

**STRATEGIE DE DEZVOLTARE PENTRU BĂNCI ÎN URMA CRIZEI
ECONOMICO-FINANCIARE**
**BANKING DEVELOPMENT STRATEGY FOLLOWING THE ECONOMIC AND
FINANCIAL CRISIS**

Teză de doctorat – Rezumat

pentru obținerea titlului științific de doctor la

Universitatea Politehnica Timișoara

în domeniul de doctorat Inginerie și Management

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luna martie anul 2018

Banks integrate payment systems that allow local markets to work, companies become competitive, and individuals travel in remote places without having trouble making payments or using bank products. Without a well-structured banking system, the currency could not circulate, and it would be more difficult to create markets for goods and services and for the movement of people and goods. Banks are also essential as financial intermediaries. In other words, they use the savings of some people and make them available to others who need them. Without this operation, the ability of people and companies to invest would be very limited.

The purpose of this research is to develop a strategy for banks in the Western Region of Romania. This development strategy contributes to the goal of attracting new customers for banks to develop as a result of the economic and financial crisis. The strategy is addressed to universal banks, and the target segment is that of individuals. Following the valuation of the products and their impact on the banking system, customers were selected as individuals (or individual clients). The proposal for a strategy for the development of banks following the economic and financial crisis contributes to the competitiveness of the Western region of Romania. It is important to identify the specificities of each area of the country, and in the end these bank development proposals are sent to the banks' offices. The structure and content of the thesis were logically determined according to the research needs.

The structure of the doctoral thesis, on the 7 chapters, is presented in Figure 1. In the last part of the thesis are presented the 3 annexes. This doctoral thesis starts from the presentation of the banking system, the adjacent elements, the information technology, the products and services, the customer segment, and is continued with the market research. Following market research, a set of criteria and subscriptions are being systematized that are evaluated to outline the development strategy. Finally, microeconomic research is being carried out to validate and present practically the concepts addressed.

Chapter 1 includes the presentation of the banking system. This chapter presents the evolution of the banking system and its structure. At the same time, the characteristics of the banking system, the functions of the banks and their role are identified. In the second part of this chapter the concept of corporate social responsibility is assessed. Following the evaluation of this concept and of all commercial banks, an evaluation framework has been developed. The main economic crises and identified causes and implications are presented. At the end of the chapter an analysis of the factors influencing the loyalty of the clients of the banking system is made.

