# Perception of Corruption in Users of Electronic Government in Mexico: Contextualization in Times of Covid-19

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**Abstract.** The COVID-19 pandemic generated a lockdown that prevented government procedures and services from being conducted in person, which had an impact on corruption and the use of electronic government (hereinafter GE). The objective of this study is to know the incidence of GE in corruption from the perception of users in a context of pandemic and post-pandemic. In this sense, the data corresponding to the ENCIG 2019 and 2021 were analyzed, through the construction of variables and an analysis of multiple cross tables. From the study conducted, it was identified that the population considers corruption to be the second most worrisome problem in Mexico, and that GE users had a lower incidence of corruption cases, however, at the end of the confinement, non-GE users reached very high corruption percentages. It is concluded that in Mexico an intensive process digitalization must be implemented in all public procedures and services, to counteract corruption and make services more efficient.

**Keywords:** technologies and social change · socioeconomic conditions · ICT public policies · demographic trends · digital inclusion

## 1 Introduction

One of the existing problems in most countries is corruption, which can be understood as "the abuse of entrusted power for private benefit" (Transparency International, 2023). In other words, the distortion of the public function for private purposes. In Mexico, the General Directorate of Legislative Analysis (2015) points out that corruption corresponds to a complex issue and is a multifaceted phenomenon that is not only related to the State and the public function, but also affects other social areas of the countries ranging from the loss of confidence in the institutions, which at a certain moment can cause ungovernability of a country.

The statistics allow us to have an overview of the elevated levels of corruption that Mexico presents. In this sense, the Corruption Perception Index (CPI) classifies, at international level, 180 countries according to their levels of corruption perception in the public sector, Mexico was positioned in 130th place in 2019, by 2021 it advanced 6 places positioning itself in place 124th, one of the latest positions at international level.

To have a better vision of corruption in Mexico, the National Survey of Government Quality and Impact (ENCIG) in 2019, indicated that the population rate that had contact with a public server and experienced at least one act of corruption was 15,732 per 100,000 inhabitants nationwide, in 2021 it was 14,701 per 100,000 inhabitants (ENCIG, 2020). Similarly, the UN conducts the Electronic Government Development Index (EGDI) to measure the development of the GE of 190 countries, where Mexico ranked 64th in 2019, while by 2022 it advanced 2 places, ranking 62nd, which reflects a low position in relation to its counterparts (United Nations, 2022).

Some investigations show the close relationship between the development of the GE and the reduction of corruption. In this sense, one of the fundamental pillars of the GE is the fight against corruption (Vargas and Castañeda, 2018). In this regard, Andersen (2009) points out that the GE has a considerable impact on corruption, because it reduces discretion in such a way that it limits some opportunities for arbitrary action; increases the chances of exposure by maintaining detailed data on transactions, making it possible to trace and link the corrupt to their illicit acts. For their part, Lupu and Lazar (2015) affirm that the GE is an efficient and effective way to improve public transparency and reduce corruption.

The aforementioned leads us to question what is the perception of GE users about corruption in Mexico during the COVID-19 pandemic? Therefore, the goal of this is to identify through the population perception if the GE has had an impact on the reduction of corruption in the context of the pandemic. Therefore, it is assumed that the use of GE in Mexico was a determining factor in reducing the perception of corruption.

This work has two relevant contributions, firstly, it reaffirms that the use of GE contributes to the reduction of corruption, which is an accurate reference for governments in making public policy decisions regarding the reduction of corruption. Secondly, it confirms the theoretical contributions where the GE is an adequate means to generate transparency and accountability, for which the digital transformation of the public sector is necessary in an optimal way.

The article is arranged in four sections. The first corresponds to a theoretical review on corruption, electronic government and the Covid-19 pandemic. The second presents a description of data collection and processing. The third shows the results obtained related to the perception of corruption in GE users. Finally, the relevant conclusions and recommendations are presented to the key stakeholders.

