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Measuring the Impact of Banking Agents in Financial Inclusion in Mexico

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PROYECCIÓN 3·60

Proyección 3.60 (Proyección Tres Sesenta, S. de R.L. de C.V.) in conjunction with the National Banking and Securities Commission (CNBV), prepared this study entitled "Measuring the Impact of Banking Agents in Financial Inclusion in Mexico", based on information published by the CNBV and other governmental institutions with the purpose of providing additional knowledge to banks and groups interested in the promotion of Financial Inclusion. Proyección 3.60 and/or DataLab 3.60 or the CNBV do not assume responsibility for faults, errors or omissions derived from the information used to prepare this Study. Similarly, the opinions found in the study do not necessarily correspond to the opinion of the CNBV, but only to the authors of the study.

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SUMMARY

Banking agents arise in Mexico as a measure to bring banking services in localities where they don't have. From the beginning, banking agents have kept a sustained growth in the access points as well as in the people who use them. Reason why, motivation in this study is to perform a deep review related to financial inclusion impact and to propose windows of opportunity after eight years of operation. For this purpose, the impact of the agents is analyzed under two perspectives. The first, an intermediate effect that measures the municipality coverage and the most frequent operations.

The second, a final impact, which evaluates the results of banking agents in financial inclusion variables. The methodology used combines a propensity score matching model with the nearest K-neighbor method to find a counterfactual or control group to measure the impact on the selected variables. The study is made with information provided by the banks from different reports issued by the National Banking and Securities Commission (CNBV). The results obtained suggest that the presence of banking agents has boosted the number of deposits accounts and financial transactions in different channels, such as ATMs and POS terminals. Other result achieved was a list of 72 municipalities that are candidates to have banking agents due to their socioeconomic characteristics as well as their financial infrastructure since they are very similar to those that already have this channel. This new information can give some orientation to financial institutions according to their expansion strategies of this channel, as well as encourage the development of new savings products since there is still a great demand to cover. All this with the purpose of achieving greater financial inclusion in the country.

* / The opinions expressed in this work correspond only to the authors and do not necessarily reflect the institutional position of the CNBV.

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1. INTRODUCTION

Banking agents emerged as a legal figure that the government established by means of regulatory change as a measure with several benefits. Among them, having more banking access points to reach a greater number of populations where there is minor supply of financial institutions, this incentivizing the use of financial services. Moreover, represents a new channel for banks allowing them to diminish operation costs and increase their presence without having to open new branches or ATMs. Another advantage, is that it eliminates barriers on the usage of financial services, since, according to the National Survey of Financial Inclusion (*ENIF, 2015*)[1], the main reasons why people don't visit branches is that they prefer to go to other establishments, like convenience stores (13%) and other motives such as distance, insecurity, bad service and lack of trust (8%)[2].

Banking agents also play a part by helping diminish the informal market of financial services in Mexico. In many municipalities, fundamentally rural areas with high social poverty, informal activities are still very frequent among residents, both in credit and savings. In credit, 25% of the population only employs informal credit products, plus an additional 12% employing both formal and informal products. In savings, there are products like tandas (private group savings scheme) in which the percentage of people that only uses the informal channel ascends to 32%, plus an additional 28% employing both[3]. By having more banking access points, agents increase the possibilities of people using a formal savings product and/or credit rather than an informal one.

The modification to the Regulation made by the National Banking and Securities Commission (*CNBV*) at the end of 2009 runs along to international tendencies, in which many countries have employed the figure of the banking agent as a measure to expand the usage of financial services. For example, countries like Colombia, Brazil, Kenya, Nigeria, Paraguay, among others, have executed changes in their respective laws in support of financial inclusion. International organisms like *AFI* (Alliance for Financial Inclusion) carry out an important labor by sharing and helping achieve success cases in other countries and so resting assured that results cause the appropriate impact. For example, a series of key indicators has been developed in order to measure, in a standardized manner between countries, the evolution of some financial inclusion variables. On one hand, there is access to financial services, which

1 National Survey of Financial Inclusion (ENIF, 2015)
2 The basic reason is that they don't have a bank account. If we remove this option, since they are nonusers, the percentage of those preferring an alternate channel grows considerably.
3 ENIF, 2015.

measures the infrastructure available to an "administrative unit or municipality", like branches, ATMs, point of sale terminals and agents. On the other hand, we have the usage of financial services where the number of savings accounts is analyzed, as well as the level of transactionality in the different channels. With these indicators or KPIs (Key Performance Indicators) a basic level of measurement and comparison between countries is achieved.

In addition to this regulatory change, two rules were modified in Mexico in order to complement the framework of Financial Inclusion. The first, was to allow the opening of accounts in a simplified manner, in which the authority defined four account levels that are distinguished by their maximum volume of transactions and by the documentation required for their opening. For example, for the opening of a level 2 account, only the name, date of birth and address is required, but only deposits of up to 3000 monthly investment units can be made[4]. For the second, operation rules regarding mobile telephony were established, in which mobile telephones are allowed to make payments associating a telephone number to a client's account number, reducing the transaction costs for both parties.
Under this context, a more complete and robust framework of Financial Inclusion is achieved.

As it is mentioned in the studio of banking agents in P. Peña and A. Vazquez (2012), the measurement of the agents' impact may be divided in intermediate impact and final impact.
"Intermediate impact is the answer in terms of openings of banking agents. We can say that there is an intermediate impact if banks use the agent's figure and if clients perform transactions through them. Final impact is the result of the opening of banking agents in whatever Financial Inclusion metrics we are using. Even when having banking agents operating, it may be conceivable that it won't have a mayor effect on Financial Inclusion. For example, it is possible that both banks and clients have diverted transactions from the branches and ATMs to the agents. In this case there would not be transactions or additional accounts"[5].

The current studio was structured under this context, considering the Change Theory frame.
One of the suggested objectives in the National Development Plan 2013-2018 is to "Widen the financial system coverage in to a bigger number of persons ad enterprises in Mexico, especially for those segments of the population that are excluded nowadays"; this means to increase the financial inclusion. The regulation of banking agents is one of the main supplies for the fulfilling of such objective. The product has been the incorporated business networks and the number of banking agents opened in the municipalities.

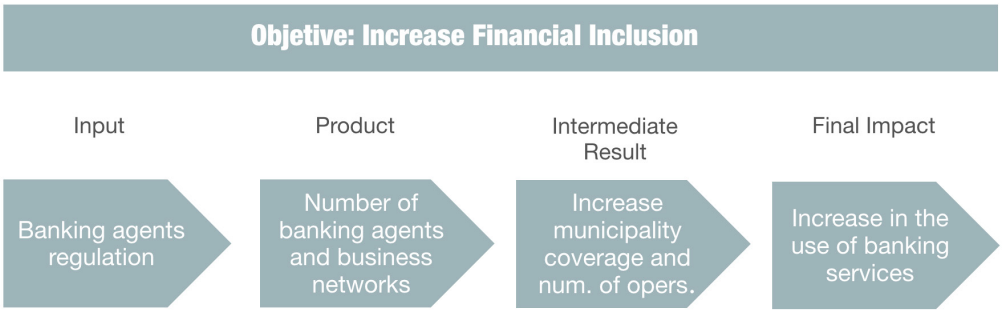
In this sense, the intermediate result is related to the access to financial services; for example, if modules have been opened in municipalities where there was no presence of branches, that is, if the possibility to access financial services was increased. Final impact refers to the usage of financial services, whether if the presence of agents contributed to a greater number of deposit accounts or greater level of transactions.

In accordance to this, the indicators to carry out the evaluation were defined.

4 Requires validation with the National Population Registry (RENAPO). Also, level 1 does not require any data from the holder, but only allows deposits of up to 750 monthly UDIS. Level 1 and 2 accounts do not require the presence of customers to be opened. Level 3 and 4 require the presence of the customer and also more documentation but allow larger amount transactions. In September of 2018 an UDI was equivalent to 6.08 pesos.
5 P. Peña and A Vazquez "The impact of banking agents in Financial Inclusion: a first evaluation". Economic studies, CNBV, Volume 1, 2012.

The following diagram summarizes what has been here explained:

Table 1. Conceptual framework (change theory)



At first, banking agents may generate a benefit for the three parties involved. Clients win in convenience, since they will be able to perform more accessible financial transactions. Banks win because greater convenience translates to a greater usage of their services. Banking agents benefit in two ways. First, through the transactions' commissions agreed with the bank. For each payment of services or for each deposit made through the agent, it receives a commission. Second, through greater number of persons using the establishment to make bank transactions. More people means more potential clients for the main line of business[6].

