

Scientific  
Journal of  
**Applied  
Social and  
Clinical  
Science**

**CYBER FRAUD AND  
FINTECH, AN ADVANCE  
IN TECHNOLOGY WITH  
ECONOMIC IMPACT FOR  
THE USER**

---

*María Esther Carmona Guzmán*

Full-time professor of the Open Teaching System, PhD in Senior Management Member of “Corpo Académico UV-CA399 Challenges and Expectations of Organizations”, Mexico. Universidad Veracruzana  
Veracruz, Mexico  
<https://orcid.org/0009-0002-8824-6656>

*Susana Gallegos Cázares*

Full-time professor of the Open Teaching System, Doctorate in Legal, Administrative and Educational Sciences  
Member of the “UV-CA399 Academic Body Challenges and Expectations of Organizations”, Universidad Veracruzana Veracruz, Mexico  
<https://orcid.org/0009-0007-3078-6226>

*Elena Aguilar Canseco*

Full-time professor of the Open Teaching System, Doctorate in Legal, Administrative and Educational Sciences  
Member of the “UV-CA399 Academic Body Challenges and Expectations of Organizations”, Universidad Veracruzana Veracruz, Mexico  
<http://orcid.org/0009-0000-4751-9457>

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



***María del Pilar Enríquez Gómez***

Full-time professor of the Open Teaching System, Doctorate in Government and Public Administration

Member of the “UV-CA399 Academic Body Challenges and Expectations of Organizations”, Universidad Veracruzana Veracruz, Mexico

<https://orcid.org/0009-0004-8671-8108>

***Marisol Pérez Mugica***

Full-time professor at the Faculty of Accounting and Business, Doctorate in Legal, Administrative and Educational Sciences Collaborator of the UV-CA 399 Academic Body Challenges and Expectations of Organizations. Universidad Veracruzana Veracruz, Mexico

<https://orcid.org/0009-0004-8873-1250>

***Tania Beatriz Quintero Bastos***

Full-time Professor of the Faculty of Accounting and Business, Doctorate in Legal Sciences, Administrative Education. Member of the Academic Body UV-CA 399 Challenges and Expectations of Organizations. Universidad Veracruzana, Veracruz, Mexico.

<https://orcid.org/0009-0004-9255-6520>

***Rosendo Orduña Hernández***

Full-time Professor of the Faculty of Accounting and Business of the Universidad Veracruzana, Doctorate in Legal Sciences Member of the Academic Body UV-CA 399 Challenges and Expectations of Organizations. Universidad Veracruzana Veracruz, Mexico

<https://orcid.org/0000-0001-8465-3962>

***Arturo López Saldíña***

Professor at the Faculty of Accounting and Business. Doctor in Government and Public Administration

Collaborator of the Academic Body UV-CA 399 Challenges and Expectations of Organizations. Universidad Veracruzana Veracruz, Mexico

<https://orcid.org/0009-0000-3398-8260>

***Blanca Estela Grajales Briscon***

Professor by subject of the Open Teaching System, PhD in Senior Management Collaborator of “Corpo Académico UV-CA399 Challenges and Expectations of Organizations”, Mexico. Universidad Veracruzana Veracruz, Mexico

<https://orcid.org/0000-0001-9352-6914>

**Abstract:** In Mexico and in the world, globalization has required that the activities of both companies and individuals be carried out expressly, from sending an email, making purchase orders, requesting credits, making transfers, among others. Technological advances have been a high reference in all this progress with financial impact, which has led to a word that is very important for the financial world, Fintech, a tool that allows us to facilitate the aforementioned processes, this through the automation of financial services, both elementary and complex, that ultimately seek to achieve customer satisfaction, however, among all the virtues and facilities for daily life, there is a dark side that has been accentuated from the COVID-19 pandemic to date, Many people and companies, by using electronic mechanisms to expedite their processes, have been victims of financial fraud, which will be described and analyzed in order to put the population on alert.

