

## Credit risk management by commercial banks in Algeria: Field survey of banks in the municipality BEJAIA

إدارة مخاطر الائتمان من قبل البنوك التجارية في الجزائر: مسح ميداني للبنوك في بلدية بجاية

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Received: 29/08/2020

Accepted: 26/10/2020

Published: 15/1/2021

### Abstract:

The main objective of this article is to identify the different methods of credit risk management used by commercial banks in Algeria, through a qualitative study, based on a field survey. Thus, we designed and distributed a questionnaire of 47 questions to all the banks located in the city of Bejaia. The processing of the data collected was carried out by the SPHINX IQ2 software. The results of our study show that the classic method of credit risk management, based on financial analysis, is no longer the only method used by banks to control these risks. The second method, scoring, is based on its own methods of statistical analysis. But, the safest and most reliable method remains that which is based on the requirements of credible and solid guarantees.

**Keywords:** Bank; credit; risk; credit management; financial analysis.

**Jel Classification Codes:** G310, G320, G330.

### ملخص

الهدف الرئيسي من هذه المقالة هو التعرف على الأساليب المختلفة لإدارة مخاطر الائتمان التي تستخدمها البنوك التجارية في الجزائر، من خلال دراسة نوعية، بناء على مسح ميداني. وهكذا ، قمنا بتصميم وتوزيع استبيان من 47 سؤالاً على جميع البنوك الموجودة في مدينة بجاية. تم معالجة البيانات التي تم جمعها بواسطة برنامج « سفانكس أكيو ». تظهر نتائج دراستنا أن الطريقة الكلاسيكية لإدارة مخاطر الائتمان ، بناءً على التحليل المالي ، لم تعد الطريقة الوحيدة التي تستخدمها البنوك من أجل اختبار الوضع المالي للمقترض وبالتالي السيطرة على المخاطر. الطريقة الثانية، التسجيل، تعتمد على أساليب التحليل الإحصائي الخاصة بها. ولكن تظل الطريقة الأكثر أماناً والأكثر موثوقية هي تلك القائمة على متطلبات ضمانات موثوقة ومتينة.

**كلمات مفتاحية:** البنك ، الائتمان ، المخاطر ، إدارة الائتمان ، التحليل المالي

**تصنيف JEL :** G310, G320, G330

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## **1. INTRODUCTION:**

The banking sector has always been considered as a closed, obscure and complex universe (DESMITCH F, 2004, p. 32), despite its important and decisive role in financing the economy. Thus, the banking environment has become very unstable and impenetrable in the face of various disturbances in the monetary sphere (Patat, J, P. 2002, p.45), which can affect banking activity through a variety of risks and thus threaten its position on the financial market. And among the different risks that banks are confronted with are: market risk, credit risk, liquidity risk, as well as operational risk. Of all these risks, the one that will interest us in this research work will be the credit risk, also known as the counterparty risk.

Thus, the maintenance of banking activity is of particular importance because it largely conditions the economic life of a country (PRUCHAUD J, 1960, p.51). It is in this sense that the work of the Basel Committee is in line with the objectives of setting up regulatory constraints aimed at preserving the financial stability of the banking system and limiting credit risks in order to protect depositors, through the introduction in 1988 of the Cooke ratio as a regulatory capital adequacy ratio. As a result, whatever the risk incurred, it must be possible to identify and assess it. And as far as credit risk is concerned, a good evaluation will be a decisive factor in the choice of the counterparty (BERNARD V; COLLI J.C, 1996p.18). New measurement and management instruments are constantly being developed. Especially in the new financial environment, risk control is becoming a central issue. International regulatory bodies have understood the need to ensure and strengthen the stability and reliability of the banking and financial system.

It is in the context of credit risk management, which is becoming a pressing imperative, that the emergence of new management and measurement methods may offer major advantages in strengthening banks' competence in this area.