The first evidence of intermediate results show an ongoing increase in operations performed through banking agents. Every month, a greater number of modules are utilized, increasing little by little the coverage in municipalities with no access to financial services. People increasingly use access points in order to carry out different operations; but in reality, the real impact in respect of Financial Inclusion is still unknown.
It is uncertain to what extent people are substituting branches and ATMs for banking agents, or whether there is really a greater number of accounts and volume of transactions.

The difficulty of measuring the final impact of regulatory changes resides on the fact that only what happened can be observed, not what could have happened. In the case of banking agents, what we see is, for example, that a municipality with an agent increases the growth rate of transactions made in ATMs, but we don't see what would have happen if there wouldn't been agents, that is, we don't know if the municipality would have grown at the same rate. This imaginary situation –what would have happened without agents– is called counterfactual.
Because the regulatory change was applied to all banks and all municipalities, meaning, no group of municipalities was excluded in order to analyze its behavior and then compare it with those that were impacted. As there is no counterfactual or natural control group, it is necessary to resort to a quasi-experimental analysis in order to estimate the counterfactual.

6 Ibid. Op. cit.

For the measurement of the intermediate results there are already indicators and time series that allow us to see the evolution of agents in regard to coverage and operations made through them.
Because of that, the objective of the present study is to propose a method in order to evaluate the final impact in banking agents in three Financial Inclusion variables: transactions in ATMs, transactions in point of sale terminals and number of savings accounts. For this, we will divide the analysis in two sections. The first will show the evolution of agents, where we will show indicators related to the product (measured by number of agents) and intermediate results (measured in terms of municipal coverage and operations through agents). The second will apply the statistic method selected to measure the final impact (measured in terms of the usage of financial services).
This last one implies the estimation of a counterfactual that will serve as control group for the analysis. Previous to these sections, in the next chapter, we will specify the information sources employed as well as the methodology chosen to measure the impact. In the final chapter, we will expose the conclusions of the study in terms of financial inclusion.

2. DATA BASE AND INFORMATION

For the realization of the study, public information was gathered from web sites of each institution mentioned. First, the availability of information was reviewed in order to define the dimensionality of the database. That is, determine, based on the objective, the necessary information to carry out the study and verify that it is found in the level of disaggregation and periodicity that is required. In this study, we resort to databases of four government institutions, available at a municipal level and with a monthly periodicity.

Also, it is important to establish the period of analysis. For that matter, we have to review the consistency of the information; that is, the data series have to consider the same variables in time and not present missing data or out of range data (outliers). In these cases, it is necessary to carry out a cleaning of information to adjust and enhance the series for the benefit of the analysis.

National Banking and Securities Commission (CNBV)

We resort to the information that is monthly reported by banks in regard to their operative information related with financial inclusion. Also, we considered the accounts report and balance of deposit accounts, as well as the banking agents' information report.

Access:

- Number of branches, ATMs and Point of Sale Terminals
- Banking agents' modules[7]
  (access points for clients)

Usage:
- Number of credit and debit cards
- Number and balance of deposit accounts

Transactionality-Usage:
- Number of transactions in Point of Sale Terminals and ATMs
- Number and amount of operations made through Agents

National Institute of Statistics and Geography (INEGI)

From this institute we consider the database of the 2,458 municipalities that Mexico has. The code to identify municipalities was defined by *INEGI* and is the one that now is considered official.
This variable is key for the study since it allows the union of different databases.

National Population Council (CONAPO)

The Council uses the Census made by *INEGI* every 10 years, as well as the intercensal information (2015) in order to estimate the population on a municipal level. It carries out population municipal estimations according to age range and sex. Also, we obtained the percentage of population earning less than two minimum wages.

Considering this information and according to the methodology of the *CNBV*, municipalities were classified in six different segments according to number of residents, being as follows:

- **Rural:** less than 5,000
- **In transition:** between 5,000 and 15,000
- **Semi-urban:** between 15,001 and 50,000
- **Urban:** between 50,001 and 300,000
- **Semi-metropolis:** between 300,001 and 1,000,000
- **Metropolis:** more than 1,000,000

National Council for the Evaluation of Social Development Policy (CONEVAL)

The *CONEVAL* database presents a measurement considering eleven variables of social deficiencies taken from polls made by *INEGI*. In the "Main Results by Locality", of the Population and Housing Census (ITER 2015), this institution publishes the results of diverse socioeconomic concepts at a municipal level.

Education:
- Percentage of illiterate population age 15.
- Percentage of population age from 6 to 14 not attending school.
- Percentage of population aged 15 and over with incomplete basic education.

Health:
- Percentage of population without eligibility to health services.

Housing:
- Percentage of houses with dirt floors.
- Percentage of homes that don't have a toilet or sanitary facility.
- Percentage of homes that don't have piped water from public network.
- Percentage of homes that don't have drainage.
- Percentage of homes that don't have electricity.

Basic Services:
- Percentage of homes with no laundry machine.
- Percentages of homes without a refrigerator.

7 Maximum number of modules, as defined by the CNBV.

CONEVAL considers these eleven variables to calculate the Social Lag Index, which is indicated as a well-thought measure that summarizes four indicators of social deficiencies (education, health, basic services and spaces in housing) in one single index which has the purpose of ordering municipalities according to their social needs.

The results of the Social Lag Index are presented in five strata. Stratification is employed based on the Dalenius & Hodges Methodology (1959)[8], since it allows units to be as homogenous as possible within each stratum and as different as possible between strata.

Besides the quantitative variable of the Social Lag Index, *CONEVAL* publishes on a municipal level the Social Lag Rank qualitative variable, in which the numerical variable converts, by means of a scale, into a categorical one in order to facilitate itate analysis. The five strata in which the Social Lag Rank is distributed and on which we classified the municipalities, are:

- Very low
- Low
- Medium
- High
- Very high

3. METHODOLOGY

For the measurement of the intermediate result, in the following chapter we will describe the evolution of banking agents where we analyze the presence of modules in municipalities and growth on number of operations. In this section, the statistical models employed later are described theoretically, as well as the logic sequence of events for the measurement of final impact.
The analysis is performed in three steps:

a) Propensity Index Estimation (probability of having banking agents).

b) Counterfactual estimation based in the Propensity Index utilizing the K-nearest neighbor method.

c) Impact analysis in variables of financial inclusion.

a) Propensity Index Estimation (IP) or propensity score

Beforehand, is important to notice that the pairing or matching methods, as established by Gertler, use statistical techniques in order to build a control group. For each possible unit, the treatment intends to find a non-treated unit with as many similar characteristics as possible.
In particular, the propensity score matching method (Rosenbaum and Rubin, 1983), is summarizes by Gertler this way: “For each unit of the treatment group and of the unsubscribed group, the probability that such unit subscribes to the program

8 Tore Dalenius and Joseph L. Hodges, Jr. Journal of the American Statistical Association, Vol. 54, No. 285 (Mar. 1959).
9 Gertler, et. al. p. 161.

is computed (the so-called propensity score) based on the observed values of its characteristics (explicative variables)[9]". That means, that the probability of having agents in such municipality is estimated based on the characteristics or variables observable of municipalities.

This method seems appropriate when applied to regulatory changes, as it contains no clear allocation rules that explain why certain municipalities are subscribed to the program (having agents) and others don't. There are several methods to estimate the Propensity Index, the most utilized in practice is logistic regression (Logit) due to its simplicity and due to the good results it provides. Because of the nature of the data, the Logit model is the best approximation for modeling the treatment variable, since it is categorical and binary.

This model will estimate the probability of each municipality counting with an agent, given certain socioeconomic and exogenous factors:

$$P_i = P[Y_i = 1 \mid X_1, X_2, \ldots, X_n] = \frac{1}{1 + e^{(-t)}}$$

$$\textit{where } t = \beta_0 * X_1 + \ldots \beta_n * X_n$$

Where Pi is the probability that the treatment variable be equal to one, that means, having an agent, conditioned to certain exogenous factors and the β^' are coefficients estimated from the independent variables.

$$\text{Banking agents variable} = \begin{cases} 1 \text{ if the municipality has an agent} \\ 0 \text{ if the municipality has no agent} \end{cases}$$

An important assumption is that there should be conditional independence, establishing that given a set of observable X variables which are not affected by the presence or absence of agents, potential results Y are independent of the presence of agents. In this way, we decided to use, as observable characteristics of municipalities, the following variables:

- **Social Lag Rank**
  (considers 11 socio-demographic variables)
- **Type of municipality**
  (considers the size population of municipalities)
- **Population percentage with less than two minimum wage income** (socioeconomic)
- **Number of ATMs**
  (financial infrastructure)
- **Number of Point of Sale Terminals**
  (financial infrastructure)

The Logit model will assign the probability that the municipality may have an agent and will verify the predictive quality of the model executing the accuracy ratio that is obtained from the confusion matrix. The confusion matrix serves to determine the percentage of cases classified correctly, that means, it makes a comparison between the real datum and the datum predicted by the model.