**Keywords:** Globalization, cyber fraud, fintech.

## INTRODUCTION

The world has undergone a radical change since the digital era, positively impacting the financial sector through new technologies, these in turn achieved through innovation that the functions and processes derived from the financial economy were streamlined, resulting in the design of strategies and new business models both in the financial area and in the banking sector, offering competitive advantages in companies both focused on the financial field and in general in all companies that use these tools. As a result of the pandemic crisis, an intense activity of digital technology began in countless companies, both in economic, social, political and scientific sectors; This resulted in an increase in cyber financial fraud and also multiple attacks on banking operations, diverting financial resources and as a result of the health

emergency, all natural or legal persons were forced to use a large percentage of electronic media. and cybernetics in order to carry out financial operations which were habitually and commonly carried out in person. At first glance, the phrase fraud and deceit implies what would seem inconceivable, but today fraud is present in all societies.

Every day a greater amount of news related to attacks or cybercrimes appears in different media. It is estimated that 64% of the world's companies have experienced at least one cyber attack. (Bulao, 2021)

Globalization allowed the spread of digital and technological advances throughout the world and implies an excellent possibility and valuable opportunity to create innovative solutions, since then cyber fraud emerged as a result of the development of technology, which are scams that are used through the cybernetic network to carry out illegal transactions.

## FINTECH ELEMENTARY TECHNOLOGICAL AND FINANCIAL TOOLS FOR MODERNITY

In recent times, technology has acquired an important role in many sectors, including the financial sector. This refers to technological advances in the field of financial activities to expedite the completion of certain procedures, as well as to allow companies both those that are technology providers and users to broaden their horizons, managing to include more people in the scope. of your operations. Through various tools, the use of digital banking has been consolidated and strengthened, since it is integrated as a result of the combination of traditional banking and the Internet, providing banking services through web pages or mobile devices.

(Fintech Mexico, s.f.) is a nascent industry in which companies use technology to provide financial services in an efficient, agile,

and reliable manner. The word is formed from the contraction of the terms finance and technology in English.

The use of innovation and technological developments for the design, offer and provision of financial products and services, are those activities referring to the term Fintech which comes from the English words Finance and Technology. (National Stock Market Commission CNMV, s.f.)

It is necessary to keep the financial inclusion processes adapted to the new technology dynamic, which is why the link between Fintech and financial inclusion must be specified, which are broad and differentiable. That is why it is necessary to actively support all the financial inclusion processes adapted to the new technologies.

The Fintech (contraction of 'Finance' and 'Technology'), are a famous branch within innovation that proposes opportunities and challenges to the supply, demand and regulation of financial services. However, terms like Fintech (or BigTech, RegTech, InsurTech, among many others) are concepts from marketing and lack precise or standardized content. (Rojas, 2016)

For the apparent complexity of operation and user confidence, with great benefits come great challenges. Beyond the advantages of Fintech, some authors maintain. They would not hesitate to abandon them if they lost trust in them, stopped being safe, or stopped abiding by the law.

As can be seen, investigating the connection between Fintech and financial inclusion becomes a fully legitimate and current topic. But it also becomes an issue when it comes to a theoretical framework, which is still in its infancy, and which requires special efforts of analysis and conceptualization.

At the FinTech Association of Mexico, we consider that the following verticals are the most important within the sector:

- **Means of payment and transfers:** Payment platforms, electronic commerce and international transfers.
- **Infrastructure for financial services:** Customer assessment and risk profiles, fraud prevention, identity verification, banking APIs, payment method aggregators, big data & analytics, business intelligence, cybersecurity and electronic contracting.
- **Digital credit origination:** These are companies that offer credit products through electronic platforms.
- **Financial solutions for companies:** Software for accounting and billing and financial management infrastructures.
- **Personal finance and financial advisory:** Personal finance management, financial product comparators and distributors, financial education, automated advisors, and financial planning.
- **Financial markets:** Digital brokerage services for securities, financial instruments and currencies.
- **Crowdfunding or micropatronage:** it is a strategy that consists of obtaining funds online to finance a project through the contribution of a large number of investors.
- **InsurTech:** Technology applied to the provision of services in the insurance sector.
- **Cryptocurrencies and blockchain:** Developers of solutions based on the blockchain, intermediaries and markets for digital assets.
- **Disruptive financial entities:** Banks or other 100% digital financial entities. (Fintech Mexico, s.f.)