In Algeria, following the liberalisation of the banking sector, Algerian banks are called upon to become aware of the importance of the analysis and management of credit risk, because the failure of a credit institution would be harmful not only for its creditors, but also for the entire economy. Indeed, the enactment of the Law on Currency and Credit (LMC) in 1990 led to the emergence of new banks with national or foreign private capital, and thus to an increase in the number of banks operating in the financial centre. This led to the emergence of counterparty risks. Moreover, Algerian banks must, henceforth, maintain relations with foreign partners which, in some cases, imply commitments

with these banks (BOUYACOUB F, 2000, p.25), hence the need for them to adopt a strategy for monitoring and managing the risks generated by this evolution. Thus, in order to limit these credit risks, banks must set up a rigorous procedure (ROYER G; CHOINEL A, 1995, p.255) to study credit applications, based increasingly on knowledge of the customer, taking guarantees and identifying all risks.

To carry out this work, we carried out a field survey at the level of the banks in the municipality of Bejaia, and the main objective of our investigations is to study the different risks linked to the credits that the banks have to make on a daily basis, as well as the guarantees provided and methods of managing these risks so that its main function, which is the financing of the economy, continues on the one hand, and minimises the risks of non-repayment and insolvency of the borrowers on the other hand.

Thus, the main objective of this article is to answer the following question: How do commercial banks in Algeria, particularly those in the city of Bejaia, manage the credit risks they face on a daily basis? ».

It is in this same context that we propose the following hypotheses:

- ✓ Prudential regulation is an effective tool in the evaluation and management of bank credit risk;
- ✓ Financial analysis is a direct indicator of credit risk measurement;
- ✓ Requirement of guarantees may be the most reliable and effective method for avoiding and managing credit risks.

In order to answer this question, we have divided our work into two main sections:

- ✓ The first section will present our working methodology and will outline the main steps of our field survey of banks in the municipality of Bejaia;
- ✓ The second section is dedicated to the study, analysis and interpretation of the results of the questionnaires distributed and collected at the level of the banks;
- ✓ Finally, in our conclusion, we will propose some recommendations that could better help the banks to reduce credit risks.

## **2. Presentation of the different stages of our field study**

Given that this subject, credit risk management, has already been the subject of several studies, we wanted to bring another type of tools and methodology, which led us to a field survey via a questionnaire addressed to bank branch managers who could explain how to manage this problem on the one hand, and to be able to compare the answers, management method and results on the other hand, and this is what makes this article original; the distribution of the questionnaires and the collection of answers took almost two months (from 15/10/2019 to 10/12/2019).

Therefore, our study was carried out according to the following steps:

- **The first step** is to fully define the problem areas of our work, already outlined in the introduction. Therefore, it is essentially a question of studying how the commercial banks in Algeria, particularly those of the city of Bejaia, manage the credit risks they face on a daily basis. And in order to make the most of the answers and results of the study, it is essential to collect the necessary data, which will enable us to design a suitable tool and methodology likely to reach them.
- **The second step** consists of adopting a survey carried out on a part of the population known as a sample. Thus, our sample is composed of all the banks, private, public and foreign in the municipality of Bejaia.
- **The third step** is to define the methodology and the tools to be put in place to begin our study. In our case, we turned to the two-stage field survey method. The first consists of interviews between two parties (the interviewee and the interviewer), while the second is carried out by means of a questionnaire that includes questions of a qualitative and quantitative nature (Salès-Wuillemin E, 2006, p.45).
- **The fourth stage** consists of drawing up the questionnaire which must answer the questions we asked ourselves about our initial problem. Therefore, the objective of this questionnaire is to collect the maximum of information which will be used as a support for our research to record and process the answers collected on the sphinx software.
- The fifth phase consists of collecting as much information as possible which will be used as a support for our research to record and process the answers collected on the Sphinx IQ2 software.
- The sixth and final stage consists of counting and analysing the data collected from the questionnaire using the sphinx software, which enabled us to compile tables and graphs of all the responses and thus arrive at significant results.

#### ❖ **Difficulties encountered during the survey**

Through the two questionnaires, we targeted all the bank branches in the city of Bejaia. We were able to obtain answers from the majority of the bank branches, except for a few questions for various reasons: obvious answers, confidential information, etc.... However, we had difficulties in collecting answers from some branches who were unable to answer questionnaires, either by e-mail or by post, or during personal interviews where the managers were not always available to receive us.