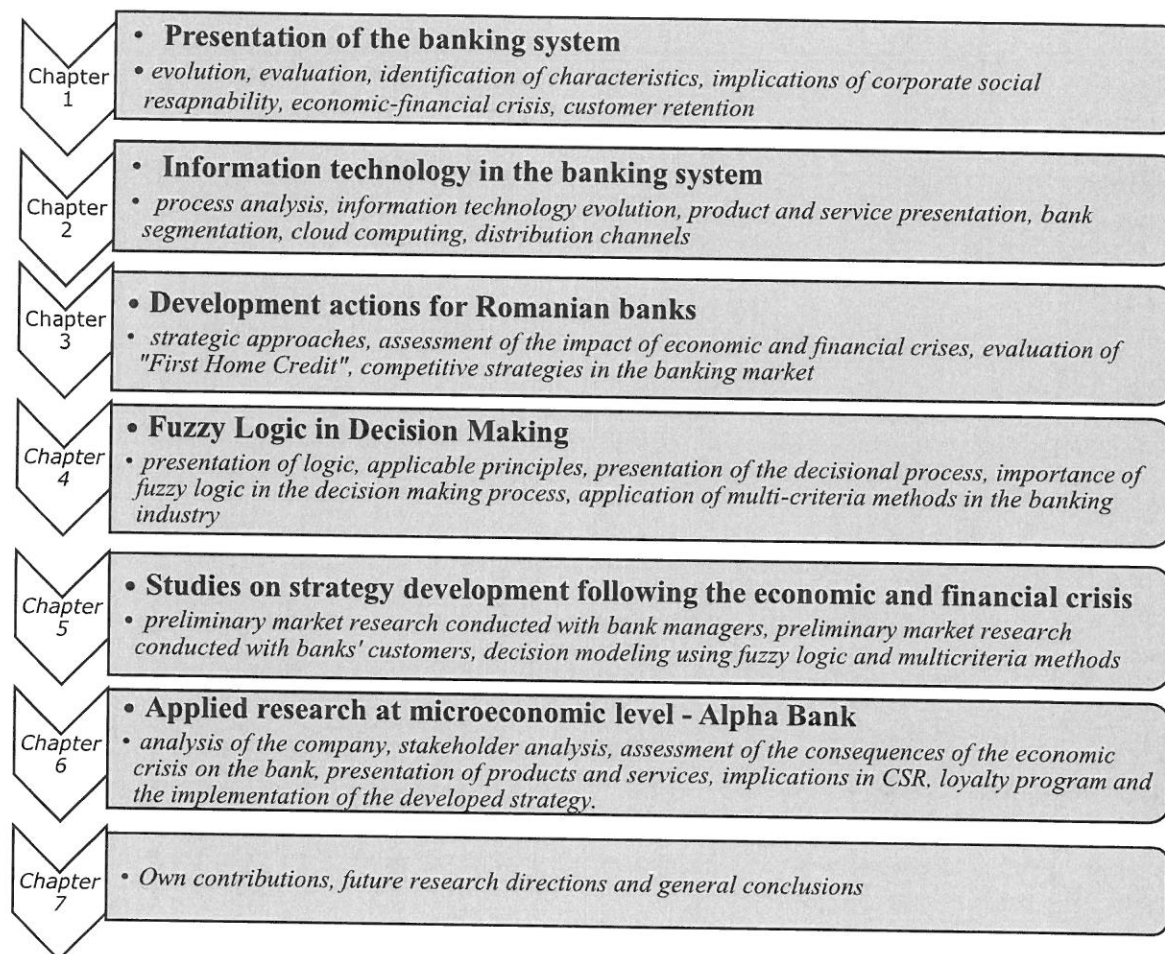


Figure 1. Structure of the doctoral thesis

The banking system has always been considered an important pillar for the functioning of the economy. In the economic systems, banks have a leading role in planning, developing and implementing financial policies. In another vision, this banking system is a structural network of institutions providing financial services in a given environment (Georg, 2013). Another definition of the banking system includes specialized institutions whose main object of activity is the management, organization and realization of loans, and the ultimate goal is to obtain profit (Ryan, O'Toole, & McCann, 2014).

In the early 1970s, competition in the banking system was limited. This was due to the laws adopted by several countries after the financial crisis of 1930. After 1980, financial liberalization, technological change and acceptance of risks contributed to increased competition in the banking sector (Rus, Pujol, & Mocan, 2016). The evolution of the banking system in Romania has seen a trajectory which has led to its alignment with European requirements, thus contributing to the competitiveness of the Romanian banking industry (Nicolescu & Pirtea, 2013).

Romania's economic situation since 2008 has caused a number of changes in the business environment, with an important role. Changes in the banking system are felt among existing banks' agencies and less in credit institutions. The banking system in Romania comprises 40 credit institutions in the years 2014 and 2015. At the level of the assets of the Romanian banking system, the assets of the institutions with foreign capital increased by 7% in 2014 compared to 2011, when the value of 83% . This situation is recorded against the total assets of the Romanian banking system. As previously shown: Austrian-owned banks hold the

highest market share, accounting for 36.7%, followed by banks with French capital with 13.3% and Greek banks with 12.4%. This is the case if the origin of the shareholders is taken into account.

In the client financing process, the actions to be taken are directed to the analysis of demand and eligibility. At the level of financial instability, businesses are trying to reduce their indebtedness, so demand is shrinking (NBR, 2016). Different types of credit on the market are no longer attractive to customers, so banks need to rethink their development strategy to become competitive. The ability of enterprises to assume potential unfavorable developments in interest rates is low. From the perspective of the network of banking units, financial instability has also been felt in this area. From 2008 to 2013, the number of bank units decreased by 2071, reaching 5304 in 2013, and the number of employees decreased by 14710, reaching 56912 employees in 2015. During this period no bank in Romania went bankrupt, and profitability indicators are at positive levels. NBR had a considerable contribution to maintaining this situation at the level of the banking system in Romania (Morosan, 2011).

