

Challenge for rural financial intermediaries: the case of the state of Guerrero

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Abstract

Rural financial services have a dynamic character with challenges to defy related to their ability to adapt and stay in the rural sector, being credit a trigger for rural development and the opportunity to increase local competitiveness, the National Finance of Agricultural, Rural, Forestry and Fisheries Development with the vision of increasing productivity and contributing to improve the standard of living of the population identifies rural financial intermediaries as strategic allies. The objective of this research is to identify the elements that give certainty to the permanence of rural financial intermediaries that work with funds from the National Finance of Agricultural, Rural, Forestry and Fisheries Development. The research used an individual questionnaire, for its approach, a cross-sectional observational study was designed, with a sample of 96 borrowers whose information was processed in the SPSS23 program with an analysis of contingency tables, in 2019. The results show that the state of Guerrero contributes 3.68% of the credit placement nationwide, with the simple credit (63%) being the one with the highest placement, 31% is through RFIs, in the case that is analyzed, it was identified that the female gender and those with the marital status of married are those that show greater certainty of payment and only 26 % were borrowers for the first time, the credit placed is refactionary, being the nature of the product, a credit focused on economic and productive growth, finally the perspective of inter-institutional work manages to streamline response times and transfer credit conditions to the final borrower.

Keywords: certainty of payment, rural finance, rural financial intermediary.

Reception date: April 2022

Acceptance date: June 2022

Introduction

Economic theory presents different points of view related to the importance of the financial system for economic development, some express deep interest and others a total skepticism (Güryay *et al.*, 2007). The theoretical debate was initiated by someone who argued the possibility that the development of the financial system is a factor that makes technological innovation possible and that this in turn promotes economic growth (Prior and Santomá, 2007). However, for Levine (1997), the relationship between economic growth and development of the financial sector is evident, because the latter reduces the cost of capital and improves the allocation of resources (increasing the quantity and quality of investment projects), thereby boosting economic growth.

The challenges faced by rural companies related to their ability to adapt to competition require a dynamic search for new strategies, with financial services being an alternative. Giving opportunity to innovation in the rural sector related to the knowledge and technologies that are generated in production, processing and commercialization that allow producing more and with better quality, venturing into the markets, generating profits and benefit to society (Pomareda and Hartwich, 2006).

The rural financial system in Mexico has evolved in recent years due to the reformulation of its vision and design of public policies in the sector; strengthening the legal environment of financial markets and improving the regulation of programs and institutions dedicated to rural finance. This new system has proven to be much more effective than government intervention through loans on pre-established terms (Yaron, 1997). In Mexico, unlike other Latin American countries, such as Bolivia, Peru and Ecuador, they have little coverage (Alpízar and González-Vega, 2006). This is difficult to explain given the size of its population and the state of the economy as a whole.

In order to address and solve the lags that existed with respect to financing the countryside, in 2002 the Mexican State decided to liquidate the National Bank of Rural Credit, SNC and its twelve regional banks because it considered that its scheme was exceeded by the needs of the countryside and a new agency called Financiera Rural (FR) was founded in 2003, with the aim of activating the economy of rural areas and companies dedicated to the agricultural sector, offering credit products designed to meet the financing needs of the sector.

As a process of natural evolution of the economic environment and with the intention of attending a greater number of borrowers, in 2014 this unit became the National Finance of Agricultural, Rural, Forestry and Fisheries Development (FND, for its acronym in Spanish), with the mission of 'boosting the development of the rural environment and the activities of the primary sector, through credit and financial services accessible to producers, rural financial intermediaries (RFIs) and other economic agents, in order to increase productivity and contribute to improving the standard of living of the population' (FND, 2019).

RFIs are associative figures created in order to grant credit to producers in rural areas linked to a productive economic activity in the region with funds granted by the FND, which are classified into dispersing entities: Rural Production Societies, Social Solidarity Societies,

Anonymous Societies, Civil Associations and Civil Societies, Nonregulated Rural Financial Intermediaries and Regulated Rural Financial Intermediaries, financial conditions such as financing amount, term, interest rate, commissions, guarantees and risk mitigants are specific to each of these companies.