### **3. Analysis and interpretation of results**

In this section we will deal with the various responses collected from bank branches, which will enable us to understand and analyse more closely the risks

that banks face on a permanent basis, on the one hand, and their management by professionals in the trade, on the other. Thus, this survey was carried out at bank branches in the Bejaia municipality. The choice of this commune is justified by the diversification of the banking network established in this region; we distributed a questionnaire, consisting of 47 questions, per bank. The sample surveyed is composed of fifteen (15) bank branches, and those who responded to our questionnaire are, in majority, branch managers, department heads, and customer service officers. Their answers and explanations have sufficiently enlightened us on the subject.

### **3.1 Characteristics of banks**

#### **➤ The status of banks**

Table n° 01 indicates that there are 15 banks surveyed, but only twelve (12) had conclusive answers; nine (09) are public banks and three (03) private banks.

**Table n° 01: The status of the bank**

Bank		
	Nb	% cit.
<b>Private</b>	<b>03</b>	<b>25%</b>
<b>Public</b>	<b>09</b>	<b>75%</b>
<b>Total</b>	<b>12</b>	<b>100,0%</b>

**Source:** Prepared by the author based on survey results

#### **➤ The distribution of bank branches in the Bejaia municipality**

The distribution of our sample, at the level of the municipality of Bejaia, is illustrated in the following table n° 02. Thus, our sample is composed of nine (9) public banks (BADR, BNA, and CPA with 16.7% each, CNEP, BEA and BDL, i.e. 08.3% each) and three (3) private banks with the same percentage 08.3% for each of the banks (General Society, NATIXIS and AGB representing). This result is justified by the fact that some banks have only one branch in the commune, or that some branches refused to answer us.

**Table n°02: The distribution of our sample**

	Nb	% cit.
Bank for Agriculture and Rural Development (BADR)	2	16,7%
National Bank of Algeria (BNA)	2	16,7%
Popular Credit of Algeria (CPA)	2	16,7%
Local Development Bank (BDL)	1	08,3%
External Bank of Algeria (BEA)	1	08,3%
Gulf Bank Algeria (AGB)	1	08,3%
Natixis Algeria Bejaia	1	08,3%
General Societv (SG)	1	08,3%
National Savings and Provident Fund (CNEP)	1	08,3%

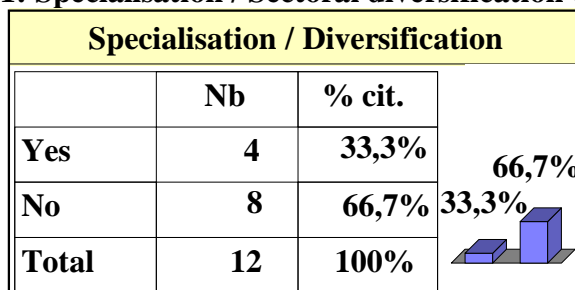
**Source:** Prepared by the author based on survey results

➤ **Specialisation / Sectoral diversification of banks**

Figure n°01 presents an overview of the nature of specialisation/sectoral diversification of the banks in our sample. It can thus be seen that eight (8) banks out of twelve (12), i.e. 66.7% say they have no main or secondary activity, which means that these banks are universal and mostly private banks which have a global vision based on a strategy of support and loyalty building for the different categories of economic agents.

On the other hand, the banks that have specialised in a main and secondary sector of activity are generally public banks, with four (4) banks out of twelve (12) in our sample, which represents a percentage of 33.3%. This can be explained by the commitment of the political authorities to put in place and implement the necessary means for the local and national development of the Algerian economy.

**Figure n°01: Specialisation / Sectoral diversification of banks**



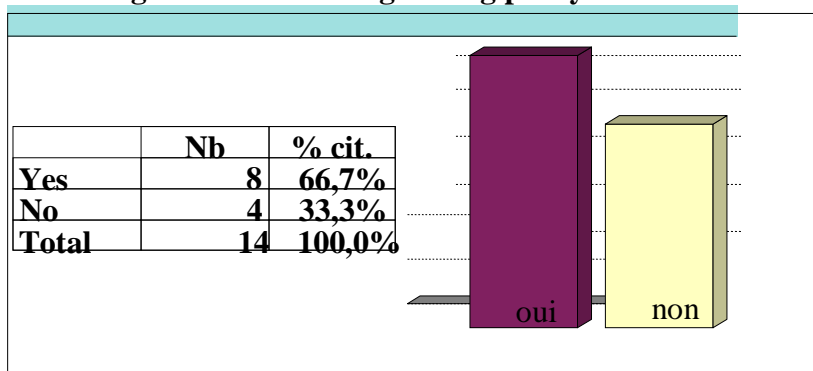
**Source:** Prepared by the author based on survey results