## 1.1   Corruption in Public Administration

Within the development of state activities, deficiencies have arisen in its operation, either due to the design of the system itself, or due to the performance of those who make up the government apparatus (public servants), which caused the public administration to be too slow, expensive, far from people needs, of poor quality, wasteful of financial and human resources, and corrupt (Schröder, 2006).

Therefore, to abate these consequences, some of the reforms implemented are: government presence, only in basic functions; Participation of civil society; decentralization and delegation of powers; results-based government; and incorporation of ICTs (Plascencia, 2015). To have a more precise idea of corruption, it can be understood as positioning oneself above others under the title of some type of entrusted power, to obtain their own benefits from economic and material resources. Specifically, in the public sphere they are linked to the State apparatus, its public servants, political parties, unions, business organizations, the media, etc.

Consequently, it is useful to know who are considered public servants in Mexico, that is, those who are part of the state administrative structure. The Article 108 of the CPEUM establishes that they are those elected by popular representation, members of the Judiciary of the Federation, of the Congress of the Union or in the Federal Public Administration; in addition to those who work within autonomous agencies. They will conduct their functions and will be responsible for the acts or omissions derived from their functions.

Now, Jiménez (2013) points out that corruption is the illegal act conducted by a representative of the people elected by vote or linked to a political party, who by virtue of his position acts for his own benefit or that of another person (p. 24).

Along these lines, it is common to observe that the scope of corruption occurs within the public sector, in the words of Kaufmann (2015) it is a symptom that frequently involves politicians, organizations, companies and citizens who collude to benefit from access to power to public resources and the formulation of public policies, to the detriment of the public good.

Similarly, Cárdenas and Mijangos (2006) point out that corruption occurs in different areas, mainly in public, private and social spaces. That is why Li, Wei and Ma (2021) point out that the role of the GE in the fight against corruption is vital, because it allows an increase in public access to information, empowers civil society to supervise the State and allows citizens to keep track of government decisions and actions.

## 1.2   Electronic Government as an Anti-Corruption Mechanism

In particular, the GE had its origins at the end of the last century in the framework of the reforms implemented through the New Public Management, with the purpose of modernizing public administration, moving from the traditional bureaucratic State to a more flexible, efficient, transparent and aimed at satisfying the demands of citizens, in other words, reducing the size of the public function apparatus and making its performance more efficient (Sánchez, 2012).

The Ibero-American Charter of Electronic Government (2007) states that the GE is "the use of ICT in the administration bodies to improve the information and services offered to citizens, guide the effectiveness and efficiency of public management and substantially increase the transparency of the public sector and citizen participation" (p. 239). In line with the above, Criado and Gil-García (2013) point out that the GE is the interactions between ICTs and public administrations. In the other hand, Cruz-Rubio (2015) mentions "by electronic government (e-government) we refer to the use and application of ICT and its tools in the public sector" (p. 40).

Given that the GE increases the efficiency of public management, it allows innovation in the procedures and services offered to citizens and provide government actions in a framework of greater transparency (Ruelas and Arámburo, 2006). This shows that it is an effective mechanism to combat corruption in the sense that thanks to ICTs, government procedures and processes can be universally accessible and visible within an anti-corruption framework.

The GE is a component that provides different tools towards the fight against corruption. From the point of view of Villoria and Ramírez (2013), the GE is a mechanism for a transparent and accountable government, that is, an ideal instrument for the promotion of an integral government. In this sense, Tintin, Chávez, Altamirano and Tintin (2018) confirm that the development of the GE contributes positively to the reduction of corruption. Likewise, Sadik-Zada, Gatto and Niftiyev (2022) agree that the use of GE is a crucial factor that contributes to diminish corruption.

## 2 Methodology

To achieve the proposed objective, the research was conducted from a quantitative approach, with an exploratory and descriptive scope. The research analysis is cross-sectional. The data sources are secondary, and the data analysis was through descriptive and inferential statistical techniques. To know, analyze and compare the behaviors of the GE as a mechanism to reduce corruption rates, secondary data corresponding to official statistics from the National Institute of Statistics and Geography (INEGI) was used, particularly from the National Survey of Government Quality and Impact (ENCIG) of the years 2019 and 2021.