The banking system in Romania aligns itself with the international bank structures, adapting itself to the structure and procedures to the international requirements. The way to communicate and perform operations follows the normal course of a bank. These structures have not changed since 2008 since the beginning of financial instability, but have adapted to new technologies that meet the needs and wishes of our customers. Competition in the banking system has intensified in recent years, largely due to globalization, technological processes and economic instability. In this context, the banking system is being fueled by considerable challenges because customers have characteristics, needs and desires in line with the current environment (globalization, technological evolution and economic crisis).

On the other hand, organizational behavior of banks develops a number of characteristics dependent on: bank structure, strategy, management, products and services, technology and financial market history (Ika, Diallo, & Thuillierb, 2012), (Rebai, Naceur Azaiezb , & Amp; Saidanec, 2016). Identifying success factors for the banking system contributes to achieving the goals set and shaping the strategy for developing competitive advantage. Most banks are aware of the fact that the banking future revolves around information technology and have invested considerably in this direction.

Evaluating the directions presented in this chapter, the author presents a series of conclusions:

- Population accessibility and customer satisfaction are affected as a result of the decline in the banking system by lowering the number of units and employees.
- The population's inclination towards online services has led to a decrease in the number of banking units and the development of innovative services based on technological environments.
- Loans to the private sector have not experienced a downward trajectory since 2008.
- Launching credit products contributes to bank development as there is market demand.

The concept of Corporate Social Responsibility (CSR) is an abstract one. There is no uniformity in the proposed definitions in the literature, so there are a number of approaches. This concept has an international valorisation, being present in various research and practical studies. The economic and financial crisis in 2008 also drew attention to the need for CSR in the banking sector. The banking sector responded relatively late to the challenges of CSR. He first considered environmental issues, then social issues (Viganò & Nicolai, 2009). CSR, as an instrument of the business sector, serves to increase and legitimate the economic performance of the sector and appears as a systematization of the fundamental principles of business ethics (Scholtens, 2006). The PhD thesis presents a complex assessment of this concept on the 25 selected banks in Romania for analysis.

From the perspective of customer loyalty, one can conclude that reputation, quality, trust

are factors that positively influence customers. For this determination, the author used the questionnaire-based survey and compares the results with the international banking industry. At the same time, the author finds that there is a strong, positive and significant correlation between all three factors related to customer loyalty. On the other hand, a high percentage of respondents believed in the quality of local banks' services to the detriment of foreign banks. The results of this chapter support accepted expectations and assumptions.

Chapter 2 includes concepts of information technology in the banking system. An analysis of processes in the banking system is carried out and its technological evolution is presented. Also, an inventory of banking products and services addressed to individuals and businesses is carried out. The e-banking products are presented as they represent a pillar in the development of the strategy. Because market segmentation is an important element for launching a product, this concept is addressed in the second part of the chapter. The chapter ends with the presentation and evaluation of distribution channels in the banking system. The technology presents its rapid evolution in all areas of activity. Lately, the banking industry has integrated technology into all its processes. Innovative technology is used in the banking industry in all products sold and developed, so it has become an integrating element. This subchapter answers the question: How can change / improve the banking system technology?

To highlight the role of technology in the banking system, the author analyzes and presents the evolution of the banking system in Romania, and then examines the various innovative instruments that have been used lately in banking institutions (Mocan & Rus, 2015).

In the early 1970s, competition and resources were limited in the banking industry. The lack of competition was due to the regulations adopted by several countries since the financial crisis of 1930. At that time, the authorities considered that the risks assumed by banks, in a context of intense competition, led to financial instability. Therefore, an important issue for supervisors and regulators is the relationship between competition and financial stability, a relationship that also characterizes the state of the current economy.