### 3.2 Inventory of banking risks

#### ➤ Credit granting policy

This point will enable us to know the different risks, their nature and degree, which the different banks in our sample face. Thus, the figure below shows the credit policy chosen and applied by the banks in the municipality of Bejaia:

**Figure n°02: Credit granting policy**



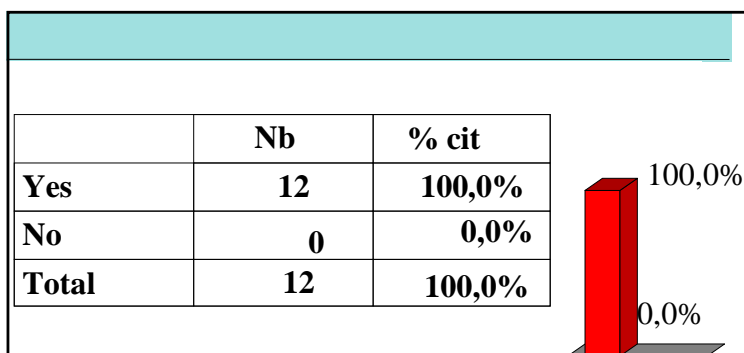
**Source:** Prepared by the author based on survey results

Eight (08) banks out of twelve (12) answered "Yes" to the question concerning the determination of the credit granting policy, against six (6) banks who find that this policy is linked to a customer loyalty strategy given the competition they face from public banks, in general.

#### ➤ Analysis of the client's financial situation

According to Figure 3, all the banks make their analyses based on the recent financial situations of their clients. That is to say that all banks take this criterion very seriously when studying credit files in order to identify and avoid as many risks as possible.

**Figure n°03: Identification of risks**



**Source:** Prepared by the author based on survey results

➤ **Reason for Acceptance/Refusal of credits**

Once the risks have been identified, the decision to approve or reject the loan may take effect, and the reasons for accepting or rejecting the loans requested are summarised in the following table:

**Table n° 03: Reason for Acceptance/Refusal after examination of the file**

Denomination	Reason for Acceptance/Refusal
<b>Gulf Bank Algeria</b>	Risk of solvency of the customer and risk of default.
<b>NATIXIS Algeria</b>	According to the financial statements (financial health, guarantees, nature of credit).
<b>General Society (SG)</b>	Depending on the client's financial situation and previous results.
<b>Bank for Agriculture and Rural Development (BADR)</b>	Risky activity (significant arrears in the sector); unprofitable activity according to the analysis of the financial statements, absence of all guarantees, low self-financing (no more commitments).
<b>Local Development Bank</b>	Lack of tangible guarantees
<b>National Bank of Algeria</b>	Risk too high; project unprofitable, promoter's over-indebtedness.
<b>Popular Credit of Algeria</b>	Business sector saturated lack of guarantees, low cash flow.
<b>External Bank of Algeria</b>	Lack of guarantees, unreliable accounting records.
<b>National Savings and Provident Fund</b>	Guarantees and unreliable market research, a very large amount of money.

**Source:** Prepared by the author based on survey results

Thus, according to our survey, the reasons on which the banks base their final decision are numerous, but the most recurrent reason is that of guarantees, since the majority of the banks (nine) give it significant weight. The other reasons are related to: the client's solvency risk and its risk of default, the borrower's financial health and sector of activity, the nature of the risk, etc.

