute for the lack of employment opportunities in the region.

In Romania, remittances, as in other countries, are a potential source for savings, investments and capital accumulation. It looks like that ensuring and promoting a productive use for the high amounts of remittances that are coming to Romania should be an important topic for the decision factors from Romania, thus understanding the migration will help in this matter.

Summarizing, we find that individual case studies are a frequent design in doing research, having here the two possibilities: holistic design or embedded design. In our case a holistic design on a single case is justifiable because of the reasons stated above. Thereby, our case is a crucial test for an existing theory; it is a rare or unique situation, it is the relevant case for the region of Moldova and its purpose is to reveal the extent of this phenomenon.

3. USING CASE STUDY RESEARCH FOR BUILDING A FRAMEWORK GUIDING DECISION MAKING

When doing research on decision making, case study research is a research strategy to be preferred. Starting with the five components of the design, on this particular research we are trying to build a framework guiding decision making on open source software procurement in public bodies, like cities, hospitals, ministries and others. Open source software can enable municipalities in providing better service to its citizens by using the power of ICT (information and communication technologies). E-government solutions based open source software or which have integrated it are possible and may be feasible. Leverage can be obtained by public servants using open source software on their work computers, economic gain can be obtained in certain situations from implementing solutions based on open source software in public administration [15]. This is, to some extent, an important piece of the big picture of open source software use in municipalities, but further on, we are going to focus only on how we can make use of case study research to perform such a study.

The same study can involve one or more analysis units. This is happening when we focus on more than one sub-cases of the same case. In our decision making case, our case is represented by a public program that is implementing open source software in municipalities that involves a number of smaller separated financed programs, like desktop implementations, server implementations, web services implementations, projects than in this case would represent the analysis units. No matter how we select these units, we obtain what we call an embedded design.

The embedded design brings better focus over what we study. We have to keep in mind that the main focus should be on the main analysis units. The same study can consist of one or more cases. When this situation occurs, we are using a embedded design for multiple cases, design which is used more and more in the last few years. This is the case of our study, which is dealing with more than one local municipality.

In this research, doing a study on multiple cases comes with the advantage that will make the data, the proofs, more convincing and the study will seem to be more rigorous. The drawback to this is that this will require more resources and a longer period of time which may go over the capabilities of a young researcher.

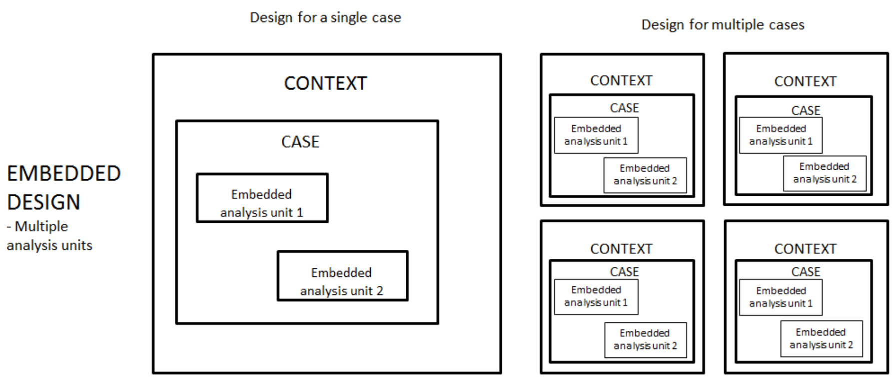
In our study, we will approach the multiple cases as approaching multiple experiments, meaning that we will follow a replicability logic. Replicability and not sampling is the way to go in case study research [7]. For example, when a breakthrough is obtained in an experiment, the purpose becomes to replicate the result in more experiments. Some experiments would keep all variables identical while other will change some to view the response.

In the same line of thinking, each case study must be carefully chosen so that it will provide similar results or to provide different results, but from foreseeable causes.

An important step in the replication process is developing a theoretical framework. This framework must state the situation when certain phenomenon occurs and also the situation when chances are slim. Later on, this framework will be the pattern used to generalize on other cases.