### 2.1 Categorization of Variables

For the analysis of the use of GE, six questions were considered and analyzed in the ENCIG survey on GE, which are presented in Table 1. Similarly, to address the perception of corruption, 6 multiple-choice questions were used, the questions were selected from the section on perception of corruption in public procedures and services of the ENCIG.

### 2.2 Analysis and Prioritization of Information

At first, an exploratory analysis was conducted, with the aim of finding missing values. To generate a reference variable that would allow estimating the use of GE, a new variable "Use of GE" was created with the 6 GE questions. Subsequently, multiple response cross tables were used using the new variable "Use of GE" and 6 corruption questions. The data were processed and analyzed with the statistical software SPSS 22.

**Table 1.** Operationalization of variables around electronic government and corruption

| Variable | Items |
|---|---|
| ***Use of Electronic Government*** | 1. Have you… Consulted government internet pages (federal, state, or municipal) to find out information about the way they are internally organized, the programs they conduct or the use of public resources and money? |
| | 2. Have you… Filled out and sent online any form or application to start, continue or finish a procedure? |
| | 3. Have you… Made a payment for a service or to continue or finish a procedure on the portal of a public institution or government office? |
| | 4. Have you…used social networks Twitter, Facebook, etc. To file a complaint, report, or comment on government accounts (federal, state, or municipal)? |
| | 5. Have you… conduct a procedure (federal, state, or municipal) completely, online, from your consultation to the request or payment of the same? |
| | 6. Have you…requested information or support from the government (federal, state, or municipal) to conduct a procedure, pay or to obtain any type of information? |
| ***Perception of the Corruption in process*** | 1. Corruption is a practice that occurs when a public servant or government employee abuses their functions to obtain personal benefits such as money, gifts or favors from the citizen. As far as you know, in (STATE) these practices are: Very frequent, frequent, infrequent, never occur, do not know. |
| | 2. Do you believe, or have you heard that in any of the procedures, services, or payments you referred to, public servants or government employees sometimes receive money, gifts or favors from citizens to expedite, approve, or avoid procedures? |

(*continued*)

**Table 1.** (*continued*)

| Variable | Items |
| --- | --- |
| | 3. Do you remember any of your acquaintances, such as relatives, friends, co-workers or classmates, who have had an experience in which a public servant or government employee asked them for money, gifts, or favors when conducting or to expedite, approve, or avoid any of the procedures, services or payments listed above? |
| | 4. During 2021, to expedite, conduct, avoid procedures or fines in any of these procedures, payments, or requests: A public servant or government employee tried to appropriate or directly requested any benefit (money, gifts, or favors) that you could you grant? |
| | 5. Has a third person or coyote insinuated or directly requested money, a gift or favor for a public servant or government employee? |
| | 6. Has a public servant or government employee insinuated or created the conditions for you to provide money, a gift, or a favor for yourself? |

**Source:** Own elaboration with data from ENCIG 2019 and 2021

## 3    Results

At first, the most important problems that Mexico faces today were identified. According to the perspective of those surveyed, the three main problems are: First, insecurity, which went from 75% in 2019 to 67.2% in 2021 (See Fig. 1). Secondly, it can be seen that corruption increased from 50.2% in 2019 to 56% in 2021. Third place was occupied by unemployment, which also increased from 34.8% to 36.9%.

Secondly, it was identified that those who use the GE in Mexico, and who believe or have heard that in any of the procedures, services, or payments that they referred to, public servants or government employees sometimes receive money, gifts or favors by citizens to expedite, approve, or avoid procedures. In response, there was a decrease from 72.90% in 2019 to 68.70% in 2021 (See Fig. 2).