➤ **The importance of guarantees**

The importance given to guarantees is illustrated in the table below, where all banks carry out an expert assessment of guarantees, even when they visit the premises to examine them:



**Table n°04: Expert evaluations of guarantees**

Decision	Nb	% cit
Yes	12	100,0%
No	0	0,0%
<b>Total</b>	<b>12</b>	<b>100,0%</b>

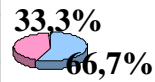
**Source:** Prepared by the author based on survey results

➤ **Nature of risky clients**

The guarantees required by bankers depend on the nature of the applicant, who may present different degrees of risk. Thus, according to the responses collected, eight (8) banks out of twelve (12), i.e. a rate of 66.7%, consider that the highest risk may come from legal entities, while four (4) banks out of twelve (12), i.e. a rate of 33.3%, tend to favour natural persons:

**Figure n°04: Type of clients representing a high risk for banks**

Risk / customer		
	Nb	% Obs
Legal entity	8	66,7%
Physical person	4	33,3%
<b>Total</b>	<b>12</b>	<b>100,0%</b>



**Source:** Prepared by the author based on survey results

➤ **Nature of risky products**

The difference in the degree of risk faced by banks is explained, in part, by the very nature of the products offered by these banks, which may be solicited by the riskiest clients.

The following table summarises most of the riskiest products found in a bank, and it can be seen that there are certain products that present a risk for all banks, such as: overdraft, overdraft facility, cash advance, credit by signature, as well as aval; other risks can be real estate loans, financing of poultry farming, cattle breeding, as well as aquaculture, and this is due to the concentration of banks on one sector of activity (see table n°5).

**Table n°05: Nature of the riskiest products**

<b>Bank</b>	<b>Products</b>
<b>Gulf Bank Algeria</b>	Bank overdraft and advance on invoice.
<b>NATIXIS Algeria</b>	Overdrafts, Credit by signature.
<b>General Society</b>	Credit by signature, Cash advance, Overdraft.
<b>Bank for Agriculture and Rural Development</b>	Financing of poultry farming, Cattle breeding + Aquaculture and Fisheries.
<b>Local Development Bank</b>	All credits in general.
<b>National Bank of Algeria</b>	Unsecured cash loans (such as the Overdraft), Signature loans (such as the Downstream).
<b>Popular Credit of Algeria</b>	Uncaused credits, Operating credits, Overdraft.
<b>External Bank of Algeria</b>	Import-related credits, Exchange Rate Risk.
<b>National Savings and Provident Fund</b>	Real Estate Credits.

**Source:** Prepared by the author based on survey results

In general, according to our field survey, the main risks faced by banks are firstly credit risk, which affects eleven (11) banks out of twelve (12), followed by market risk with six (6) banks in our sample, then operational risk with five (5) banks, the country risk with four (4) banks, the liquidity risk with three (3), and finally the exchange rate risk with two (2) banks, bearing in mind that the interest rate risk is not designated as a main risk for all the banks surveyed.

#### **4 Credit risk management methods**

We will first discuss how banks identify and assess credit risks in the first point, and then we will outline the different methods of managing this risk in the second point.

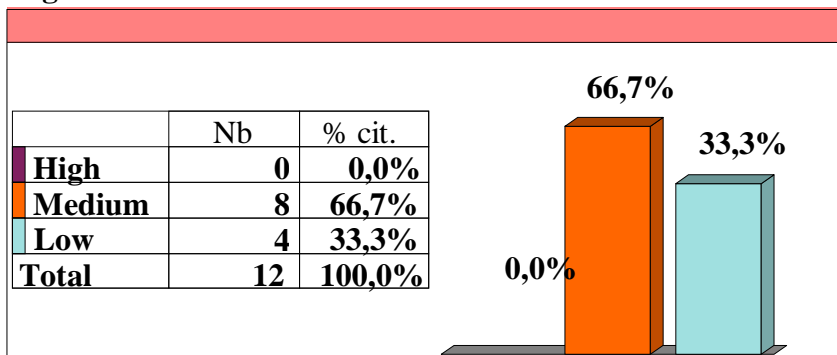
##### **4.1 Identification and assessment of credit risks**

###### **➤ The degree of credit risk**

This point will present us with an inventory of the different methods of credit risk management selected and applied by the banks of the municipality of Bejaia.

As a result, the following figure shows the different levels of credit risk considered or detected according to our study sample:

**Figure n°05: Level of credit risk in the banks**



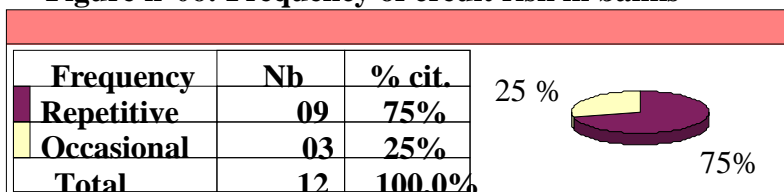
**Source:** Prepared by the author based on survey results

Thus, we note that no bank in our sample reported a high level of credit risk, and that eight banks responded that this level is medium, while the rest of the banks (four) find it low. This is due to the fact that banks are taking more and more account of this type of risk, especially since the fall in oil prices in 215 and the problem of underliquidity in our economy.