Table 2. Confusion Matrix and Accuracy Ratio

Real	Prediction		Precision: 84.96%
	Banking Agent = 0	Banking Agent = 1	
Banking Agent = 0	563	163	
Banking Agent = 1	194	1,454	

$$Precision = \frac{True\ Positive + True\ negative}{Total}$$

The accuracy ratio represents the gain of the model, which is nothing, but the percentage of cases classified correctly. In practice, in order to consider that a model is good, the accuracy ratio must be at least greater than 75%.

b) Counterfactual estimation

Once the IP (Propensity Index) is obtained, which contains all the relevant information of the variables considered, we proceed to find pairs of municipalities with the same IP, but one with a banking agent and another with none. For this, the nearest K-neighbor statistical method is used to pair municipalities that have agents (treatment group, GT) with municipalities with no agents (control group, GC) with the nearest IP.

$$min\left|\lambda_T - \lambda_C\right| \leq Caliper$$

where λ_T is the IP of the treatment group and λ_C is the IP of the control group

Put in another way:

The caliper is established in function of the business, that means how strict we want the matching to be. This works in function of the available data, that is, if our universe is very large, considerable restriction can be made to ensure a better overlap, but if we have few data, it is no advisable to lower this parameter much, because we would be left with very few observations in the treatment and control group. With this, we were able to run two statistically similar groups, the Control Group (without agents) and the Treatment Group (with agents). Thus, we have a counterfactual with sufficient methodological robustness to be used as a Control Group and analyze effect observe its impact on some variables of financial inclusion.

This method requires an important assumption: that there is overlapping between the group characteristics. On our study, we present the case that there are many municipalities, where a match could not be found in the control group.

For example, in the cases of metropolis and semi-metropolis municipalities (more than 300,000 residents) all municipalities have agents. In this case we opted to limit the sample for mu-

nicipalities that have overlapping or a common rank.After the model is applied, it is advisable to review the information so the counterfactual result as best as possible.
For example, municipalities that may influence the measurement are eliminated, such can be the case of municipalities that had an agent in the past but now they don't. Also, atypical data is presented of information poorly reported by banks.

c) Impact analysis

We will consider the selected variables from the database to measure the intermediate results and the final impact based on the growth rate in the last five years. This way, we will be able to compare their rates, between the control group and the treatment group.

- Number of savings accounts for every 10,000 adults
- Number of transactions on POS terminals for every 10,000 adults
- Number of transactions on ATM for every 10,000 adults

To help the analysis, we will use a matrix of municipalities to situate ourselves in a more familiar context in respect to size and type of municipality. Mexico has 2,458 municipalities that have very different characteristics and features. We observed that the tendencies followed by municipalities depend in great measure to the size of the population and the economic welfare. Therefore, a grouping was carried out in consideration of the number of residents in municipalities and the Social Lag Index explained before, as it is shown in the following table:

Table 3. Municipalities matrix according to type of municipality and social lag index

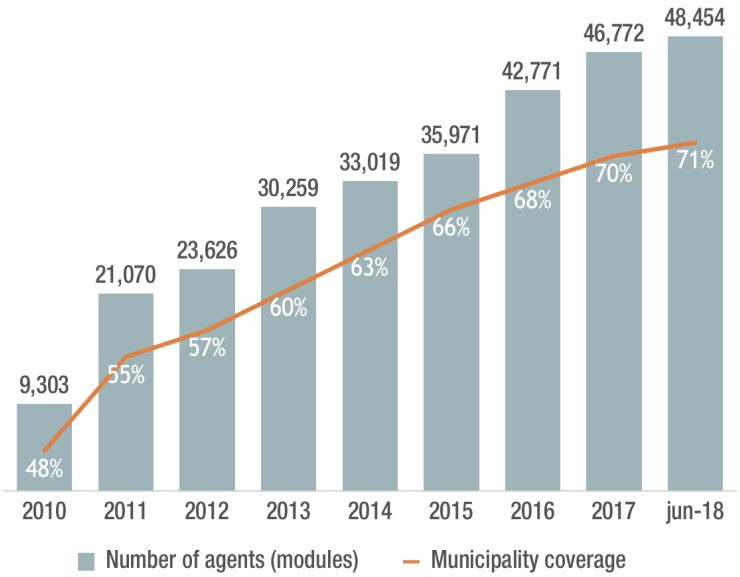
Type of Municipality / Social Lag Index	Rural	In transition	Semi-urban	Urban	Semi-metropoli	Metropoli	Total
Very High	76	56	39	4	-	-	175
High	245	150	142	30	-	-	567
Medium	166	164	219	65	-	-	614
Low	143	198	259	153	8	-	761
Very Low	32	55	73	106	63	12	341
Total	**662**	**623**	**732**	**358**	**71**	**12**	2,458

We can observe that, of the 30 groups of municipalities, there are seven found in zeros because very large municipalities have only low social lag ranks. In this manner, we have 23 groups of municipalities that in principle share some similar characteristics.

4. EVOLUTION OF BANKING AGENTS

The product indicator (number of open modules) can be seen in Graphic 4, in which the number of access points has grown in a significant manner every year, reaching more than 48,000 modules in June 2018. This means that both, businesses and banks, are interested in the continuation of the expansion of these access points and that the applied regulation had its first success. In the beginning, very few banks joined the project, but very soon their interest grew, and more banks and businesses took part on the new model. Currently, there are 23 banks operating with banking agents on more than 40 business networks, Oxxo among them with more than 17,000 access points, the agent network Yastas with 5,000 access points, and the Wal-Mart chain stores with around 2,500 access points.

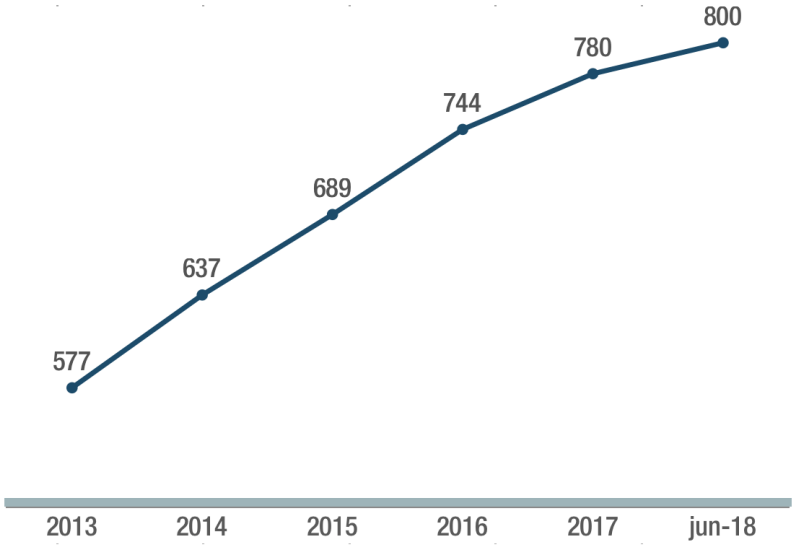
Graphic 4. Number of banking agents' modules and municipal coverage 2010 – 2018



With regard of the first intermediate result, we can observe that the municipal coverage of agents has grown annually, reaching 71% of the total by June 2018. Every year, more municipalities have access to financial services, where before didn't. The municipal coverage of branches has remained constant in the last five years, even slightly decreased, that is, that banks have not open new branches in municipalities where there were none.

Nevertheless, banking agents have taken on them to do such labor, as we can see in the following graphic where municipalities, of such group, with no branches are compared with municipalities employing agents. Currently, agents provide banking services to 800 municipalities where there is no presence of branches, 223 new municipalities in the last five years. Even so, there are still 716 municipalities with no access to banking services.

Graphic 5. Number of municipalities with no bank branches and with banking agent



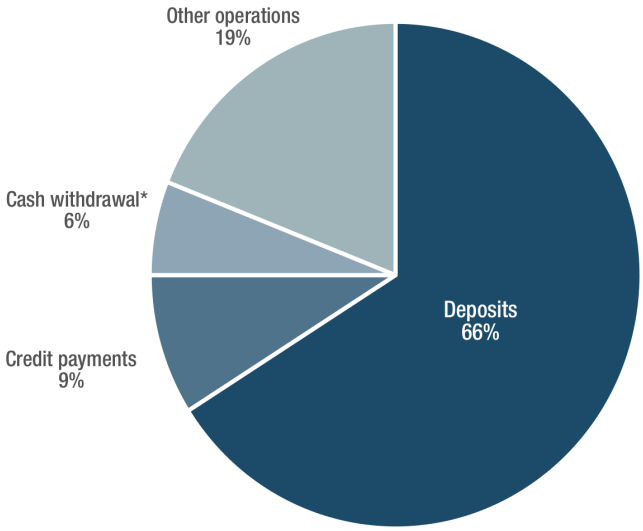
Banking agents are able to offer different financial operations. The most employed operation as to June of 2018 are deposits to accounts with 66% of the total amount of operations, followed by credit payments and cash withdrawals.