Fintech from Mexico tell us that with Open Finance it is easier to create and identify,

based on algorithms, suspected cases of financial cyberfraud. Algorithms and the tendency to collaborate come together in the fight against fraud in the financial sector to detect and prevent suspected cases of cyberfraud (Fintech Mexico 2023)

(Protect your money) web page that tells us: What types of Fintech will be regulated?

It is very important to make it clear that for the purposes of Mexican legislation, Fintechs are called Financial Technology Institutions or FTIs.

Many of the ITFs are currently in the process of regulation and are mainly grouped into two sectors according to the services they offer.

- Collective Financing Institutions (IFC) or crowdfunding: Crowdfunding or collective financing are financial technology platforms where it is possible to obtain financial resources from a large number of people to fund a project, a business or acquire a personal loan. That is to say: any investor can lend money to an entrepreneur or social cause in exchange for rewards, royalties, shares or an interest rate.
- Electronic Payment Fund Institutions (IFPE): This second figure is a little broader, since it considers the so-called electronic purses or wallets, and they fulfill various functions or services: They receive and issue electronic money, they also offer virtual debit cards or physical. (2023)

According to (Torres Blázquez, 2017) Fintech companies can be classified as follows:

- Fintech financing
- Fintech advisory
- Fintech of e-commerce transfers, collections and payments
- Fintech of distributed ledger or blockchain
- Cryptocurrency fintech

## CYBER FRAUDS IN MEXICO

The Government of Mexico has the National Commission for the Protection and Defense of Users of Financial Services (CONDUSEF) is an effective body for the protection and defense of the interests and rights of users before financial institutions. The mission of this institution is: (CONDUSEF, 2023) Empower Users of financial services, through education and financial inclusion, strengthen mechanisms for the protection and defense of Users of financial services in their relations with Financial Institutions, generating well-being conditions for the user that allow substantive equity.

(Carballo, 2018) writes that... For its part, financial inclusion is a broad, polysemic and multidimensional concept, which is also in constant evolution, construction and debate. Its multidimensionality stems from the obligatory need to contemplate various elements and variables to achieve its objectives. It is therefore an unfinished concept whose development can be analyzed and promoted from different perspectives.

(CONDUSEF, Government of Mexico, s.f.) indicates that CYBER FRAUD is known as those scams that use the network to carry out illegal transactions. Many times the people who carry out this type of fraud take advantage of the ignorance or lack of care that people have when using online financial services, becoming an easy target for scammers. Here are some types of fraud:

- Spam. Also known as SPAM, it is a message sent to various recipients who usually did not request it, for advertising or commercial purposes.
- Smiling. In this type of fraud, SMS messages are sent to your mobile phone with the purpose of visiting a fraudulent website. This in order to obtain your banking information, to

carry out transactions on your behalf.

- **Phishing.** Also known as identity theft, in this type of fraud the objective is that, by posing as a Financial Institution, with a message indicating an error in your bank account, and by entering your data, they obtain your confidential information such as: phone numbers your credit cards, passwords, bank account details, passwords, etc.
- **Pharming.** It consists of redirecting you to a fake internet page through pop-up windows, to steal your information. They usually display legends similar to this: Congratulations, you are the millionth visitor, click here to claim your prize!
- **Vishing (telephone extortion).** Criminals posing as bank or agency personnel call victims to inform them of shocking circumstances, such as unusual charges found on their accounts, to obtain the victim's financial information.
- **Nigerian fraud.** It is an online scam carried out via email where they pose as millionaires, claiming that due to the political complexities of releasing resources, they need the support of their victims to share their wealth, managing transactions through deposits.
- **SIM SWAPPING.** This is a fraudulent practice of duplicating a user's SIM card with a fake file. This allows cybercriminals to take control of your phone and get all the information stored on it, which can leak not only your financial information but also your personal information.