The evolution of Web, data and server related information technology has led to Cloud Computing technology (Bose, Luo, & Liu, 2013). This technology is used in institutions and organizations in various fields of activity (Esteban-Sanchez, Cuesta-Gonzalez, & Paredes-Gazquez, 2017). In the banking system one of the most used services is Internet banking. Using Internet banking as a cloud service is no longer a novelty for the Romanian banking system. Cloud computing provides the three types of services: SaaS, PaaS, and IaaS. Internet Banking represents SaaS for bank customers through which it performs various operations: making payments, viewing information, depositing deposits and other operations. The current state of use of this technology is based on the analysis of the performance and the number of competing users on the websites of some banks in Romania.

According to the NBR, the most widespread e-banking systems are Internet Banking, home banking and mobile banking. All banks in Romania have these services. These systems are supported by the speed of the Internet in Romania, which is positioned in the ranking of the whole world.

The banking system has a range of products and services that meet customer needs and wishes (BNR, 2018). The benefits of e-banking are offered to customers, banks and other companies (Bose, Luo, & Liu, 2013). Customers are positively affected by the accessibility, speed and operability of these services (fast transactions, checking 24/24 hours, 7 days a week, queries and other operations). E-banking offers banks the operability required to record operations 24 hours, 7 days a week. E-banking offers other companies the availability of real-time operations plus value in their 24 hours, 7 days a week service activities. Internet banking, as a cloud service, offers a number of competitive advantages to the banking system and contributes to the development of a favorable image among consumers.

The PhD thesis also presents marketing research in this chapter. The division of the

banking market into segments is one of the main actions of developing and applying the concepts of modern marketing. Banking segmentation concepts have emerged when the increase in customer numbers has resulted in increased trading volumes, and now large-scale transactions are needed. For bids to be successful, market segmentation plays an important role. The principles applied in market segmentation vary according to the type of business and the objectives on which it concentrates. Kotler argued that a market sharing technique reveals strategic and profit opportunities for new competitors to challenge market leaders in the system (Kotler & Armstrong, 2013).

These segmentation activities are essential and can not be overlooked. It is difficult for a bank to develop a strategy and deal with this huge number of people or organizations. Thus, the need for market segmentation in sub-markets (sectors or segments) has emerged. Channels are vehicles / tools through which customers can interact with a bank. These channels can be used for either sales or service interactions (Sanli & Hobikoglu, 2015). There are several types of channels for distribution of banking products and services.

The banking sector is present in all countries. It affects and influences the activities of all countries and is subordinated to a number of decision-makers, especially governmental and economic. Banks operate and provide services based on specific laws. Besides, a number of external factors influence the banking sector's activity. Technology, for example, changes how consumers react to the market offer. It can be noticed that banks' products and services are becoming more and more innovative. Mobile phones scan the checks. Debit and credit cards have changed, now they have chips. Moreover, it has gone from touching the Point-of-Sale (POS) card to the payment made to retailers with the mobile phone. These transactions take place without the intervention of the bank at the time of purchase. IT integration has also reduced the individual pollution footprint. This approach is seen to be tangential to sustainable development. The Banking Network is an important factor in product distribution. Customers are attracted to the cross channel. This channel offers customers the ability to purchase banking products and services while using a mix of existing channels. It is noticed that the actions of the banks are advanced and develop regularly, but the activity is affected by the instability of economic, political factors and not only. All this technological, attractiveness and customer attractiveness identified in the banking sector was affected by the financial instability from 2007-2008.

Chapter 3 includes elements of strategic development. In the first part of the chapter are presented general concepts followed by the presentation of strategies that contribute to the development of competitive advantages. A situation of products and services is presented in this period of economic instability based on statistical data. Finally, the "First House Loan" product is assessed and presented, which is considered an important pillar in the stability of the Romanian banking market.

A strategy is a long-term action plan designed to achieve a goal, most often "winner" (Gitonga, 2015). The strategy is differentiated by tactics or immediate actions with resources at hand. The strategy is a deliberate search for an action plan that will develop a competitive advantage for the business and differentiate it. The differences between a firm and its competitors are the basis of competitive advantage. If a firm is in business and self-sustaining, it already has a certain advantage, no matter how small or subtle (Pitt & Clarke, 2008).