Both, the first and second, have had an exponential growth in the last months, turning out to be the most popular operations among banking agents.

Worth mentioning, that within the category of Other Operations[10] we can find the dollar purchase operation, which is counted in the total of operations, but is not analyzed since it belongs to exchange agents and also is not considered as a financial inclusion variable. Without considering the purchase of dollars, the other three operations cover more than 80% of all total operations, and, consequently, are the ones that later we will be analyzing.

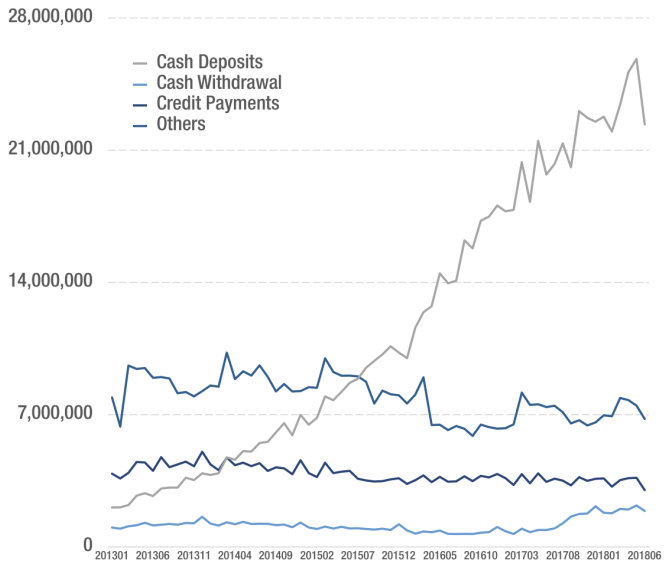
10 Includes payment of checks, payment of services, status of funds, balance inquiries and operations in dollars.

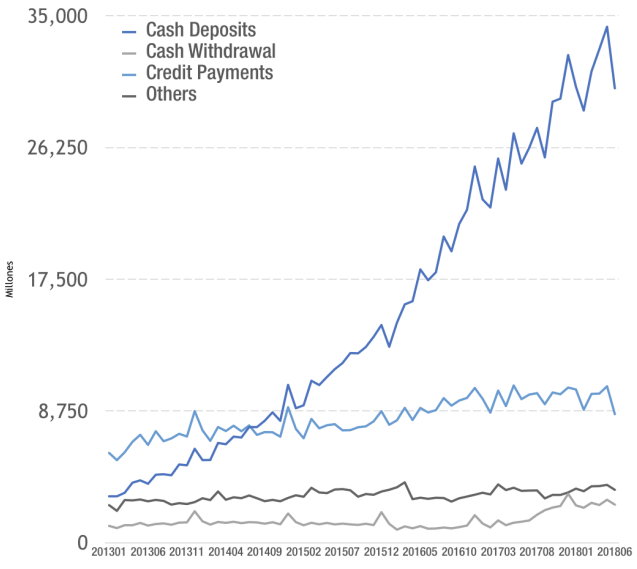
Graphic 6. Principal operations made by agents (June 2018)



In order to measure the second intermediate result, in Graphic 7 we observe the evolution of the most important operations made by banking agents. More than 21 million cash deposit operations are made monthly, amounting more than $30,000 million pesos. Cash deposits have grown at an average annual rate of 55% in the last five years. Recently, an increase in the number and amount of cash withdrawals is also observed, as well as in the amount of credit payments.

Graphic 7. Tendency of the amount and number of principal operations through banking agents





With these measurements, we may conclude that clearly there is a positive intermediate result in respect to the usage of banking agents as an alternative banking channel.

Considering the grouping matrix defined above, we are able to separate municipalities that have an agent from those that don't. In the following tables we can see how municipalities are found under this classification up to June of 2018.
In the following tables we can see that the smallest municipalities, and with a greater social lag, don't have presence of banking agents. On the contrary, we can see that there aren't semi-metropolis or metropolis municipalities without banking agents, and that there is only one urban municipality with very high social lag that has no banking agent. All other municipalities already have at least one banking access point. Finally, we can observe that there are 134 municipalities with low and very low social lag that may be potential candidates for the opening of a banking agent.

Table 8. Matrix of municipalities with and without an agent

With Banking Agent	Rural	In transition	Semi-urban	Urban	Semi-metropolis	Metropolis	Total
Very High	8	19	24	3			54
High	34	83	125	30			272
Medium	36	128	210	65			439
Low	67	161	255	153	8		644
Very Low	23	48	73	106	63	12	325
Total	168	439	687	357	71	12	1,734

Without Banking Agent	Rural	In transition	Semi-urban	Urban	Total
Very High	68	37	15	1	121
High	211	67	17		295
Medium	130	36	9		175
Low	76	37	4		117
Very Low	9	7			16
Total general	494	184	45	1	724

5. APPLIED MODEL

In this section we analyze the final impact of agents in the three variables of financial inclusion. According to chapter three, first we will find the propensity index, then we will select the control group and the treatment group and finally we will calculate growth rates of the variables for their measurement and comparison.

a) Matching model by propensity score

For this matter, the socioeconomic characteristics of each municipality were associated therewith – taken from the CONEVAL and CONAPO databases and from the financial infrastructure of the CNBV in order to obtain the propensity index.
In addition, as we explained before, we rule out from the analysis semi-metropolis and metropolis municipalities since they serve no help to the adjustment of the model as they don't contain municipalities without agents and consequently they didn't match a pair. With this, we reach a base of 2,374 municipalities up to May 2018, of which 1,648 already have banking agents. The chosen variables were the following:

Table 9. Variables used for the Logit model

Variable	Description of the variables
N_POS	Number of point of sales terminals.
N_ATMs	Number of ATMs.
GRS	Social lag rank: Very high, High, Medium, Low and Very low.
TM	Type of municipality: Rural, In transition, Semi urban, Urban, Semi metropoli, Metropolis.
P02SM	Percentage of population earning less than two minimum wages.

The specification of the logistic model is as follows:

$$P[Agent = 1 \mid N_{POS}, N_{ATMs}, GRS, TM, P02SM] = \frac{1}{1+e(-\beta_0-\beta_1*N\_POS-\beta_2*N\_ATMs-\beta_3*PO2SM-\beta_i*GRS-\beta_j*TM)}$$

The goal is to find the coefficients:

$$\beta_1, \beta_2, \beta_i, \beta_j ;$$

$$for\ i=3,\ldots,(n-1+2)$$

$$j=(n-1+2)+1,\ldots,(m-1)+(n-1+2)$$

where m and n are the number of factors that take the categorical variables

The estimations for categorical variables are for each one of its factors, therefore dichotomous variables will be generated, where each possible result of the variable will be codified with 1 if it has, and 0 if doesn't have, leaving one factor as pivot.

Table 10. Logit model results

Dependent variable: having banking agent	
Number_ATMs	0.40130***
	(0.10694)
Number_POS	0.07414***
	(0.01637)
PO2SM	-0.00751
	(0.00499)
SL Low	0.81953***
	(0.19755)
SL Medium	0.50136***
	(0.16476)
SL Very high	-0.74116***
	(0.22584)
SL Very low	1.27750***
	(0.38463)
TM Rural	-1.55850***
	(0.14582)
TM Semi urban	1.10395***
	(0.20741)
TM Urban	1.71609
	(1.07894)
Constant	0.41929
	(0.37485)
Observations	2,374
Log. Probability	-773.53080
Akaike Inf. Crit.	1,569.06200
Note:	*p<0.1; **p<0.05; ***p<0.01

From this first result, we can analyze the signs of the variables, for example, the number of ATMs has an important and direct relation with the presence of agents. For the Social Lag Rank, the model set as pivot the "high" category, so, with respect of high municipalities, the very high municipalities present an opposed relation. Namely, that in the municipalities with very high social lag is less probable to find agents with regard to those of high social lag. Equally, the model took as pivot the category "transition municipalities" so, with respect to these, rural municipalities present an inverse relation with the presence of a banking agent. Instead, semi-urban and urban municipalities are more likely to have the presence of an agent with respect of those in transition.

Nevertheless, the PO2SM variable is not significant, the same as the urban municipality type variable since it has only one municipality in the group, so to give an interpretation is no valid.