On the other hand, the following question was asked: is corruption a practice that occurs when a public servant or government employee abuses from their functions to obtain personal benefits such as money, gifts or favors from the citizen? As far as you know, in your state these practices are: Very frequent, frequent, infrequent, never occur or you do not know? The results of Fig. 3 show that in 2019, 48.5% of the GE user population considered that these corrupt practices were conducted very frequently, in 2021 it decreased to 46.9%. The level of frequent perception, if it presented a minimum increase from 42.4% in 2019 to 43.10% in 2021.
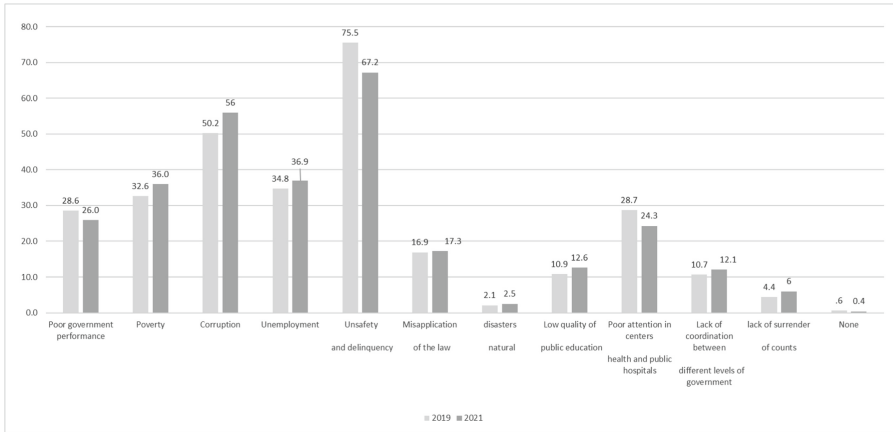
**Fig. 1.** Perception of the most important problems faced today in Mexico 2019–2021. **Source:** Own elaboration with data from ENCIG 2019 and 2021
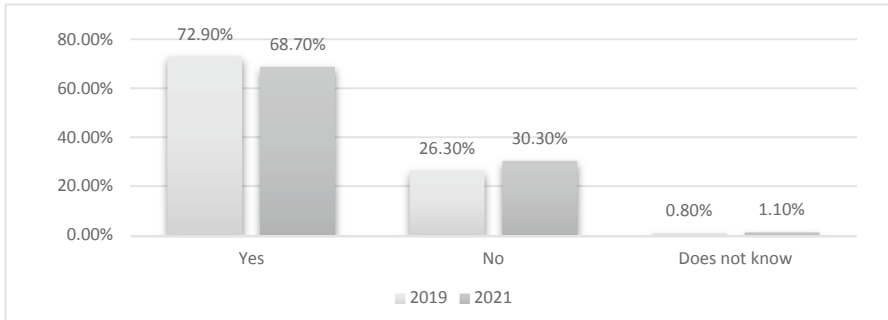


**Fig. 2.** Comparison to establish the relationship between the use of the GE and the perception of corruption in procedures, services, or payments in 2019 and 2021. **Source:** Own elaboration with data from ENCIG 2019 and 2021

Likewise, in both years 2019 and 2021 they were asked: Do you remember someone you know, such as relatives, friends, co-workers or classmates, who has had an experience in which a public servant or government employee requested money, gifts, or favors? When conducting or to expedite, approve or avoid any of the procedures, services or payments listed above? In this sense, Fig. 4 shows how perception decreased from 59.7% in 2019 to 54.60% in 2021. In contrast, those who responded negatively, the percentage went from 39.7% in 2019 to 44.7% in 2021. In both cases, It can be interpreted as an improvement in perception, since the percentages of experiences of corruption in acquaintances have decreased.