This chapter also addresses the effects, consequences and implications of the economic and financial crisis. The economic crisis is defined in (Guleva & Dukhanov, 2015) as the fragility of economic systems that can lead to a series of actions that negatively affect the quality of life and can cause panic in various activities. A series of documents are dedicated to investigating the reasons / factors of instability and are trying to find a way to optimize policy systems (Guleva & Dukhanov, 2015), (Trabelsi, 2015).

Current assessments show that the banking sector from the perspective of the presence

of foreign banks has become somewhat less global but not fragmented. Rather, reflecting the concentrated crisis in many advanced countries and the growing role of emerging markets and developing countries in the global economy as a whole, the world banking system has undergone some major transformations with a greater variety of players.

In this chapter were presented the main strategic concepts. Developing a strategy implies setting a common goal agreed by stakeholders. Developing a competitive strategy means identifying the right position the bank is facing: expansion, collapse, maintenance or investment. In developing this strategy, internal and external factors should be considered. Economic and financial instability must be considered. That is why this chapter evaluates the effects of the economic crisis.

The development of banks must take into account the products and the situation existing on the national market. To this end, within this subchapter, there are presented a series of developments and statistics of banking products and services. It can be seen that many consumers spend and save money with available and online applications. For the vast majority of transactions made daily, customers no longer have to visit the bank. Shortening the transaction circuit contributes to reducing paper consumption, car gas and time. In this manner, there is an increase in attractiveness in this sector.

Last but not least, the "First Home Loan" product is assessed because it was the product that, following the economic and financial crisis, managed to help maintain the banking system and attract customers. It was a state-guaranteed product in which customers had full confidence. Thus, success has been guaranteed. Customers have purchased this product, and banks have remained in an unstable economic environment.

Chapter 4 presents the elements of applying fuzzy logic in decision making. Because the economic environment is dynamic and unstable, the existence of vague or incomplete data defines this area. From this perspective, fuzzy numbers have been used to develop banks' strategy. In the second part of this chapter are presented the concepts of the decisional process, the importance of fuzzy logic in the banking system and the application of fuzzy AHP and TOPSIS in the banks around the world.

Evaluating and managing uncertainty is an intrinsically important issue in designing expert systems, as much of the information in the knowledge base of a typical expert system is inaccurate, incomplete or not fully defined. In existing expert systems, uncertainty is treated by a combination of logic and probability-based methods. An impediment to these methods lies in the fact that decisions are made on the basis of unclear information in the knowledge base and are therefore largely ad hoc. An alternative approach to uncertainty management is based on the use of fuzzy logic, which is the logic behind the approximation, or equivalent, the fuzzy reasoning.

A feature of fuzzy logic, which is especially important for managing uncertainty in expert systems, is that it provides a systematic framework for dealing with fuzzy quantifiers. In this way, fuzzy logic encompasses predicate logic and probability theory and makes it possible to address different types of uncertainties within a unique conceptual framework. In fuzzy logic, deducting a conclusion from a set of premises is generally summed up to solving a nonlinear program by applying projection and expansion principles. This deduction approach leads to different basic directions that can be used as evidence-based rules in expert systems.

Applying fuzzy logic in decision-making is supported by the following arguments:

- It is intuitive and integrates math concepts that are easy to understand
- Presents an accepted degree of flexibility
- Can easily use the expertise of the industry
- This approach can be combined with other conventional control techniques
- It is based on natural language and simulates the process of normal human reasoning
- Shows a degree of naturalness in building the target model

- Easy to understand - involves imagination
- Provides a degree of flexibility
- Reduces the investigation time of the target system
- Contributes to achieving a solution in line with current needs
- Does not involve significant hardware resources
- Manipulates and investigates control or decision-making issues that are not easy to define using mathematical models
- Can control machines, products, processes and services
- Provides reasonable judgments
- Fuzzy logic helps to solve uncertainty in engineering and management.

An evaluation of the literature suggests that the number of publications using MCDM and fuzzy methods is increasing from one year to the next.