The coefficients of the regression are found in terms of the probability logarithm, therefore, in order to interpret the coefficients in a simpler way, the logarithm is eliminated by elevating e, then we calculate the odd's ratio of the variables as it's shown in the Annex 1. The odd's ratio results from dividing the probability of having an agent with the probability of not having one. This means, how probable is success (having agents) than failure (not having agents) in the indicated variable. If the result is equal to one, then the variable is indifferent to the result, as it is observed in the PO2SM variable (employed population with income of up to 2 minimum wages). The results of the model run accord with what we expected, for example, municipalities with low social lag are 1.26 times more likely to have agents compared to high social lag municipalities.

Compared with a municipality in transition, a semi-urban municipality is 2.01 times more likely to have banking agents.

In this form, predictions were made through the Logit model in order to verify how many correct municipalities the model got right. As we can see in the table below, of 1,648 municipalities having agents, the model predicted 1,454 (88%) and of the 726 municipalities without agents, the model got 563 (77%), therefore the accuracy ratio was 84.96%. Statistical and significant tests are found in the Annex 2.

Table 11. Confusion matrix and accuracy ratio

Real	Prediction		Precision: 84.96%
	Banking Agent = 0	Banking Agent = 1	
Banking Agent = 0	563	163	
Banking Agent = 1	194	1,454	

b) Counterfactual Estimation

In this phase, we already have municipalities with their own PS, then, the K-nearest neighbor method is employed to estimate our counterfactual. This algorithm consists in assigning the most similar municipality to each treatment municipality with respect to the Propensity Index. As we saw before:

$$min\left|\lambda_T - \lambda_C\right| \leq Caliper$$

where λ_T *is the IP of the treatment group and* λ_C *is the IP of the control group*

The matching was made 1:1 (assigning a municipality to each observation of the treatment group) with a caliper of 0.002, that is, we want the Control Group to be created with those municipalities that differ no more than 0.002 in their Propensity Index. For the selection of the caliper, other measures were taken, but the most accurate, in terms of number of municipalities on groups, was the chosen one. The results of matching are presented in Annex 3.

From a total of 1,648 municipalities with agents, 306 were matched. That means, that we obtained a total of 612 municipalities, where 306 belong to the Treatment Group and 306 to the Control Group. It is required that the groups may be as homogenous as possible, so two tests were made to evaluate balance: absolute difference of averages in each one of the variables entered in the model, as well as the non-parametric hypothesis test in order to have a more solid ground (See Annex 4).

In order to have a better counterfactual, it was verified that the municipalities from the Control Group did not have agents during the time of the study, and from there, 24 municipalities were detected that have had agents in previous period, therefore we proceed to rule them out so that they wouldn't influence with information when they had agents. In the same manner, we detected a municipality where the number of reported accounts in some months exceeded considerably the data and altered the calculation of the algorithm, so we decided to leave it outside the analysis. Thus, we stay with a Control Group and Treatment Group of 281 municipalities that we will use to measure the impact in the selected variables. But first, we present the results of the municipalities' matrix from both groups.

Table 12. Municipalities Matrix of the Control Group and the Treatment Group

Treatmeant Group	Rural	In transition	Semi-urban	Total
Very High	8	15	7	30
High	31	45	23	99
Medium	32	34	6	72
Low	41	21	3	65
Very Low	13	1	1	15
Total	125	116	40	281

Control Group	Rural	In transition	Semi-urban	Total
Very High	8	16	12	36
High	28	53	17	98
Medium	32	27	6	65
Low	39	31	4	74
Very Low	4	4		8
Total	111	131	39	281

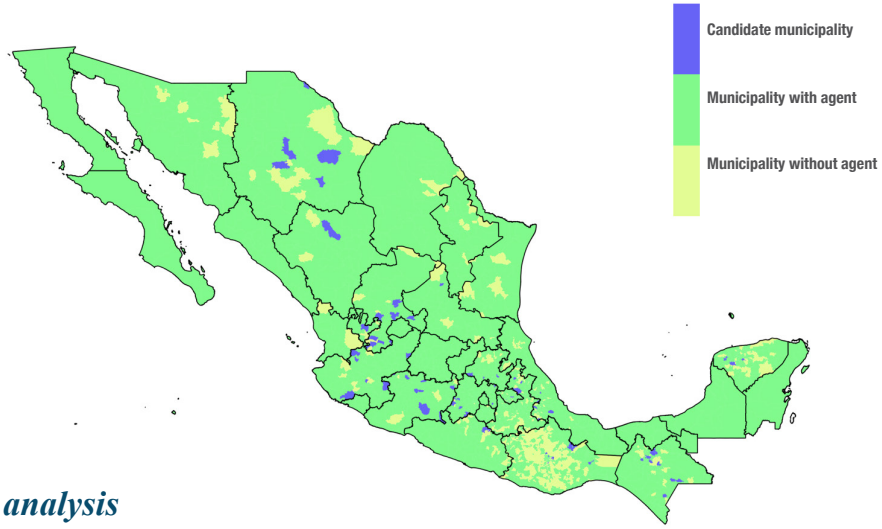
Before the estimation of impact, we chose municipalities which propensity index was higher than 0.7 and that they appear in the control group (without agents) as ideal candidates for the opening of a banking agent in the site. These municipalities have similar socioeconomic and financial characteristics to municipalities where currently there is presence of agents. An example of the selected municipalities can be seen in the next table and the complete list is in Annex 5.

Table 13. List of candidate municipalities to have a banking agent

Municipality code	State	Municipality	Total Population	Type of municipality	Social Lag Rank	ATMs	POS	% Pop. Income below 2 MS	Propensity Score
484202430001	Oaxaca	San Martin Tilcajete	1,821	Rural	Medium	0	84	48.17	0.994663
484320500001	Zacatecas	Vetagrande	10,228	In transition	Very low	8	2	42.82	0.991284
484080540001	Chihuahua	Riva Palacio	8,631	In transition	Medium	1	44	24.14	0.987903
484205460001	Oaxaca	Teotitlan del Valle	5,707	In transition	Medium	0	47	62.53	0.980836
484130440001	Hidalgo	Nopala de Villagran	16,202	Semi-urban	Medium	2	20	59.57	0.979417
484141120001	Jalisco	Valle de Juarez	6,363	In transition	Low	5	8	36.13	0.972535
484320450001	Zacatecas	Tepechitlan	8,508	In transition	Low	1	27	53.95	0.962187
484100110001	Durango	Inde	5,678	In transition	Low	6	0	59.17	0.960915
484160970001	Michoacan	Turicato	32,269	Semi-urban	Medium	1	11	54.96	0.944201
484320010001	Zacatecas	Apozol	6,575	In transition	Low	2	15	66.67	0.934176

States such as Zacatecas, Jalisco and Michoacán stand out, where there are several municipalities on the list. Within the list, three correspond to rural municipalities, 41 in transition and 28 semi-urban. Of those, eight municipalities do not currently have any type of financial infrastructure.

Map 14. Map with candidate municipalities



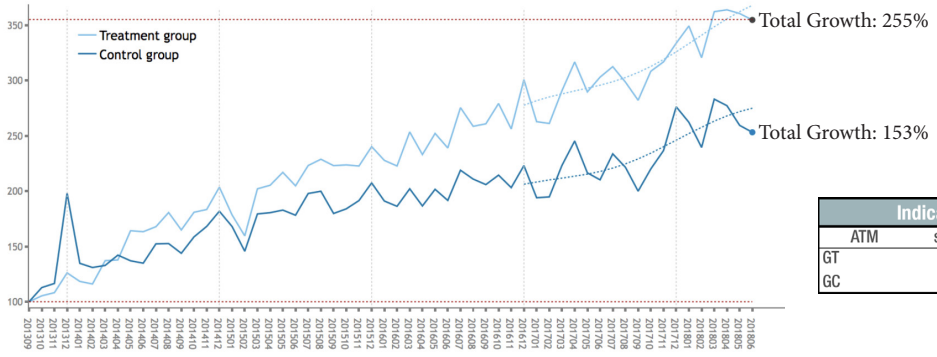
c) Final impact analysis

With both groups defined, meeting the statistical requirements, we indexed to 100 the demographic indicator of the three variables in order to realize a growth rate analysis and measure impact. We observe a clear effect in favor of the TG in transactions; however, the effect is not clear in the number of accounts. In the following graphics we show the results for the Control Group and the Treatment Group.

ATM Transactions:

In Graphic 15 we observe the tendency of transactions in ATMs in both groups, where the TG grew more than double that the CG. In the case of the TG, the demographic indicator in September 2013 was of 774 transactions for every 10,000 adults and in June it reached 1,457, growing 88% during the time of the study. For the CG, the demographic indicator begins in 793 and reaches 1,129 with a 42% increase. Within the TG, municipalities with medium social lag (72 municipalities) were the ones that grew to higher rate, accumulating 127% in the period. In municipalities of the CG, the ones with low and very low social lag grew at a higher rate.