Instead, in an attempt to identify the perception of corruption directly, the following question was used: To expedite, conduct, avoid procedures or fines in any of these procedures, payments, or requests: A public servant or government employee? Did he try to appropriate or directly solicit any benefits (money, gifts or favors) that you could give
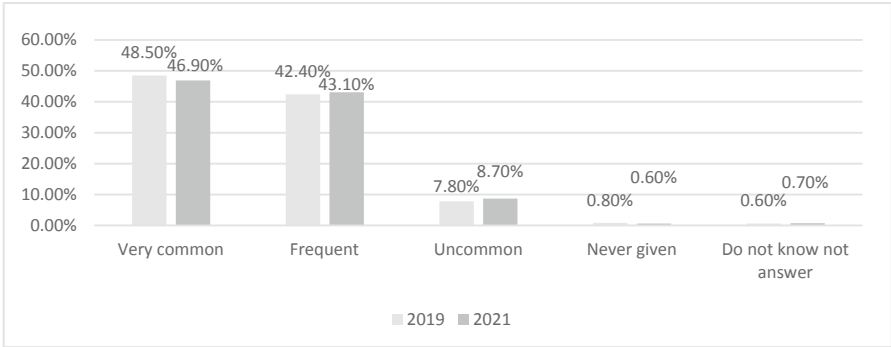
**Fig. 3.** Contrasting the use of electronic government and perception of the frequency of corruption 2019 and 2021. **Source:** Own elaboration with data from ENCIG 2019 and 2021
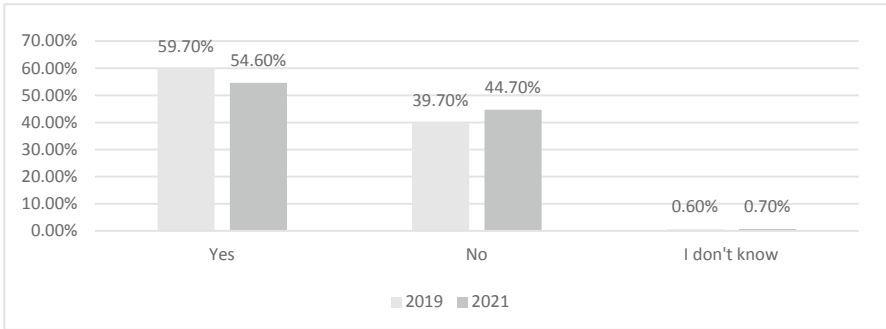


**Fig. 4.** Contrasting the use of electronic government and experiences of corruption in procedures, services, or payments 2019 and 2021. **Source:** Own elaboration with data from ENCIG 2019 and 2021

him? It can be seen in Fig. 5, that in 2019 only 15.9% of those who use GE responded affirmatively, and in 2021 only 12.4%. These figures are positive since they denote progress in containing corruption. The foregoing is consistent with the percentages of GE users who answered negatively, although the change from one period to another was minimal from 84% in 2019 to 87.40% in 2021.

Another indication of the improvement in the perception of corruption was identified when the following question was studied: Did a third person or coyote insinuate or directly requested money, a gift or favor for a public servant or government employee? From the people who use the GE, the percentage was not only high 90.8% in 2019, but also growing, since it went to 95% for the year 2021 (See Fig. 6).

Finally, the following question was analyzed: Did a public servant or government employee insinuate or create the conditions for you to provide money, a gift or favor for yourself? We can see in Fig. 7 that GE users are the least affected by any request for money, gift or favor from a public servant, since in 2019 87% answered negatively and in 2021 the percentage increased in 92.60%.
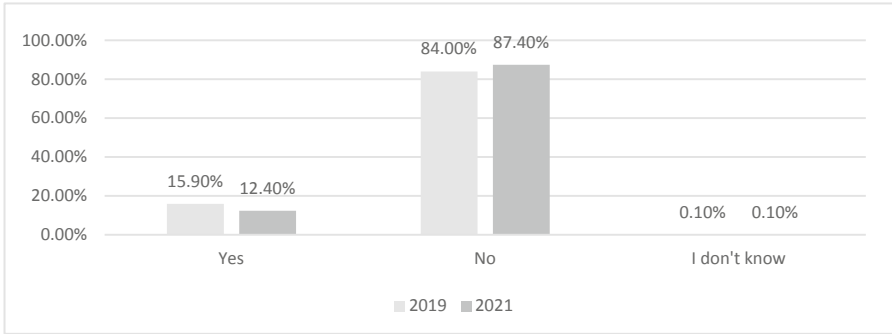
**Fig. 5.** Contrasting the use of electronic government and direct request for benefits by the public servant 2019 and 2021. **Source:** Own elaboration with data from ENCIG 2019 and 2021
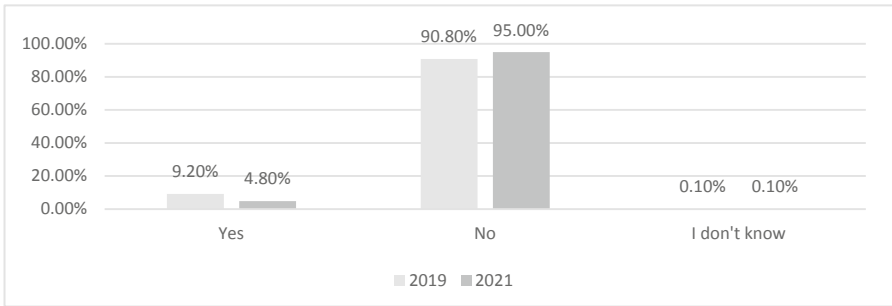