In today's competitive economic environment, an adequate assessment of companies' performance is very important not only for the organization but also for its creditors and investors. Assessment is one of the most important tools for identifying strengths and weaknesses in the internal market and for identifying external opportunities and threats and identifying positions with other companies (Rebai, Azaiez & Saidane, 2016). These assessments can be used to identify opportunities and keep banks in business. AHP and FAHP methods are used in practical approaches to weighting criteria and subscriptions (Wang & Xia, 2009).

Among the methods developed to solve multi-criteria issues, the fuzzy AHP method has been widely applied in recent research to solve various problems.

Banks play an important role in economic progress and country development. In recent years, banks have seen numerous market improvements: liberalization, globalization and various innovations, each of these developments affecting the competitive conditions of banks. An important role contributing to banks' profitability is competitive behavior that also affects the precision and stability of the financial sector. Competition and market structures play an important role in social well-being and society.

Given the number of banks as well as technological advances, evaluating the performance of these organizations and developing strategies become necessary actions to get out of the economic and financial crisis. At the same time, these actions contribute to launching competitive products and leading to the achievement of banks' goals.

Chapter 5 includes **studies on strategy development following the economic and financial crisis**. This chapter is structured on three major parts. The first part presents the results obtained from the market research carried out at the level of the managers of the banks. The obtained data are presented and evaluated, based on which criteria and subcriteria used in fuzzy modeling are defined. In the second part of this chapter are presented the results obtained from the market research carried out at the level of the clients located in the Western region of Romania. These results are used to define the sub-criteria considered in strategy development. Finally, the third part includes fuzzy AHP and TOPSIS fuzzy modeling to select the strategic alternative that contributes to the goal of attracting new customers. At the end of the chapter, the proposed strategy is validated with the help of banking experts.

This chapter is divided into three main directions: the presentation and evaluation of the study conducted with the managers of the banks of the West Region, a market study conducted with the clients of the banks in the West region and the study on the modeling of a selection decision based on the research realized. The whole solution is validated by Western managers, so the end of the chapter presents the final strategic framework for bank development.

The results obtained from the application of the questionnaire to the 50 managers from the Romanian banks are some expected and expected. These results were reinforced by solid arguments obtained during the face-to-face questionnaire. Following the study, we can

conclude that:

- Managers know the importance of strategic planning taking part in strategic management in real terms
- There is a very high degree of appreciation for the importance of strategic planning
- Banks in Romania use updated tools for strategic planning
- Employees know goals and banking vision and are supported in the ideas they share
- The development process can be improved and reassessed as the hiring flow is continuous as a result of registered resignations
- There is a high level of competition in the banking system
- This competition tends to decline over the next 3-5 years
- Banking competitiveness leads to the use of new technologies, the use of marketing and the strengthening of security and safety
- CSR activities are considered important and contribute to improving the image of the bank
- Strategies and activities need to be developed on the basis of a number of factors, which integrate and engage, lead to positive financial results.

The results obtained from the application of the questionnaire to the 350 clients from the Romanian banks are some expected and expected due to the research of the automotive industry. Following the investigation, the following can be concluded:

- All customers use bank products. Customers have a diverse range of banking products, focusing on technological advances. Uses ATMs to withdraw cash and make a series of transactions. Electronic banking is among the preferences of customers.
- Most customers use the purchased products several times a week.
- Customers prefer banks according to facilities and technological advances.
- Customers appreciate recommendations from friends and CSR actions. CSR actions strengthen the bank's position and contribute to its competitiveness.
- Distribution channel customers' preferences cover a wide beach and offer the opportunity to use the favorable channel. ATMs and self-banking units are among the preferences of customers.
- Employees of banks are considered as important pillars in the communication process. Professionalism, communication and courtesy fit into customer preferences.
- Among the administrative factors, the reputation, the correct information of the clients and the endowments of the bank are considered important.
- Innovative products and product diversity are among the wishes of customers.
- Security and safety are very important to customers. At the same time, efficiency and effectiveness are IT criteria considered important by customers.
- Accessibility of e-banking is very important for customers. This is supported by technological advances.
- Customers appreciate product performance and website interface. The website must provide as much useful, accessible and user-friendly information as possible.
- Banking service costs are very important to customers. At the same time, these costs are wished to be known from the start of the contract.
- Customers have a high degree of confidence in e-banking products. Safety and security for these types of products are mandatory criteria.
- Safety is very important to customers and helps increase customer loyalty.
- Service comfort, serviceability and ease of use are aspects of Internet banking appreciated by customers.
- Product taxes are very important to all customers.
- The confidence given to banks is influenced by the way of communicating and presenting the contractual conditions.