Credit is a commitment agreed between the borrower and the RFI, in order to provide purchasing capacity in advance, identifying credit risk, when there is the possibility that one of the parties to a financial contract is unable to comply with the financial obligations contracted, causing the other party to the contract to incur a loss, being a frequent problem in rural finance. Wenner *et al.* (2008) proposes a credit assessment in two stages, the first, to assess the capacity to pay and the second, the use of assets as the main support of a loan, and Meza (2009) proposes a classification in willingness to pay and capacity to pay, in this case, it is intended to identify elements that provide certainty of payment, considered as the capacity and willingness to pay a credit.

The main types of credits offered by the FND (2019): current account, it is intended for working capital needs, for the production of goods, provision of services and commercialization, they are made in short cycles. Refactionary, it has the purpose of the acquisition, replacement or substitution of machinery and fixed assets, with a term depending on the useful life of the goods acquired. Simple, credit to finance requirements for working capital, production of goods and provision of services. Habilitation or *avío*, credit for a productive cycle or period with a defined use.

The state of Guerrero has a distribution of its population in 58% urban and 42% rural, contrasting at the country level, where the proportion is 78% and 22% respectively (ATG, 2017), being a challenge the development of the rural area, RFIs are an option to bring financing to the rural population, since this is an alternative that, in the last 15 years, has registered significant advances in terms of financial inclusion. However, efforts have been insufficient, in addition, there has been a contraction in access to and use of rural financial services (Villarreal, 2017).

The purpose of this research is to identify the elements that give certainty to the permanence of the RFI to guarantee sustainability before the FND. The literature with respect to rural finance is broad, it is enough to mention the experiences of Soto (2008), who studied the influence on dispersers and rural financial intermediaries in the state of Veracruz, Pérez *et al.* (2009) documented the contraction of agricultural credit in southern Sonora as they became insufficient with the new model of financial services, on the other hand, Almeraya *et al.* (2011); Guajardo *et al.* (2016) identify the implications of credit for rural development in the states of San Luis Potosí and Puebla, respectively.

Materials and methods

This research was carried out in a company that for the purposes of this work we will call Guerrero intermediary, engaged in the sale and supply of technification solutions for production processes and funded by the FND in the second-tier credit modality, the financial product is called: refactionary credit, being the only company active in the state of Guerrero, with this type of financial product at the second-tier level. The final borrowers are mainly in rural areas linked to economically productive activities; the credit granted can be up to 80% of the total amount of the investment to be made. The financial services offered by the intermediary are aimed at the general public.

To carry out the research, a quantitative instrument was used, such as the individual questionnaire (Hernández-Sampieri *et al.*, 2010). It was a quantitative and observational cross-sectional study because it was conducted at a single time. The sample was non-probabilistic at convenience, of 96 borrowers who had a current credit with the RFI, object of the present study, to analyze the association with the variable certainty of payment, the statistical method of the analysis of contingency tables was applied, to describe the relationship between the characteristics of the borrowers: sociodemographic (marital status, level of education and gender), amount of credit, interest rate and the certainty of payment of the respondent.

The information obtained was in 2019. The collection of information was carried out in two stages within the surveys of the borrowers, in the first section, the sociodemographic characteristics of the borrowers of the RFI were addressed, in the second stage, the characteristics of the credit history were addressed, such as, validity of the credit and previous credit experience, amount of the authorized credit, the interest rate and the punctuality of the payment, evaluated at four levels, timely, with delays (1 to 30 days), signs of non-payment (31 to 90 days) and non-payment (more than 90 days).

A database was designed in SPSS based on the information obtained in the answered questionnaires. In the first instance, descriptive measures were obtained: averages and percentages of some characteristics of the borrowers, then cross tables were obtained to analyze the relationships between the characteristics indicated above and the certainty of payment. To measure whether there is a relationship between them, the two statistical hypotheses are considered: the null hypothesis expresses that there is no relationship, and the alternative hypothesis affirms that there is a relationship between the variables or characteristics that are compared. For example, the relationship between marital status and certainty of payment.

When the level of significance expressed with the p-value is very close to zero, it is said that there is enough evidence to reject the null hypothesis that there is no relationship between marital status and certainty of payment, as can be seen in the section of results. Additionally, a semi-structured interview was conducted with the general manager of the RFI, the interview addressed the environment and emergence of the activity, strategies for its permanence in the market and the advantages and limitations of being funded by the FND.