If at any time the user has this situation, with their data they can make purchases or request credits in their name, make transfers and even empty your accounts and even steal

their identity since it is currently another fraud which is increasing day by day, which in recent years has become a security measure for Mexicans, this allows other people to access other people's financial or personal resources and obtain benefits illegally.

The following table shows that each year fraud increased from 42% in 2017 to 70% in 2021.

## **MEASURES TO AVOID CYBER FRAUD**

To avoid being scammed by cybercriminals it is necessary to take the following measures for the computer or mobile phone:

- A personal session must be created independently of the session to work or socialize.
- Change passwords periodically
- Avoid common passwords with uppercase letters, lowercase letters, numbers, symbols, and at least 12 characters.
- Back up the information
- If social networks are used, activate the authentication factor when accessing online banking
- Configure privacy on social networks
- Cancel networks you no longer use
- Install an antivirus to protect against malicious software.

That is why banks have taken measures to reduce the dangers of identity theft, either due to fraud or administrative errors.

(Biometric Banking created to prevent fraud) Magazine in which the following marks us: When we talk about biometric data, we refer to those that cannot be falsified, stolen, or violated, so they are more reliable and secure data, since that a person's biometrics are relatively impossible to duplicate, since there are no identical data between one person and another.

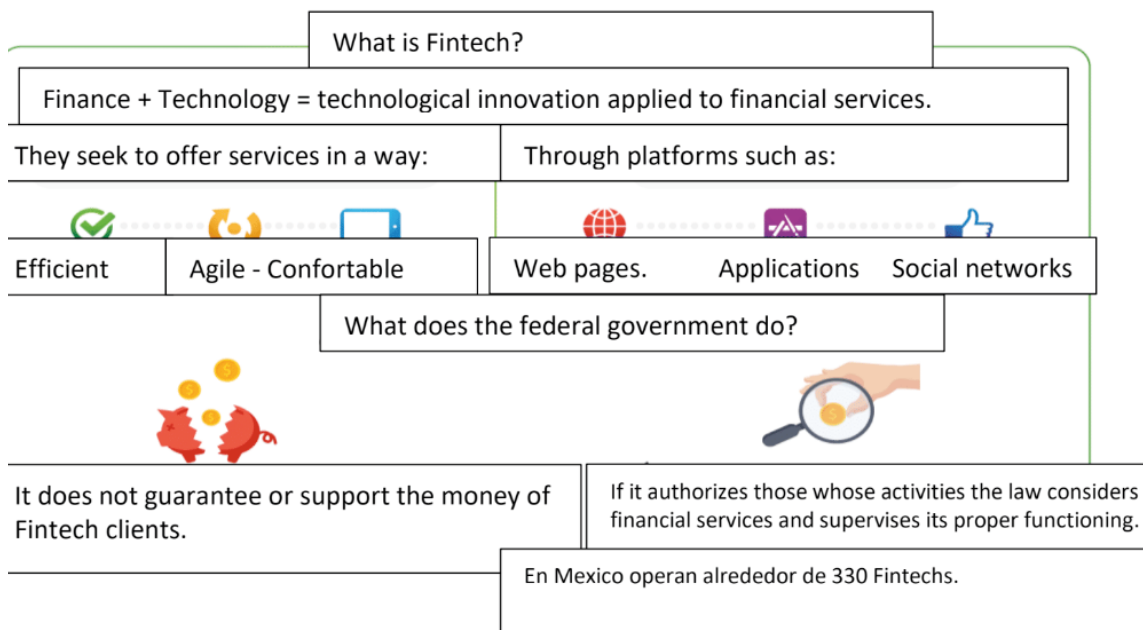


Figure 1. Source: (CNBV, 2021)