- Financial support, product accessibility, self service areas and employee availability are among the preferred customer's criteria for the benefits.
- Quality issues are one of the drawbacks that customers have. Customers assume a minimum risk level for purchased products.
- Banking bureaucracy is a major disadvantage for customers. Also, the time needed for the purchase of products / services is very important for the respondents.
- High transaction costs are very important for 94% of respondents and considered to be defining in the contractual relationship.
- The banks 'bankruptcy risk is considered to be a very important one for banks' customers.

The AHP method uses precise values (called crisp values) and proposes a decision-making hierarchy of factors and contributes to the measurement of indicators according to the bank's established objectives. Because the AHP method uses precise data and fails to minimize subjective judgment, the AHP fuzzy method has been developed to minimize this deficiency.

The analytical hierarchy process is used as an effective tool in structuring and modeling multi-criteria issues as it attempts to quantify the judgment and human view that other approaches might ignore. Because this reasoning involves pairing, the preference-to-criterion calculation is based mainly on some quantitative business data, subjective reasoning and decision-making experience (Yuan & Chiu, 2009). Developing development strategies for banks has important outcomes for lenders, investors and stakeholders as it determines banks' ability to compete in this sector and is critical to sector development. The purpose of this chapter is to propose a strategic framework for bank development after the economic and financial crisis based on multi-criteria fuzzy modeling.

Following Fuzzy AHP application for hierarchy of criteria and subcriteria, fuzzy TOPSIS was applied to select the winning alternative. The proposed alternative for implementation in the banking system is *"Reducing bureaucracy, developing innovative products and increasing the competitiveness of the robot network"*.

Based on the results obtained previously, the classification of the criteria and subcriteria - by applying the fuzzy AHP and the classification of the alternatives by the application of fuzzy TOPSIS, an implementation plan for the selected alternative can be systematized. In this respect, these rankings are considered and the universal implementation of the proposed alternative is presented. The implementation of this alternative must go through the following general steps:

1. *Reorganize the internal process to reduce bureaucracy*
2. *Connect the banking system to national databases in order to increase competitiveness and operability*
3. *Develop a remuneration plan for employees based on performance at work*
4. *Market research permanently for upgrading and launching innovative credit and e-banking products*
5. *Increase product security and customer information*
6. *Increasing the degree of customer independence by expanding the robot network*
7. *Increase security for robots*
8. *Development of a real-time monitoring system of distribution channel indicators.*

The validation of the proposed strategic framework was achieved by holding a brainstorming meeting with 5 managers from the banks of the Western Region of Romania. The proposed framework was assessed in accordance with the market share of the assessed banks. Market share and assets are available for year 2016 according to NBR data (BNR, 2018). Depending on the market share, four categories of banks have been developed that adapt the proposed strategic framework to certain financial factors (market share, assets) of banks.

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Chapter 6 is based on applied research conducted at microeconomic level. This research evaluates one of the existing banks in Romania. All the above concepts are presented and addressed in this case study. In order to outline the bank's capacity, an analysis of internal and external factors is carried out. Also presented are the products and services of the assessed bank, as well as the implications in corporate social responsibility. At the end of the applied research, the proposed general strategic framework is simulated and the activities related to the implementation of the strategy are presented.

Within this chapter is presented a research conducted at microeconomic level. All the developed concepts and models are evaluated in this case study, and the proposed strategy is validated at the end of the chapter.