Results and discussion

Environment and emergence

According to the request for information to the National Institute of Access to Information and Data Protection (INAI, for its acronym in Spanish) of number 0656500006318 of June 2018. The FND operates through five regional coordinations and the corporate, the South region is composed of eight states, contributing 17.14% of the portfolio placement in the period from 2010 to 2017 (Table 1), with the state of Guerrero being the state with the lowest credit placement, contributing an amount of \$2.161 billion pesos (Table 2), it should be emphasized that, if the supply of credit is interrupted, investment, growth and prosperity of the economy can be hindered (BID, 2004).

Table 1. Placement of the FND 2010-2017 (figures in millions of pesos).

Region	2010	2011	2012	2013	2014	2015	2016	2017	Total
Central-West	5 176.40	5 658.00	7 365.60	8 042.20	9 673.80	1 355.50	14 203.40	15 343.30	77 818.20
Northwest	4 816.90	5 337.60	5 964.50	8 089.60	10 918.90	12 965.20	13 342.50	15 812.90	77 247.90
North	6 408.50	6 673.20	7 727.60	8 944.30	11 180.80	14 347.90	17 127.30	20 111.90	92 521.50
South	3 623.70	4 204.70	4 470.10	6 802.70	8 329.50	9 017.70	10 834.20	11 476.80	58 759.40
Southeast	1 939.60	2 053.00	2 523.00	3 285.70	4 330.60	5 634.30	6 505.70	6 627.00	32 898.90
Corporate	0	30.70	1 76.50	282.40	345.30	772.50	960.2	930.60	3 498.20
Total	21 965.10	23 957.20	28 227.30	35 446.90	44 778.90	55 092.90	62 973.30	70 302.50	342 744.10

Table 2. Placement of the South region of the FND 2010-2017 (figures in millions of pesos).

State	2010	2011	2012	2013	2014	2015	2016	2017	Total
Guerrero	150.00	123.10	209.40	351.10	176.70	279.40	425.10	446.20	2 161.00
Hidalgo	364.20	253.60	295.80	449.40	604.90	891.50	859.50	887.70	4 606.60
Mexico	367.20	445.10	450.50	853.20	999.70	1 099.60	1 543.70	1 760.30	7 519.30
Morelos	240.30	301.80	235.80	229.20	283.70	313.40	358.20	419.60	2 409.00
Oaxaca	568.30	634.40	622.60	938.10	1 199.20	1 307.50	1 430.80	1 837.90	8 538.80
Puebla	523.50	615.40	614.40	1 034.40	1 560.60	2 039.90	2 798.20	2 836.10	12 022.50
Tlaxcala	501.00	722.40	633.40	738.70	668.40	967.10	970.00	992.00	6 193.00
Veracruz	909.20	1 108.90	1 408.10	2 208.60	2 836.40	2 119.39	2 421.60	2 297.00	15 309.10
Total	3 623.70	4 204.70	4 470.00	6 802.70	8 329.60	9 017.70	10 834.10	11 476.80	58 759.30

There are three FND agencies in the state of Guerrero in the municipalities of Chilpancingo, Ometepec and Petatlán in charge of granting financing through direct and indirect credit, the latter corresponds to the placement through RFIs, two are currently operating in the state and until 2017 they had placed 31 % of the total portfolio (Table 3), financial intermediation is a key aspect for the paradigm of the rural finance market, for which it is assumed that the state must support its creation and strengthening, and contribute to the reduction of costs and the improvement of the quality of services, which have an impact on the population attended (González-Vega, 1998) and although significant progress has been made in terms of financial inclusion, efforts have been insufficient (Villarreal, 2017).

Table 3. Placement by type of credit in the state of Guerrero from 2010-2017 (figures in millions of pesos).

Type of credit	2010	2011	2012	2013	2014	2015	2016	2017	Total
Habilitation	34.70	26.30	41.80	44.00	31.50	45.60	46.70	66.60	337.20
Refactionary	26.70	4.90	17.00	16.00	12.70	55.30	168.80	154.40	455.80
Simple	88.60	91.90	150.60	291.10	132.50	178.50	209.60	225.20	1 368.00
Total	150.00	123.10	209.40	351.10	176.70	2.79.40	425.10	446.20	2 161.00

The credits currently offered by the FND are broken down into six financial products: current account credits, pledge credit, refractionary credit, simple credit, habilitation and avío credit and repurchase agreements, in the case of Guerrero it only has three types of credits registered, the habilitation or avío credit (16%), simple credit (63%) and refractionary credit (21%), the latter is a credit directed to the acquisition, replacement or substitution of machinery, equipment and other assets, being a credit focused on economic growth, coinciding in the opinion of Almeraya *et al.* (2011), a refractionary credit refers to producers focused on the growth of their projects or activities.