Cyber and traditional frauds in Mexico					
	2017	2018	2019	2020	2021
Total	1,506,173	1,739,135	2,028,251	2,147,334	1,901,897
cyber fraud	639,857	1,044,892	1,244,415	1,378,689	1,322,101
	42%	60%	61%	64%	70%
traditional frauds	864,261.00	694,224.00	783,824.00	768,645.00	579,796.00
	57%	40%	39%	36%	30%
To be defined (others)	2,055.00	19.00	12.00	0.00	0.00

Table 1. Own elaboration, Source: (CONDUSEF, 2021)

Take control of your finances and learn about:  
 > Budget > savings > credit > insurance  
 Sign up!!

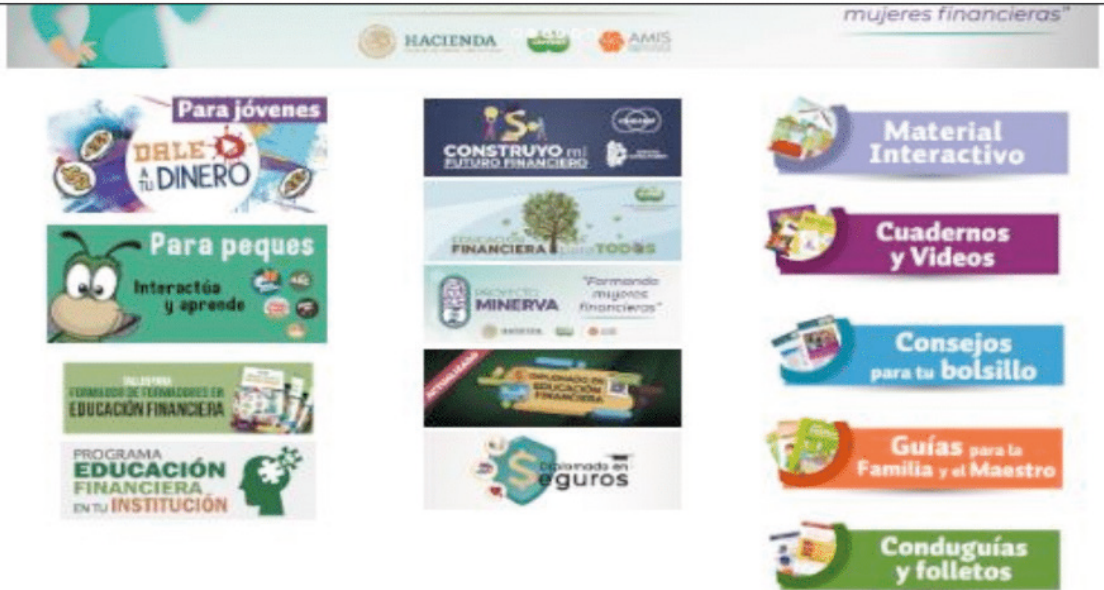


Figure 2. Source: (Proyecto Minerva, 2023)