**Fig. 6.** Contrasting of Use of the Electronic Government and request for benefits by a third party 2019 and 2021. **Source:** Own elaboration with data from ENCIG 2019 and 2021
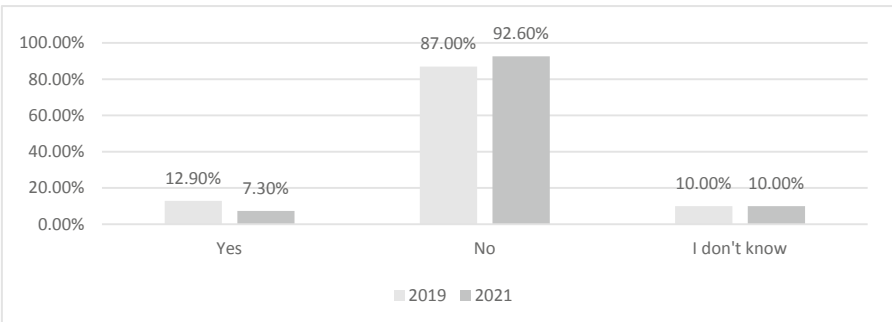


**Fig. 7.** Contrasting the use of the electronic Government and request for benefits by the public servant 2019 and 2021. **Source:** Own elaboration with data from ENCIG 2019 and 2021

# 4 Conclusions

The objective of this work was to know the incidence of GE in corruption from the perception of users in a context of pandemic and post-pandemic. It is concluded that despite the existence of multiple determinants of corruption, the use of GE and corruption are intricately linked. In addition to the above, the results suggest that the population has a perception of corruption as a fundamental problem in Mexico, since it ranked second among the most important problems from 2019 to 2021. It should be added that the population, regardless of using or not using the GE, has extremely high perceptions (Very high and High) regarding the degree of frequency with which corruption situations occur.

On the other hand, it is corroborated that people who use GE decreased their perception of presenting acts or experiences of corruption in procedures, services, or payments in the pandemic period in 2019. However, in the post-pandemic period (2021) this situation became more habitual due to the end of the confinement and the return to in person procedures. Similarly, being victims of acts of direct corruption where officials requested economic resources, people who did not use the GE were the most affected by presenting high percentages of corruption after the pandemic.

It was also identified that people who do not use the GE are the ones who are most exposed to intermediaries or coyotes who offer them acts of corruption to expedite their procedures. It is concluded that the establishment of the GE within the public administration goes beyond having an automated system of public management, but it opens the possibility that both governments and citizens have an effective tool against these types of acts, by allowing the prevention, detection, and accountability of public servants in all areas of government. Based on the aforementioned, a massive digitization of public procedures and services at the national level is recommended, accompanied by digital literacy in the use of GE.

Some implications that may arise are related to GE's backwardness in Mexico and corruption, which are linked to various socioeconomic factors which are outside the scope of this analysis. It is recommended for future research to use a broader spectrum of sociodemographic variables.

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