Refractionary credit has a low market share; however, the impact of agricultural mechanization is fundamental in increasing production since it allows increasing the cultivated area, improving cultivation techniques, lowering costs and dignifying human labor (Negrete, 2011). Therefore, it is necessary to develop new models based on the historical information of the clients that allow generating decision models in the granting and considering the behavior with the consolidated clients (Mays, 2004).

Permanence in the market

It is estimated that less than 5% of Latin American rural households have access to formal financing (Wenner *et al.*, 2008), since the perception of agricultural activities is related to the inherent risks of climatic events and uncertainty in prices. In Mexico, the National Agricultural Survey (ENA, for its acronym in Spanish) in 2019 estimated 343 374 production units that requested credit or loans, being the main sources of credit, savings bank (26%), company or person that will buy the production (20.5%) and Financiera Rural (16.9%), there were production units that register more than one source of credit

The above is a reflection of a small base of borrowers in rural financial institutions, such is the case of the present study, since 74% of the borrowers already had a credit history, being the use of the credit card the main financial experience with 49%, a loan with a cooperative, credit union, directly with the FND or the Trusts Instituted in Relation to Agriculture (FIRA, for its acronym in Spanish).

Financial inclusion has a new perspective to channel resources towards the productive sector and development objectives, so it is up to development banks to contribute to improving access to the financial system through their role as second- and increasingly first-tier banks, by promoting financial innovation and a more direct relationship with their customers (CEPAL, 2018), in order to increase the portfolio of young people, who do not have guarantees and who do not have a credit history, who today only represent 26% of the RFI portfolio.

Of the borrowers surveyed, 70% were men and 30% women, with an average age of 49 years, being a reasonable age due to the objective of the borrower to guarantee payment, considering their integration into an economic activity; however, five records of people under 30 years of age were identified, being related to a joint obligor of people over 75 years of age, due to the limitation of the RFI to grant credit to people of that age, these young people being a new generation of borrowers.

In the case of borrowers in the modality of associative figures, they were few (9), because few organizations operate in a real way in the state, since, although they group together for the constitution of cooperatives, rural production societies and associations, mainly, in reality, they continue to carry out their productive activities individually.

The results showed that the male gender, 44% made a timely payment and in the case of the female gender, it presented 84.2%, the gender is significantly related to the certainty of payment, at a level of confidence of 95%. Female participation has a favorable response to financial compliance, likewise, Varela (2007) infers: women identify the possibility of creating their own business or improving the one they already had and, with this, feeling useful and independent, as the main benefit provided by microcredit. The risk is lower when the woman is the holder; however, only 30% are female borrowers of the RFI target of this research, even though it implies a greater contribution to household income, thus reducing the vulnerability of households (Cardero, 2008).

The marital status of married people predominates with 81%, of these, 58.1% make timely payments. In general, with a level of significance of p -value= 0.036, so there is a dependence on there being certainty of the payment of the credit, according to the marital status, being an element that provides stability and greater certainty of payment. The level of studies was 46% with a bachelor's degree level, 25% high school, 19% secondary education and 10% primary education, considered a high percentage of level of studies in the state of Guerrero, which has an average schooling of 7.3 years, corresponding to a completed primary education and the first year of secondary education (ATG, 2017).

With respect to the level of education, economic activity, amount of credit and interest rate, statistically there are not enough elements to relate them to the variable of certainty of payment, however, they are parameters to consider in the granting of credit, which must have a level of weighting for a risk analysis. The RFI should establish clear organizational processes, which are executed by credit promoters effectively and efficiently, for greater financial inclusion but also ensuring the sustainability of the RFI.