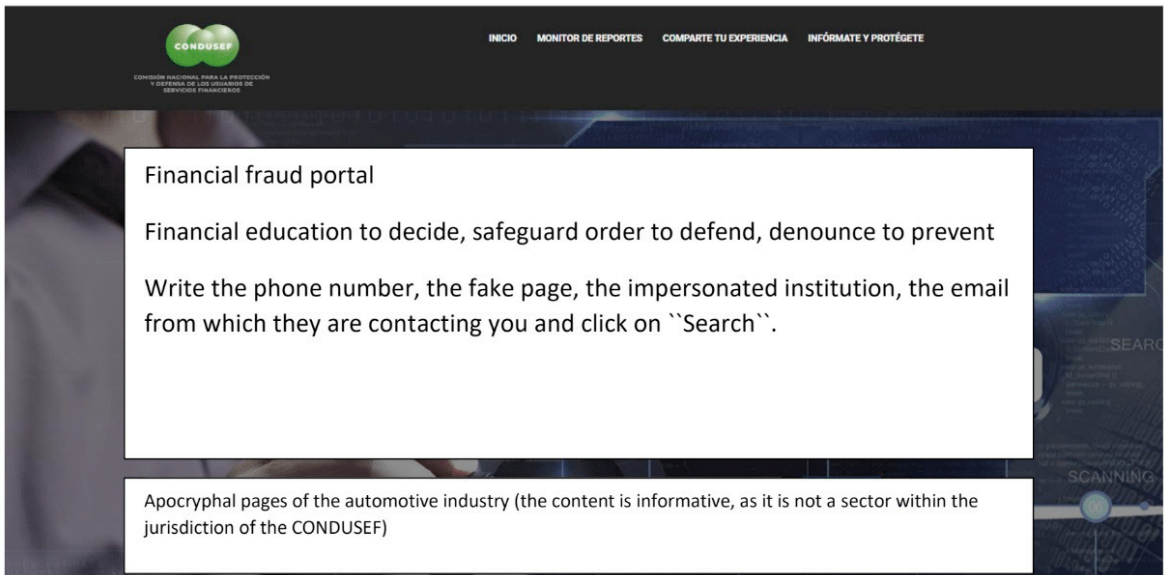


Figure 2. Source: (CONDUSEF , 2023)



What biometric data will the Banks use?

- Fingerprint.
- Facial recognition.
- Voice print.

The Government of Mexico offers financial education in order for people to acquire knowledge that will allow them to make financial decisions and achieve personal and family comfort through diplomas, courses, interactive material, savings tips, credits, budgets and also tips How to avoid being a victim of financial fraud, such a program is the Minerva Project. Originally carried out thinking of including women in financial knowledge, it has now been integrated for all Mexicans of both genders, ages and different levels of studies.

The educational offer offered by this site includes notebooks, guides, advice, videos, with different topics such as: Budget, Credit, Investment, Savings, Insurance, Remittances, Retirement, among others, focused on the different stages of life, from childhood to adulthood, so all household members have a place on this site, such as the smallest of the house, who have a special section. (CONDUSEF, Government of Mexico, s.f.)

During the pandemic, many institutions were affected by cyber fraud, which is why the (CONDUSEF, Government of Mexico, s.f.) opened a financial fraud portal in order to publicize the data used to commit fraud, as well as a space to report cases in which users have been affected, the National Commission for the Protection and Defense of Users of Financial Services (CONDUSEF). In this portal, users will be able to find out the phone numbers, Internet pages, emails, and false institutions that are used to commit fraud. In

addition, the modus operandi used for it is also reported.

According to the CONDUSEF portal, in order of highest to lowest recurrence, fraud occurs mainly through telephone calls, followed by electronic commerce, government impersonation and other institutions, identity theft, fake internet pages, deceptive recruitment, emails and social networks. (ADYEN, s.f.)

## CONCLUSION

At present, the government of Mexico has promoted through the CONDUSEF government institution, the protection of the interests and rights of consumers of financial products and services offered by financial institutions. This institution is very important to support all those people who have suffered fraud, breach of trust, as well as the mismanagement of personal databases, all this has resulted in inadequate cybersecurity, where criminals had access “not “. Authorized” to sensitive data.

Any person or company can be affected by a crime or fraudulent computer act which generates economic losses. However, despite the fact that there are rules and sanctions for this type of act in Mexico, many people are unaware of them or, worse still, do not believe that they will be sanctioned or assisted to recover, if applicable, the economic resource affected. That is why CONDUSEF is an institution that provides an electronic complaint portal to assist both natural and legal persons, innovating the promotion and transformation of financial education, promoting inclusion and supporting the strengthening of financial transparency.