Graphic 15. ATMs Transactions Growth in CG and TG

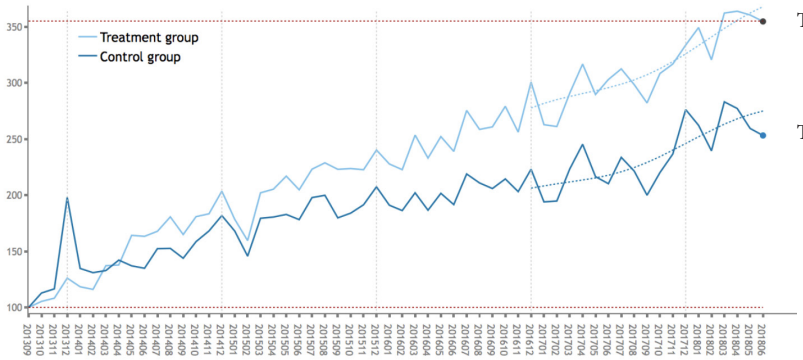


Indicator per 10,000 adults			
ATM	sep-13	jun-18	Difference
GT	774	1,457	683
GC	793	1,129	336

Transactions in POS terminals:

The growth of the demographic indicator of transactions in point of sale terminals was significant for both groups, but the TG grew at a higher pace that the CG, passing from 136 transactions for every 10,000 adults to 481 in June 2018 (255%). Equally, the CG started with 137 transactions and reach 346 at the end of the period (153%). Particularly, the three semi-urban municipalities with low social lag of the TG grew in a significant manner, passing from an indicator of 51 transactions to 2,211 for every 10,000 adults. Within the CG, worth highlighting the 32 medium social lag municipalities, which pass from 282 transactions to 1,880 for every 10,000 adults, thus representing a 392% increase during the time of the study.

Graphic 16. POS Transactions Growth in CG and TG



Total Growth: 255%

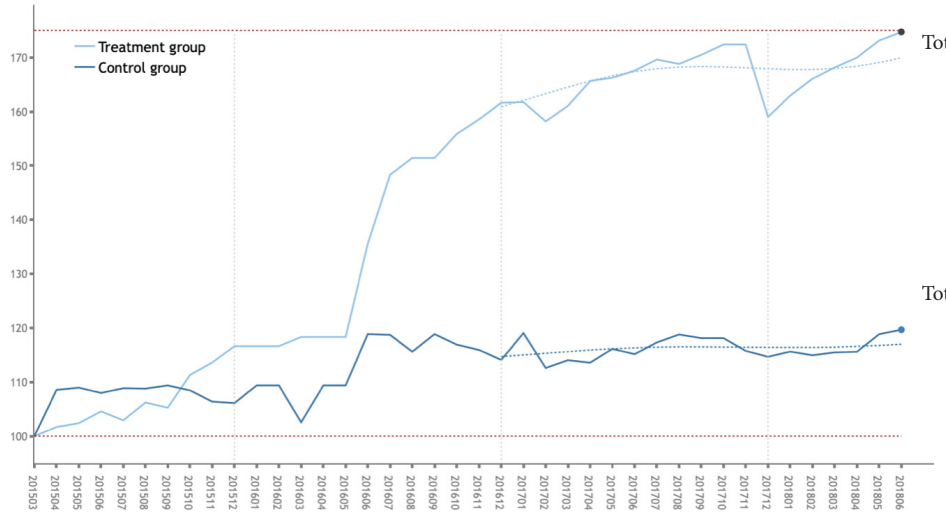
Total Growth: 153%

Indicator per 10,000 adults			
POS	Sep-13	Jun-18	Difference
GT	136	481	345
GC	137	346	209

Number of debit accounts:

The demographic indicator of the number of debit accounts presents again the TG with a higher rate than the CG. We can see how the TG has an upward trend while the CG is practically constant in the last months. The CG starts with an indicator of 119 and the TG with one of 358. If we consider the absolute growth in the number of accounts per 10,000 adults, the CG ends with 143 (this is an increase of 24 accounts per 10,000 adults) while the TG ends with 625 (267 more accounts).

Graphic 17. Debit Accounts Growth in CG and TG



Total Growth: 75%

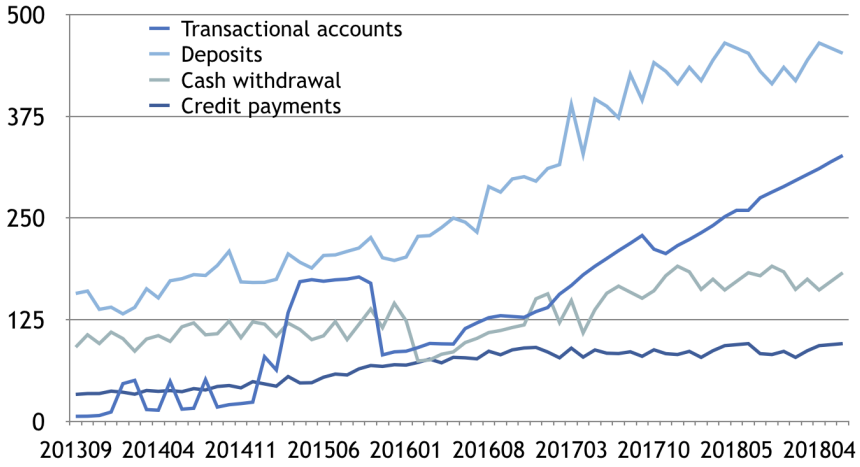
Total Growth: 20%

Indicator per 10,000 adults			
Savings acc	sep-13	jun-18	Difference
GT	358	625	267
GC	119	143	24

Additional Impact:

For the treatment group, we have to consider and add to the final impact the operations derived from the opening of banking agents in those municipalities. For example, if we consider cash deposits, the treatment group do 450 transactions per 10,000 adults each month, additionally, transactions related to credit payments and cash withdrawals. It is important to highlight that in the graphic we are including the transactional accounts (level N2, low risk) which were opened only through banking agents and have had an important growth. As of June 2018 there were almost 60,000 accounts in the TG which represents 326 accounts per 10,000 adults. If we compare this number with the total account indicator of 625, we see than more than half of the indicator is due to accounts level 2. That means that the growth we observe in these municipalities belongs to accounts level 2.

Graphic 18. Demographic indicator of operations made through banking agents in the TG



As we saw previously, cash deposits have had an accelerated growth in the last months. In this case, the number of transactions made by banking agents tripled. The credits' payments operations also had a significant growth in the TG, accumulating a 180% growth from September 2013 to June 2018. The amount of credit paid also grew reaching an average of $3,750 in the last months. From the previous analysis we may conclude that there was a positive impact in municipalities with a presence of banking agents according to transaction numbers. The total impact was 1,215 transactions for every 10,000 adults, which are divided in 347 more transactions in an ATM, 136 more transactions in POS terminals and 732 transactions in banking agents.

In relation to deposit accounts, a clear difference was seen in growth rates in both groups of municipalities when comparing March 2015 with June 2018. This effect is mainly due to the Banamex Transfer accounts, which have had an important effect in municipalities with limited access to financial services.

Finally, there is another important impact; it was observed that there were level 2 accounts in the control group, that is, in municipalities without a banking agent, which correspond to the Transfer account that can be open in the Oxxo stores. In the absence of agent presence or in this case of Oxxo stores, it can be deduced that there is a significant number of people who move from their municipality without an agent to another municipality where the nearest Oxxo is located to open an account. This effect is doubly positive for financial inclusion, since in addition to opening new accounts in the municipalities with banking agents, people in municipalities without agents are been attract to open accounts.

6. CONCLUSIONS

The measurement of final impact is not an easy task since most of the government programs do not have a control group to compare them with. Is this study it was proposed a method to estimate a contra factual that could be used as control group to be able to calculate the impact. Under the change theory conceptual frame, the impact study was divided in two parts. The first one corresponds to the measurement of intermediate results that can be seen in terms of growth in number of operations and greater number of municipalities with coverage. In the last five years, the number of modules grew 60%; municipalities with coverage grew from 60% to 71%; and the total number of operations increased at an average annual rate of 17%. For example, banking agents have covered 800 municipalities where there is no presence of branches, thus creating the possibility of performing many operations that before were impossible to make, or that an ATM didn't cover. Even more, we can clearly notice how the strategy of banks now is to lean on more to the banking agents' network and therefore open fewer branches. In June 2018, the total number of branches was 12,737 compared with 12,817 in July 2014.