➤ **Frequency of risks**

According to figure 6 below, we can see that most banks (71.4%) are repeatedly confronted with this credit risk, while the rest of the banks (28.6%) declare that they are subject to it occasionally.

**Figure n°06: Frequency of credit risk in banks**



**Source:** Prepared by the author based on survey results

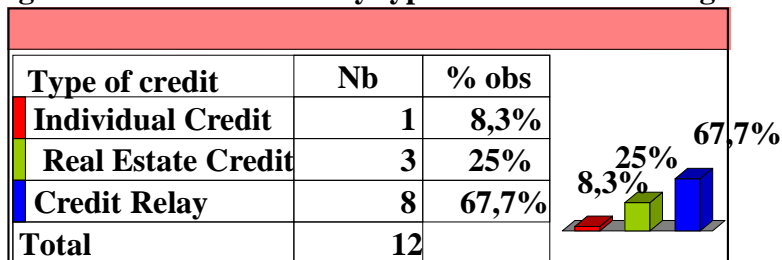
It can be seen that most banks (75%) are repeatedly confronted with this credit risk, while the rest of the banks (25%) declare that they are subject to it occasionally.

➤ **Nature of the least risky credits**

The conditions required for the granting of a credit must be compatible with the type of credit. The type of credit depends on the quality of the borrower and his or

her status. The following figure gives us the least risky and best repayable types of credit according to the answers:

**Figure n°07: The least risky types of credit according to the banks**



**Source:** Prepared by the author based on survey results

➤ **Methods for identifying credit risks**

The use of credit risk management tools implies a perfect knowledge of these risks, which can be obtained through better identification, as the following table shows:

**Tablen°06: Methods for identifying credit risks**

Bank	Methods
<b>Gulf Bank Algeria</b>	Different platforms for filtering and identification
<b>NATIXIS Algeria</b>	Assessment tools for rating companies.
<b>General Society</b>	Risk measurement and identification method, File study.
<b>Bank for Agriculture and Rural Development</b>	Analysis of financial statements, market research, studies and analysis of unpaid debts by sector of activity, the scoring method.
<b>Local Development Bank</b>	Financial analysis.
<b>National Bank of Algeria</b>	Financial analysis, project evaluation.
<b>Popular Credit of Algeria</b>	Central bank bodies, a risk management tool
<b>External Bank of Algeria</b>	Internal Audit.
<b>National Savings and Provident Fund</b>	Economic and financial study of the files.

**Source:** Prepared by the author based on survey results

**4.2 Credit risk management method**

➤ **Evaluation and decision-making**

Capping the amount of credit granted implies a strict evaluation of borrowers' files. According to our survey, 41.7% of this evaluation is based on the general

assessment criteria of the client (loyal, solvent, etc.). The other banks divide the number between an evaluation based on the annual turnover, achieved the previous year and the current year, based on the last three years, or even on a strong monthly turnover + low monthly turnover out of 2. And according to our study, the decision on the repayment term is usually taken by the Credit Committee and few banks negotiate with their customers over the term.

**Figure n°08: Basis of evaluation and decision making for credit files**

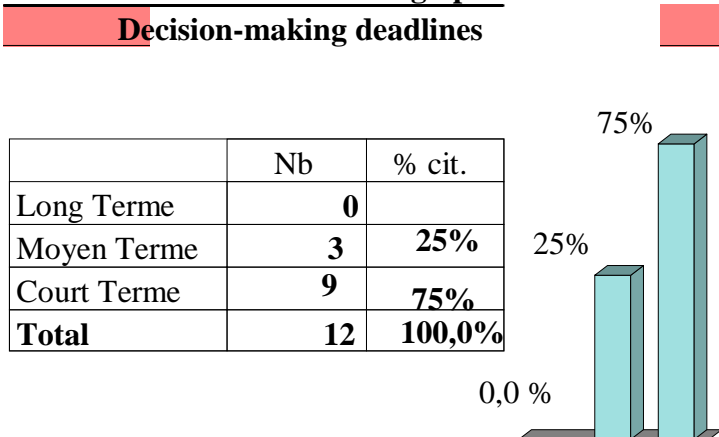
	Nb	% cit.
Annual turnover (AT)	2	16,7%
(AT) previous year and current year	1	8,3%
Based on the last 3 years	2	16,7%
(AT) strong monthly + (AT) weak monthly over 2	2	16,7%
It depends on the case	5	41,7%
<b>Total</b>	<b>12</b>	<b>100,0%</b>