## REFERENCES

- ADYEN. (s.f.). Obtenido de <https://www.adyen.com/landing/online/mx/datos-que-debes-saber-sobre-los-fraudes-mas-comunes-en-mexico#:~:text=De%20acuerdo%20con%20el%20portal,la%20captaci%C3%B3n%20enga%C3%B1osa%20los%20correos>
- Bulao, J. (2021). *Techjury*. Obtenido de <https://techjury.net/blog/how-many-cyber-attacks-per-day/>
- Carballo, I. (2018). *Financial Inclusion in Latin America*. Global Encyclopedia of Public Administration, Public Policy, and Governance. Obtenido de <https://doi.org/10.1007/978-3-319-31816-5>
- CNBV. (2021). <https://www.gob.mx/cnbv/acciones-y-programas/sector-fintech>.
- Comisión Nacional del Mercado de Valores CNMV. (s.f.). Obtenido de [https://www.cnmv.es/DocPortal/Publicaciones/Fichas/GR03\\_Fintech.pdf](https://www.cnmv.es/DocPortal/Publicaciones/Fichas/GR03_Fintech.pdf)
- CONDUSEF . (2023). [https://phpapps.condusef.gob.mx/fraudes\\_financieros/index.php](https://phpapps.condusef.gob.mx/fraudes_financieros/index.php).
- CONDUSEF. (2021). <https://www.condusef.gob.mx/documentos/comercio/FraudesCiber-1erTrim2021.pdf>.
- CONDUSEF. (2023). *Gobierno de Mexico* . Obtenido de [https://www.condusef.gob.mx/?p=que\\_hacemos](https://www.condusef.gob.mx/?p=que_hacemos)
- CONDUSEF. (s.f.). *Gobierno de Mexico*. Obtenido de <https://www.condusef.gob.mx/?p=tipos-de-fraude>
- CONDUSEF. (s.f.). *Gobierno de Mexico*. Obtenido de <https://www.condusef.gob.mx/index.php?p=contenido&idc=220&idcat=3>
- CONDUSEF. (s.f.). *Gobierno de Mexico*. Obtenido de <https://www.condusef.gob.mx/?p=contenido&idc=360&idcat=1>
- Cressey, D. (1961). *The prison: Studies in institutional organization and change*. New York : Holt, Rinehar and Winston.
- Fintech Mexico*. (s.f.). Obtenido de <https://www.fintechmexico.org/qu-es-fintech>
- Fintech Mexico 2023*. (3 de julio de 2023). Obtenido de <https://www.fintechmexico.org/noticias/2023/7/analisis-de-datos-y-open-finance-la-clave-para-prevenir-ciberfraudes-financieros-en-mxico-ufLOW>
- La Banca Biométrica creada para evitar fraudes. (s.f.). *Tu bolsillo*. Obtenido de <https://attachments.office.net/owa/sgallegos%40uv.mx/pdfprint.aspx?id=AAMkADJjMDFlyzgzLTNjOTctNGIxNS1iZTYzLTUwYjc5NmQyZDIkYQBGAaaaaAB-qZrsad65sTK99%2FzECJ98rBwDGPmFIMRRnTYKkUMQTFrYTAaaaAEN5IAACIYdemxIi3Sru7JwsZe7A6AAdLYiOoAA-ABEgAQAKzqfYNaxMtEivtQNehRysE%3D&>
- Proteja su dinero*. (23 de agosto de 2023). Obtenido de <https://revista.condusef.gob.mx/2021/04/las-fintech-aceleran-su-paso/>
- Proyecto Minerva. (2023). <https://www.minervaeducacionfinanciera.mx/>.
- Rojas, L. (2016). La revolución de las empresas Fintech y el futuro de la Banca. *scioteca*. Obtenido de <http://scioteca.caf.com/handle/123456789/976>
- Soto, W. (2010). *La cultura de la cibernética*. Bogotá: Bonaventuriana.
- Torres Blázquez, R. (2017). Incorporación de las nuevas tecnologías al negocio bancario en España: impacto de las Fintech. *Repositorio.upct.*, 68. Obtenido de <https://repositorio.upct.es/bitstream/handle/10317/6008/tfg-tor-inc.pdf?sequence=1&isAllowed=y>