The chapter presents a description of the bank and performs a SWOT analysis to identify the key defining factors of the bank. For the SWOT analysis the model "8 forces in the market" was used. In order to identify stakeholder interests, an analysis has been made of them. The periods of economic and financial crisis are presented.

Banks' bank maps and bank implications in corporate social responsibility are presented. The chapter ends with the presentation of the framework for the implementation of the proposed Alpha Bank strategy in the Western region of Romania. The following are presented: vision, mission, strategic objectives and priority strategy for bank development as a result of economic instability.

Chapter 7 includes own contributions in theoretical and practical terms. At the end of this chapter, future research directions are presented. The chapter concludes with general conclusions.

Chapter 8 includes the three annexes used in the research.

The original contributions related to the research plan on the **bibliographic reference** are:

- Evaluation of the Romanian banking system and its structure
- Using statistical series to characterize and present the situation of the banking system in Romania
- Analyzing definitions of corporate social responsibility
- Analysis of factors influencing customer loyalty
- Structured analysis of some marketing concepts related to banking strategy development
- Evaluation of the types of competitive strategies in the Romanian banking market
- Presenting the concepts and importance of fuzzy logic in the organizational decision system
- Presentation and evaluation of Multi-Criteria Decision Taxonomy (MCDM).

In the **theoretical research** plan the following original contributions are made:

- Assessing the implications of the economic and financial crisis
- Assessing the effects of the economic and financial crisis on the banking system
- Assessment of bank functions and their role in the economy
- Developing a conceptual approach that integrates the benefits of cloud computing
- Evaluating the benefits of e-banking products for banks and customers
- Identifying the main directions pursued by banks in CSR activities by assessing banks and their implications based on data on websites owned
- Evaluating the benefits of using cloud computing in bank development
- Assessing the implications of applying AHP and TOPSIS to the banking system
- Identifying the advantages and disadvantages of MADM methods and presenting the theoretical implications

- Evaluation of the specialized literature from the perspective of the MCDM methods used in recent years and the use of fuzzy logic in the banking system.

In the field of practical research the following results are achieved:

- Modeling the simplified structure of the functionality of the Romanian banking system
- Develop a framework for assessing the implications of corporate social responsibility
- Achievement of the benefits map inside and outside the banks as a result of CSR activities
- Develop a framework that helps retention of bank customers
- Evaluating the performance of e-banking services using the Blazemeter platform
- Presentation of the simplified process structure in the banking system using cloud computing services
- Evaluation of products on the banking market using the data available in the databases of the National Institute of Statistics and those of the National Bank of Romania
- Evaluation of the "First Home Credit" product, which was an important pillar on the banking market in the immediate period of the economic and financial crisis
- Developing a questionnaire dedicated to managers or bank directors to study and identify the most important criteria for developing a strategy following the financial crisis for banks in the Western Region of Romania.
- Applying the questionnaire to managers or executives on a sample of 45 people
- Developing a questionnaire to study and identify the most important customer considerations when choosing a bank or buying a product
- Applying the customer questionnaire to a sample of 350 people
- The study of the fuzzy logic modeling of the selection decision based on the market research carried out
- Establishing and developing the hierarchical structure considered for systematization of the strategy
- Performing the ranking of selected criteria and subcriteria using the AHP fuzzy multicriteria method
- Strategic alternatives hierarchy using the TOPSIS fuzzy method.
- Development of the strategic framework for the development of banks
- Practical validation with 5 experts of the proposed strategic framework
- Making an applied research at microeconomic level and applying all proposed approaches and developed strategy.

Publications: This doctoral thesis is supported by the **13 scientific papers** published in the country and abroad. Of these papers, **12 are Thomson Reuters indexed (Clarivate Analytics)**, and **1 scientific paper is being indexed by Thomson Reuters (Clarivate Analytics)**. During the doctoral research, the author was **Project Manager (PN-III-P1-1.1-MC-2017-0715)**, having the opportunity to travel to Shanghai, China to finalize his research. At the same time, he was a member of the project "*Diagnostic Analysis of MCA Invest Industrial SRL and elaboration of company development strategy*" whose director was Prof.ing.dr.ec. Marian MOCAN.

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