The trust generated, has been growing and every day more businesses join the great banking agent network in Mexico. We clearly see how deposits to accounts and payments of credits are the most important operations made through this channel with a steep growth rate. The possibility to analyze such time series in a more detailed manner still remains open, so to make forecasts and/or determine municipalities with development potential or in early phase of financial inclusion that may be useful for financial institutions. The number of withdrawals has not presented a growing of such number mainly because agents are using the cash back practice.

Regarding the final impact, the calculation of the counterfactual was made, and two statistically equal groups were obtained in terms of their socio-economic characteristics and their financial infrastructure. To verify if there was an impact on financial inclusion, a calculation of the growth rates was made to compare them between both groups in three variables of financial inclusion: transactions in ATMs, transactions in POS and number of savings accounts.

We can observe a significant difference in the number of transactions performed in ATMs and POS terminals. In the first ones, municipalities with banking agents grew in an average annual rate 3 times more than in the municipalities without agents (11% vs 4%). In the POS transactions, the rates were 21% annual average for the treated group compared versus a 17% in the control group. This means, that in the municipalities with agents, the growing rate in both type of transactions is bigger than in the municipalities with no presence. Similarly, in deposit accounts, the growth in the group with agents was 19% compared to 3% in municipalities without agents. The growth in accounts was mainly due to low risk level 2 accounts, since when they were eliminated from the group with agents, there was practically no growth.

Clear opportunities of growth are observed both, in the municipal coverage and in operations associated with cash deposits and payments of credits. Derived from the study, we were able to extract a list of 72 municipalities that are good candidates to have banking agents since they fulfill certain socioeconomic and financial conditions. We estimate that on these municipalities the presence of banking agents will increase the growth rate of transactions in ATMs as well as in POS.

With the impact measurement it was possible to evaluate that the regulatory change has increased the use of banking services giving important information for every part involved.
In the government, it is recommended to continue measuring impact to be able to detect if some regulation is not helping financial institutions to reach the target of increasing the financial inclusion. For example, in the account opening it might be important to analyze why banks are not promoting this product in the agent channel, we can only see Banamex and Oxxo with the Saldazo savings account

For the banks it represents an opportunity to increase operation efficiency analyzing where is an optimal place to open branches or ATMs according to agents networking grow. Besides, in the case of opening accounts there is a high potential market that it is possible to develop with new products. Finally, the list of candidate municipalities gives a selection where the probability of people using banking products is high.

Stores have gained benefits thanks to the increase in the number of operations in two ways. First, because of the commissions for each transaction agreed with the bank, and second, a bigger number of people in their store can represent more sales for their business. The measurement of the impact shows how people is using this channel more often to perform banking transactions, which means grater income for businesses.

Banking services users now have more than 48,000 access points to perform banking operations, with less access barriers, this means proximity, security and for some people a better service with more confidence.

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ANNEXES

Annex 1. Odds ratio

Odd's Ratio			
	Estimate	*OR*	*Impact*
(Intercept)	0.41930	1.52090	52.09
Number_ATMs	0.40130	1.49380	49.38
Number_POS	0.07410	1.07700	7.70
PO2SM	-0.00750	0.99250	-0.75
RS Low	0.81950	2.26940	126.94
RS Medium	0.50140	1.65100	65.10
RS Very High	-0.74120	0.47660	-52.34
RS Very Low	1.27750	3.58770	258.77
TM Rural	-1.55850	0.21050	-78.95
TM Semi urban	1.10390	3.01600	201.60
TM Urban	1.71610	5.56270	456.27

Annex 2. Logit regression validity tests

Validity tests

1) Wald test:

Coefficients are estimations, therefore not always precise. The logistic model chooses the most probable estimation from a distribution of coefficient probabilities. How disperse is the distribution of coefficients? That is indicated by the standard error; namely, greater values in this indicator are a sign of greater dispersion in estimations. Hence, the Wald contrast was utilized to test that estimations are significantly distinct from 0, that is:

$$H_0: \beta_k = 0$$

$$H_a: \beta_k \neq 0$$

The test will allow us to know if the independent variables have a significant effect on the response variable. Looking at the Logit regression (table 10), we notice that the p-value is < 5% so the null hypothesis is rejected at a 95% confidence.

2) Confidence interval:

Additionally, in the following table we show the confidence interval of estimations at 95%, where clearly never reaches 0 for most of the variables, thus strengthening the Wald test. However, as we saw before, the PO2SM and the urban municipality type crosses the zero, hence the validity that they are not significant for the study is still valid.

Confidence Intervals		
	2.5%	97.5%
(Intercept)	-0.316	1.155
Number_ATMs	0.202	0.619
Number_POS	0.044	0.108
PO2SM	-0.017	0.002
RS Low	0.434	1.209
RS Medium	0.179	0.825
RS Very high	-1.191	-0.304
RS Very low	0.535	2.048
TM Rural	-1.847	-1.275
TM Semi urban	0.704	1.518
TM Urban	-0.017	4.656

3) Collinearity of variables

The following diagnostic consists in evaluation the collinearity of variables employed in the model. When there is a strong linear relation between two predictor variables, the precision of estimated coefficients is reduced, that means that the variance increases notoriously. The inflation factor of the generalized variance (GVIF) proposed by Fox and Monnette (1992) was employed for the evaluation of the collinearity. This statistic is calculated as follows:

$$VIF = \frac{1}{1 - R^2_k} \quad : \text{where } R^2_k \text{ is the multiple correlation coefficient}$$

Therefore, the higher the multiple correlation of the variable results in respect to the other predictors, then the more chance that the inflation factor distances from 1. As well, the closer the GVIF results to 1, the more chance that the correlation coefficient ends up being almost null.

The following table shows the inflation factor results –where values near to 1 can be seen–, therefore we discarded collinearity problems.

Colinearity			
	GVIF	Df	GVIF^(1/(2*Df))
Number_ATMs	1.296	1	1.138
Number_POS	1.434	1	1.198
PO2SM	1.569	1	1.253
Social Lag Rank.	1.742	4	1.072
Type of municipality	1.457	3	1.065

Annex 3. Matching results

Summary matching	
Matching Data:	
Number of treated obs.:	1648
Number of matched treated obs.:	306
Number of untreated obs.:	726
Number of matched untreated obs.:	306
Number of total matched obs.:	612
Number of not matched obs.:	1762
Number of matching sets:	306
Number of incomplete matching sets:	0
Matching by:	ps score
Caliper size:	0.002
Ratio:	1

Annex 4. K-nearest neighbor validity tests

Absolute difference of averages
The absolute difference of averages consists of: μ

$$\left|\mu_{XT} - \mu_{XC}\right| \approx 0$$

where μ_{XT} is the average og variable X for the treatment group
And μ_{XC} is the average og variable X for the control group

If this difference comes close to 0, this indicates that the groups are similar in the analyzed variable, therefore resulting in good balance in the overlapping. The following table shows this descriptive analysis, where groups are clearly similar since the difference is close to 0. For the case of the variable PO2SM (employed population with income of up to 2 minimum wages), the number of ATMs and the number of POS terminals, being a numeric character, will differ slightly in their averages, but it should not be too much. Next, the balance of the groups is shown:

Balance Test			
Variable	*Means TG*	*Means CG*	*Diff Abs*
Number_ATMs	0.399	0.327	0.072
Number_POS	2.569	2.428	0.141
PO2SM	61.823	60.587	1.236
TM Rural	0.415	0.379	0.036
TM Semi urban	0.160	0.144	0.016
TM Urban	0.003	0.003	0.000
RS Low	0.232	0.268	0.036
RS Medium	0.255	0.242	0.013
RS Very High	0.111	0.131	0.020
RS Very Low	0.049	0.036	0.013

The hypothesis test used to verify that both groups are from the same populations is the Mann–Whitney U test that contrasts the following:

$$H_0: n_1 = n_2$$

$$H_a: n_1 \neq n_2$$

What this test aspires to achieve is to identify if both populations, in this case, if the treatment group and the control group, come from the same population in the chosen variables, that is, if they report similar values. This non-parametric test was used because there is no certainty of the probability distribution of variables. If the test shows a p-value greater than the significance set to be accepted, then the null hypothesis is rejected and we conclude that the groups are homogenous.