In relation to the territory, the state of Guerrero has seven regions where the RFI credit was distributed as follows: Costa Chica (41%), Norte (21%), Costa Grande (16%), Centro (9%), Acapulco (7%), Tierra Caliente (4%) and Montaña (1%), the latter being where Cochoapa el Grande is located, considered the municipality with the highest percentage of extreme poverty (CONEVAL, 2020), so it is imperative to continue financial inclusion throughout the state.

According to the manager, the strategies are aimed at the development of: a) financial services; b) commercialization of machinery and equipment; and c) management of incentives before programs, information aligned with the proposition that development banks play an important role in generating financing-oriented innovation, classifying it into three; innovation in the form of products, innovation in the form of processes and innovation in the form of institutionality.

Scope of FND-RFI relationship

The products currently offered by the RFI are focused on refractionary credits, with this financial product, one can acquire a machinery plant, a tractor or, where appropriate, a plow, the above generates that the credit amounts are from \$70 000.00 to \$1 200 000.00, according to the information obtained, since the machinery and equipment that are marketed are diverse for each crop, area or budget, so it is essential to develop financial products according to the volume of investment, taking into account the risk mitigants.

However, 57% of the borrowers obtained a credit of less than \$250 000.00 due to the mixture of resources between the contribution of the borrower, federal subsidy and credit. Therefore, the option of financial innovation, which refers in the first instance to the creation of financial instruments that improve risk management and meet market demand for certain financial services (CEPAL, 2018), is an alternative to develop innovation in financial products.

Response times are still a problem in rural finance, generated mainly by the lag in financial education, since borrowers do not know from their credit bureau history to their tax identification card, additionally the bureaucratic processes that must be carried out to deduct the credit from RFI to FND, response times of approximately three to six months are estimated, however, the relationship between the borrower and the RFI once the credit is authorized, the equipment is delivered, with an estimated time of management within a period of 1 to 3 months.

Efficiency in response times, access to financing and direct linkage with productive activity are elements that give certainty to the permanence of the RFI, since financing in the countryside is a trigger factor for productivity, it is also a variable that allows reducing poverty and increasing local competitiveness, which invariably generates development (Almeraya, 2011).

The relationship between the FND and the RFI is always subject to the terms authorized by the FND, based on the objectives set by the development banks, which will be duly aligned with the perspective of the federal government, however, the relationship between the RFI and the borrower is susceptible to make improvements in its products and services, being innovation indispensable, finally innovation is the idea of change, which allows the innovation to be successfully produced, assimilated and exploited, in economic and social terms (Formichella, 2005).

Conclusions

The rural area has a strategic ally for its development, and it is the rural finances that, in this research, were addressed through the RFI of the FND, where the regional coordinations with the least efficiency are those of the southeast region and the southern region, the latter composed of eight states, where Guerrero provides the lowest credit placement. Two important data are that 31% of the total portfolio is placed through RFIs and 63% of the portfolio corresponds to simple credit, that is, a very flexible credit that does not have a specific use or a direct link with a productive activity and only 21% of the refractionary credit is destined to

investments such as machinery and equipment, being the latter, a financial product directly related to the productive activity in operation, the above generates greater certainty in the return of money for the payment of credit.

Financing is a necessary product to trigger development in the rural sector of the state of Guerrero, so the RFI is part of the social financial fabric, since it is one of the limited options that producers in the rural sector have to obtain financing for their productive activities. Additionally, elements must be sought to mitigate the risk in new clients and to be able to increase that 26% of new borrowers that are currently attended, because the rural population ages and a new generation of borrowers emerges, which is convenient to educate in rural finance to guarantee their permanence as borrowers and that they use the credit to potentiate the productive activities of the region.

In the case of sociodemographic characteristics such as female gender and belonging to the married marital status, they have a high degree of influence on the certainty of payment of borrowers, so they must be parameters to be considered to mitigate the risk for the RFI and although a relationship with the level of studies, economic activity, amount of credit and interest rate was not identified in the present research, it is convenient to define the profile of the borrower, in this way, mechanisms that strengthen the organizational structure of the RFI are addressed, in order that there is greater financial inclusion in rural areas.

The RFI shows a company with stability due to the characteristics of its portfolio of borrowers, people with a higher level of education than the state average, moderation in the amounts of credits granted and the diversification of the company's activities: commercialization and financial services, in addition to the elements provided by the FND through strategic alliances.

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