**Source:** Prepared by the author based on survey results

➤ **Credit granting periods**

The time required to set up a loan differs from one bank to another, nine (9) banks out of a total of twelve (12) replied that the term is short term, while the remaining three (3) declared it as medium term. These delays can be justified by the fact that they allow bankers to better manage risks through tools that they use in different ways, as shown in the following figure:

**Figure n°09: The duration of the setting up of the loan**

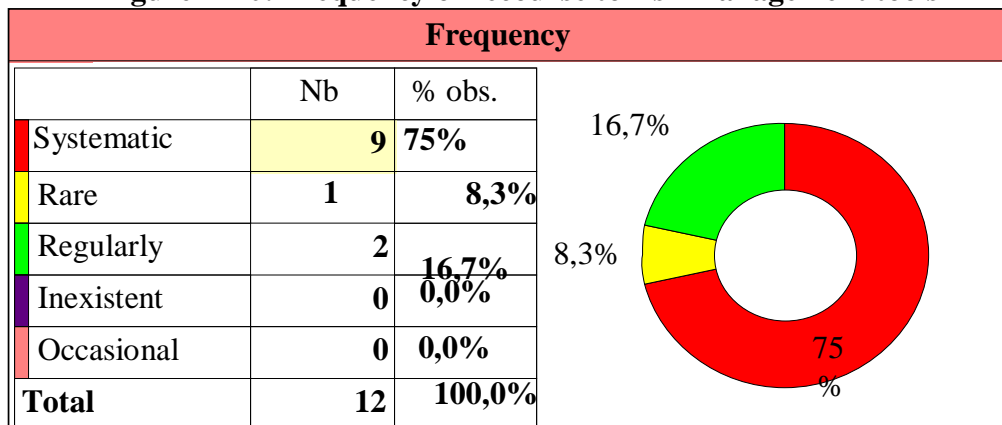


**Source:** Prepared by the author based on survey results

➤ **The use of risk management tools**

According to the answers obtained from our survey, the use of credit risk management tools by banks is systematic at 75%, while for other banks it is regular at 16.7% and rare at 8.3% (see figure 10).

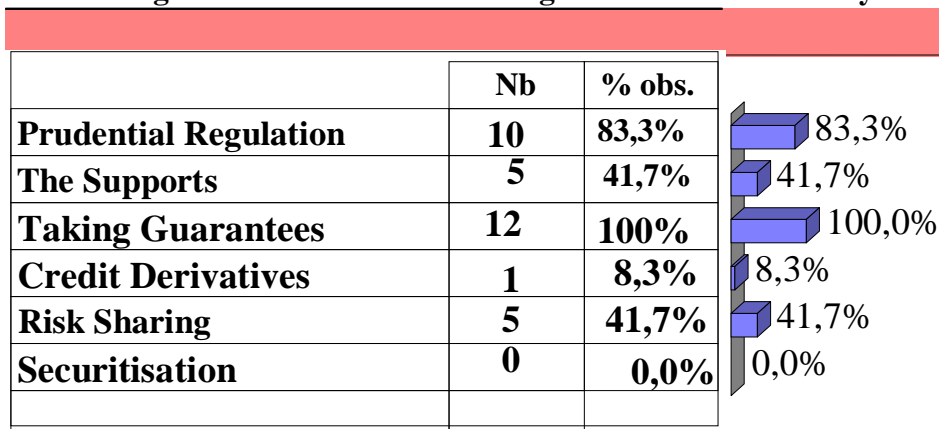
**Figure n°10: Frequency of recourse to risk management tools**