The following table shows the test results:

Wilcoxon rank sum test

Variable	*p value*	*Significance*	*Decision*
PO2SM	0.37	0.05	Accept H_0
Number_POS	0.00	0.05	Reject H_0
Number_ATMs	0.02	0.05	Reject H_0
Rural	0.36	0.05	Accept H_0
Semi-Urban	0.57	0.05	Accept H_0
Urban	1.00	0.05	Accept H_0
Low	0.30	0.05	Accept H_0
Medium	0.70	0.05	Accept H_0
Very High	0.45	0.05	Accept H_0
Very Low	0.42	0.05	Accept H_0

Annex 5. List of potential municipalities to have banking agents with PS > 70%. (72 municipalities)

Municipality code	Estate	Municipality	Total Population	Type of municipality	Social Lag Rank	ATMs	POS terminals	% Population with income < 2 SM	Propensity Index
484070290001	Chiapas	Chicoasen	5,274	In transition	Low	2	3	44.15	0.873492
484070470001	Chiapas	Jitotol	21,608	Semi-urban	High	1	6	72.06	0.861534
484070410001	Chiapas	Independencia, La	46,741	Semi-urban	High	1	2	72.43	0.821826
484070110001	Chiapas	Bella Vista	21,191	Semi-urban	High	1	0	68.79	0.803424
484070760001	Chiapas	Sabanilla	27,519	Semi-urban	High	1	0	89.33	0.777914
484070390001	Chiapas	Huitiupan	25,130	Semi-urban	High	0	2	66.98	0.762857
484070930001	Chiapas	Tenejapa	43,228	Semi-urban	High	0	0	81.4	0.713373
484070490001	Chiapas	Larrainzar	22,665	Semi-urban	High	0	0	83.83	0.709626
484080540001	Chihuahua	Riva Palacio	8,631	In transition	Medium	1	44	24.14	0.987903
484080580001	Chihuahua	San Francisco de Conchos	3,326	Rural	Very low	5	1	35.38	0.875791
484080380001	Chihuahua	Julimes	5,496	In transition	Low	0	11	38.45	0.853898
484080180001	Chihuahua	Cusihuiriachi	6,081	In transition	Low	0	9	43.81	0.828775
484080530001	Chihuahua	Praxedis G. Guerrero	3,867	Rural	Low	1	16	54.75	0.701939
484100110001	Durango	Inde	5,678	In transition	Low	6	0	59.17	0.960915
484120080001	Guerrero	Atenango del Rio	8,855	In transition	High	2	4	72.39	0.726052
484130440001	Hidalgo	Nopala de Villagran	16,202	Semi-urban	Medium	2	20	59.57	0.979417
484130450001	Hidalgo	Omitlan de Juarez	10,067	In transition	Low	0	7	55.13	0.793093
484130650001	Hidalgo	Tetepango	12,262	In transition	Low	0	5	40.5	0.786724
484141120001	Jalisco	Valle de Juarez	6,363	In transition	Low	5	8	36.13	0.972535
484140270001	Jalisco	Cuautitlan de Garcia Barragan	18,422	Semi-urban	High	2	2	44.53	0.894695
484140400001	Jalisco	Hostotipaquillo	11,914	In transition	Low	2	1	49.41	0.851247
484140070001	Jalisco	San Juanito de Escobedo	9,422	In transition	Low	1	5	38.91	0.847939
484140720001	Jalisco	San Diego de Alejandria	7,221	In transition	Low	0	7	38.66	0.812659
484141150001	Jalisco	Villa Guerrero	5,988	In transition	Medium	1	4	43.48	0.784469
484140690001	Jalisco	Quitupan	9,108	In transition	Medium	1	0	42.99	0.73087
484140040001	Jalisco	Amacueca	6,053	In transition	Low	0	0	40.39	0.718177
484150320001	México	Donato Guerra	38,477	Semi-urban	High	2	6	49.46	0.916762
484151170001	México	Zacualpan	17,075	Semi-urban	High	2	0	52.98	0.873015
484150780001	México	Santo Tomas	10,027	In transition	Low	1	1	47.19	0.795726
484150610001	México	Nopaltepec	10,006	In transition	Low	0	3	43.62	0.7565
484150170001	México	Ayapango	11,454	In transition	Low	0	3	47.12	0.751624
484150770001	México	San Simon de Guerrero	7,275	In transition	Medium	1	0	49.37	0.72134
484150660001	México	Otzoloapan	5,301	In transition	Medium	1	0	58.04	0.708063
484160970001	Michoacán	Turicato	32,269	Semi-urban	Medium	1	11	54.96	0.944201
484160280001	Michoacán	Churintzio	5,520	In transition	Low	3	6	58.88	0.920214
484160800001	Michoacán	Senguio	20,153	Semi-urban	Medium	1	3	50.86	0.906046
484160320001	Michoacán	Erongaricuaro	15,550	Semi-urban	Medium	0	7	64.01	0.88723
484160770001	Michoacán	San Lucas	19,238	Semi-urban	Medium	0	5	58.28	0.876265
484160110001	Michoacán	Briseñas	11,315	In transition	Low	0	12	44.36	0.85757
484160540001	Michoacán	Morelos	7,895	In transition	Low	1	6	65.13	0.831419
484161000001	Michoacán	Tzintzuntzan	14,654	In transition	Medium	0	11	61.67	0.781244
484202430001	Oaxaca	San Martin Tilcajete	1,821	Rural	Medium	0	84	48.17	0.994663
484205460001	Oaxaca	Teotitlan del Valle	5,707	In transition	Medium	0	47	62.53	0.980836
484204270001	Oaxaca	Santa Maria Petapa	16,707	Semi-urban	Medium	1	1	65.56	0.881592

484204270001	Oaxaca	Santa Maria Petapa	16,707	Semi-urban	Medium	1	1	65.56	0.881592
484200910001	Oaxaca	San Andres Huayapam	5,284	In transition	Very low	0	4	24.37	0.859397
484201780001	Oaxaca	San Juan Bautista Guelache	7,350	In transition	Low	0	2	36.9	0.752115
484202050001	Oaxaca	San Juan Lalana	18,027	Semi-urban	High	0	0	68.75	0.732401
484210500001	Puebla	Chichiquila	25,405	Semi-urban	High	0	0	61.13	0.743468
484210830001	Puebla	Ixtacamaxtitlan	26,161	Semi-urban	High	0	0	66.52	0.735671
484210780001	Puebla	Huitzilan de Serdan	15,534	Semi-urban	High	0	2	90.55	0.729358
484210490001	Puebla	Chiconcuautla	17,425	Semi-urban	High	0	0	75.7	0.722046
484240480001	San Luis Potosí	Villa de la Paz	5,728	In transition	Low	1	4	43.65	0.833243
484290380001	Tlaxcala	Tzompantepec	16,930	Semi-urban	Low	0	8	49.97	0.928277
484290490001	Tlaxcala	San Damian Texoloc	5,711	In transition	Very low	0	2	42.01	0.821936
484290350001	Tlaxcala	Tocatlan	6,336	In transition	Low	1	0	49.42	0.780555
484290590001	Tlaxcala	Santa Cruz Quilehtla	7,254	In transition	Low	0	2	69.37	0.70392
484301820001	Veracruz	Tlalnelhuayocan	18,461	Semi-urban	Low	0	1	50.69	0.884541
484301270001	Veracruz	Perla, La	26,703	Semi-urban	High	1	1	82.52	0.798805
484301590001	Veracruz	Tehuipango	25,581	Semi-urban	Very high	2	2	73.68	0.76486
484300310001	Veracruz	Carrillo Puerto	18,045	Semi-urban	High	0	0	81.04	0.713925
484310630001	Yucatán	Samahil	5,491	In transition	Low	1	0	67.22	0.756798
484310010001	Yucatán	Abala	6,973	In transition	Medium	0	8	53.61	0.752327
484310340001	Yucatán	Hocaba	6,532	In transition	Medium	1	0	61.56	0.702568
484320500001	Zacatecas	Vetagrande	10,228	In transition	Very low	8	2	42.82	0.991284
484320450001	Zacatecas	Tepechitlan	8,508	In transition	Low	1	27	53.95	0.962187
484320010001	Zacatecas	Apozol	6,575	In transition	Low	2	15	66.67	0.934176
484320470001	Zacatecas	Teul de Gonzalez Ortega	5,659	In transition	Very low	1	10	44.32	0.9246
484320350001	Zacatecas	Noria de angeles	17,370	Semi-urban	Low	1	1	54.87	0.917288
484320370001	Zacatecas	Panuco	18,448	Semi-urban	Low	0	1	50.18	0.884932
484320460001	Zacatecas	Tepetongo	7,086	In transition	Low	1	3	62.78	0.800746
484320020001	Zacatecas	Apulco	5,228	In transition	Low	0	5	48.32	0.776703
484320120001	Zacatecas	Genaro Codina	8,659	In transition	Medium	1	0	53.07	0.715719

Proyección 3.60 (Proyección Tres Sesenta, S. de R.L. de C.V.) is a company founded in 2013 under the Mexican laws. We provide Project Management services. Through the firm "DataLab 3.60" we provide Data analysis and consulting in different industries.
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