Applying a sampling logic to case studies would be wrong. Firstly, case study research is not the best strategy for determining the predominance of a phenomenon. Secondly, a case study covers the phenomenon and its context, therefore are resulting too many possible relevant variables.
The theory is based on cases obtained from the literature from previous open source software implementation. This will be our ground for generalization. Based on what is observed on different other cases, we will define possible analysis unit to find in our case studies and also we will define criteria for choosing the case study to be performed in order to be relevant for the theory.
Setting hypotheses based on what is observed in previous cases will help us in defining patters for what the results could be and determine causes for different kinds of results. The cases involved in the study must serve a similar goal, and similar or different findings must be anticipated when starting the research.

Figure 2. Case study embedded design

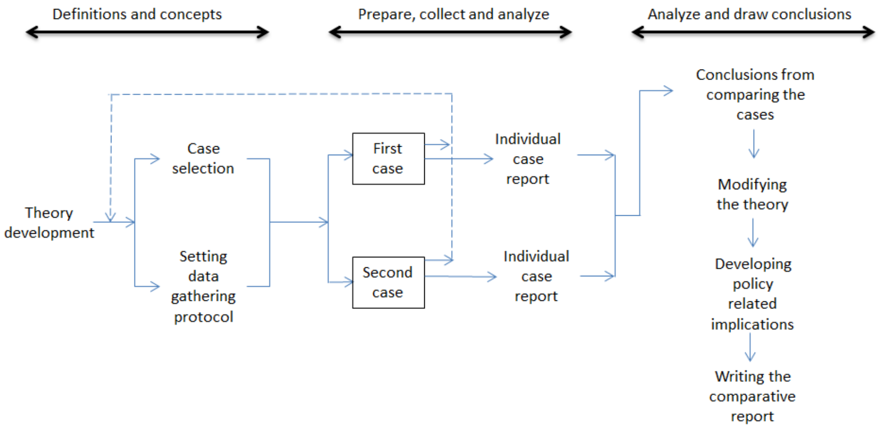


Source: Applications of case study research [7]

In our particular case, we will be performing two separate case studies in municipalities in northern Romania. In each case there might be the need to survey the persons involved in the decision process. Even so, these results will not be put together, but will make part of the findings for each separate case. This data will be mostly quantitative, focused on the decision process that occurred in each case and will be used together with implementation data, work progress data and efficiency status data to explain the success and the activities of the case. If, the data from both cases would be merged, it would mean that we are not using a design for multiple cases, but a survey design.
For each separate case, it is recommended that the report to state how and why a certain hypothesis has been confirmed or not. The report must state also how much of replication logic has been applied from one case to the other and why we have foreseen that a case will have certain results while another will have different results (if applicable).

When doing the research we have to plan using a well-defined method. We should start with defining and building the theoretical framework, then with preparing, gathering and analyzing data and in the end with an overall analysis and drawing conclusions. This kind of logic provides a high contrast next to the sampling logic of a survey design.

Figure 3. Method for the case study



Source: COSMOS Corporation [1]

The method above is mostly intuitive but there is one element that needs to be explained and that is the dotted feedback line. The line is there in case a major finding occurs while performing one of the case studies, like if one of the cases does not fit the initial design. In this situation, before moving on we have to rethink the research. This might mean that we could choose a different case or we can make some changes on the method for collecting data.

In our research, very important things are the analytical benefits that derive from using two cases. The analytic conclusions of two cases, at which we get independently, are stronger than the conclusion of one. Moreover, it is possible that the context for each case to be different. Having different contexts, if we still get to the same conclusions we will enhance our possibility to generalize them.

As seen from both the strategy and the design, case study research proves to be a very resourceful strategy to use in this study on decision making regarding open source software adoption. The method must be rigorous in order to obtain quality outcome and this can be achieved with a similar design to the method that was suggested. Not only that enables us to treat different cases separately, conclusions are also drawn separately in the individual case reports and then from comparing the cases we obtain the final conclusions that lead to upgrading the theory. Having a solid base, the theory developed in the beginning, we check out hypotheses by performing the case studies and then generalize the results.

CONCLUSION

When coming to researches done by using case studies the final outcome has to be exemplary. An exemplary case study reaches beyond the methodological procedures described in three chapters of this paper.