**Source:** Prepared by the author based on survey result

Furthermore, the figure below informs us about these different methods of credit risk management, according to the responses collected from our sample:

**Figure n°11: Credit risk management methods used by banks**



**Source:** Prepared by the author based on survey results

Thus, it can be seen that all banks opt to take out guarantees as a safe and indispensable means of covering themselves against credit risks. In second place, and with a rate of 83.7%, the banks opt for prudential regulation. Finally, to better manage their credit risks, the banks adopt the methods of collateral and risk

sharing, at an equal rate of 41.7%. The following table illustrates in detail how banks deal with credit risk failures, as follows:

**Table n°07: Treatment of credit risks according to banks**

<b>Bank</b>	<b>Treatment</b>
<b>Gulf Bank Algérie</b>	In a very prudential manner.
<b>NATIXIS Algérie</b>	Level of risk controlled by the required guarantees.
<b>General Society</b>	Customer monitoring; credit control; capping of credit agreements.
<b>Bank for Agriculture and Rural Development</b>	By stage and according to its nature and origin: commercial follow-up (movement of turnover entrusted; discounting of guarantees); site visit, extension of maturity; debt rescheduling with recovery.
<b>Local Development Bank</b>	Minimising credits.
<b>National Bank of Algeria</b>	Different instruments in this area.
<b>Popular Credit of Algeria</b>	Demand for more guarantees.
<b>External Bank of Algeria</b>	Demand for more guarantees.
<b>National Savings and Provident Fund</b>	Guarantees, technical accounting and financial documents.

**Source:** Prepared by the author based on survey results

## **5. Conclusion**

The analysis and management of credit risks represent very important elements for banks, because of its expansion and rapid development, through the different methods and means of management and prevention (DIETCH M; PETEY J, 2003, p.63), and especially through measurement and control tools (BOUSQUET J, 1997, p.46).

This importance stems from the fact that every time a bank grants a loan to a client, it systematically exposes itself to a multitude of risks (DE COUSSERGUES S, 1992, p. 72), such as credit risks, which can be detrimental to its smooth operation.

In this research work, we mainly addressed the problem of credit risk management by dealing with the following issue: "How do commercial banks in Algeria, especially those in the city of Bejaia, manage the credit risks they face on a daily basis? ».

The treatment of this problem was carried out through a practical framework, where we conducted a field survey through a questionnaire distributed to fifteen (15) public and private banks in the city of Bejaia; the processing of the collected data was carried out using a specialised software, namely SPHINX IQ2.

During our field investigation, we found that, before making a decision to grant or refuse a credit application, the bank must first identify the client's financial health, by requiring a whole file containing elements that will enable it to both receive guarantees and assess his solvency. We have also noted that some banks still use the traditional method and are in the process of adopting the new method, namely scoring.

Thus, our work has enabled us to confirm all our initial research hypotheses, namely: prudential regulation is an effective tool in the assessment and management of bank credit risk; financial analysis is a direct indicator of credit risk measurement (LAHILLE J P, 2001, 31); the requirement of guarantees may be the most reliable and effective method for avoiding and managing credit risks.

Also, our field survey study allowed us to understand the methods of credit risk management at the level of the banks in the city of Bejaia, deducing that all banks require reliable and solid guarantees to control credit risks. It was realised that the banks hardly use risk sharing since the clients assume the totality of the risks through different rescheduling procedures and the recovery of the guarantees mortgaged by the client, through a judicial and regulatory process.

However, as with all research, we encountered a certain number of difficulties, from the documentary phase to the end of our work, particularly with regard to the distribution and collection of the fifteen (15) questionnaires in our sample. In fact, the literature on our theme, even if it exists, is not very rich and the "time" constraint did not really help matters, nevertheless the processing of the questionnaire responses enabled us to come up with fairly reliable conclusions.

In the light of these elements, we propose to Algerian banks in general, to put themselves at the same level as their competitors, i.e. foreign banks, which are on the national territory, by adopting an internal rating system which will facilitate the study of files and make it faster and more robust, which would encourage banks, especially public banks, to continue their activity under better conditions.

Finally, we hope that this study will open up other avenues of research into bank credit risk management, in particular by taking into consideration internal and external audit reports, which can greatly help bank managers to control and better manage all the risks they regularly face.



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