There are a few characteristics in order to make our own case study research get closer to the exemplary case study research that we are trying to reach. The case that we choose must be eloquent to the questions that we are going to answer. Before choosing a case study the researcher must describe the contribution that he will bring to the subject supposing that the study will be carried on successfully. If the answer to this question is not satisfactory then he must reconsider.

For explicative case studies it is good practice to examine alternative hypotheses and analyzing data from this angle too. Even if the study is explorative or descriptive, analyzing data from different perspectives will increase the quality of the case study.

The case study must provide sufficient proofs. An exemplary case study renders logically and efficiently the most relevant proofs so that the reader itself can see the merits of the analysis. We can gain the trust of the reader by providing sufficient data and convince him that this data was gathered thoroughly according to a methodology.

The case study must create a feeling of completeness. A way to do that is related to obtaining data, the researcher must be convince that he made an exhaustive effort for collecting all relevant data and that there were no constraints while doing the research. One more way to get closer to completeness is to pay special attention to the limits of the case, meaning the distinction between the studied phenomenon and its context. The way to do it is to show that the closer we get to the limits of the case, the less relevant data we gather.

It is also very important the way we write the case. Writing an exciting material requires experience and talent. The more often we write for the same audience then most probable the better we can reach them. The clarity of the text can be improved by rewriting it, activity that is always recommended to be done when working on a thesis or important paper.

Both subject approached in this paper are of actuality and great interest for public bodies that can benefit from understanding them better. Software procurement in the public service is a case that involves great investments in technology, thus can even change the balance of the market and therefore decision making on this topic must be crystal clear. Migration is a more subtle phenomenon and the administration has to understand how the needs of these people can be met and also encourage them to invest their money toward the financial system and not save them in their own homes.

We consider that case study research can serve well in researching these topics and that the methodology proposed in this paper on how to use it brings more trust in this strategy.

REFERENCES

[1] COSMOS Corporation (2000), *Cross-case analysis of transformed firms*, in "More Transformed Firms Case Studies", pp. 111-123, U.S. Department of Commerce, MD

[2] Hedrick, T., Bickman, L., D.J. (1993), *Applied Research Design*, Sage, Newbury Park, CA

[3] Boruch, R., (1993), *Conducting randomized experiments*, Sage, Thousand Oaks, CA

[4] Schramm, W. (1971), *Notes on Case Studies of Instructional Media Projects*, Academy for Educational Development, Washington, DC

[5] Platt, J. (1992), *Case study in American methodological thought*, Current Sociology, Cambridge University Press, NY

[6] Stoecker, R. (1991), *Evaluating and rethinking the case study*, The Sociological Review, pp. 88-112

[7] Yin, R.K. (2003), *Applications of case study research*, Sage, Thousand Oaks, CA

[8] Feagin, J.R., Orum, A.M., Sjoberg, G. (1991), *A Case for the Case Study,* University of North Carolina Press, Chapel Hill

[9]Yin, R.K. (1991), *Case study evaluations: a decade of progess?,* National Institute of standards and technology, U.S. Department of Commerce, Gaithersburg, MD

[10] Agranoff, R., Radin, B.A. (1991), *The comparative case study approach in public administration*, Research in Public Administration, pp. 203-231

[11] Cucuruzan, R.E. (2009), Migratia si mobilitatea fortei de munca din Romania in contextul integrarii europene, Editura Fundatiei pentru Studii Europene Ideea Economica,Cluj-Napoca, p. 64

[12] Juravle, D., Incaltarau, C. (2011), *Romania and the international migration of labor during the global crisis,* 18th International Economic Conference-IECS, Sibiu

[13] Faini, R. (2007), *Migration and Development: Mutual Benefits?,* Proceedings of the 4th AFD-EUDN Conference, 2006, Research Department, Agence Française de Développement

[14] Bîrsan, M., Cramarenco, R. (2005), *Romanian migration and the integration into the EU în Pascariu*, Uniunea Europeană între primul şi al doilea val al extinderii spre Europa Centrală şi de Est Editura Sedcom Libris,

[15] Teiu, C. (2011), *E-government in Romania – Where are we?*, Globalization and Higher Education in Economics and Business Administration, Iaşi