# Electronic invoicing for taxpayers engaged in the distribution of domestic gas cylinders, Santa Elena, 2021



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## Abstract

The objective of this research was to analyze the advantages and disadvantages of implementing an electronic invoicing system for taxpayers engaged in the distribution of domestic gas cylinders located in the province of Santa Elena since it is of great importance to disseminate these aspects to the business community because in the future all taxpayers who issue invoices will be required to issue this document virtually. Regarding the methodology, a non-experimental quantitative approach was used, of a descriptive-cross-sectional type, using as a research technique a survey directed to the 82 authorized businesses located in the province, asking questions that evaluate aspects such as environment, culture, usefulness, safety and satisfaction. The results show that there are limitations in electronic invoicing in the sector, the main ones being: inefficient access to internet connections, the high cost of electronic invoicing programs of certain suppliers and the lack of knowledge of the free tools offered by the Internal Revenue Service (SRI), but also positive factors such as control of sales and costs, the security of having valid documents and above all that taxpayers are aware that this process will help reduce tax evasion.

**Keywords:** Electronic receipts, invoicing, taxpayers, gas cylinders.

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***Resumen***

*La presente investigación se planteó como objetivo realizar un análisis de las ventajas y desventajas que posee la implementación de un sistema de facturación electrónica en los contribuyentes dedicados a la distribución de bombonas de gas doméstico ubicados en la provincia de Santa Elena, debido a que es un tema de gran importancia difundir estos aspectos a la comunidad empresarial porque en el futuro la totalidad de contribuyentes que emiten facturas serán obligados a emitir este documento de forma virtual; en lo referente a la metodología se utilizó un enfoque cuantitativo no experimental, de tipo descriptivo – transversal, utilizando como técnica de investigación una encuesta dirigida a los 82 negocios autorizados ubicados en la provincia, efectuando preguntas que evalúan aspectos como: entorno, cultura, utilidad, seguridad y satisfacción. Los resultados reflejan que existen limitaciones en la facturación electrónica del sector entre las principales se resalta: el acceso poco eficiente a conexiones de internet, el costo elevado en los programas de facturación electrónica de ciertos proveedores y el desconocimiento de las herramientas gratuitas que ofrece el Servicio de Rentas Internas (SRI), y también se resalta los factores positivos como el control en las ventas y costos, la seguridad de poseer documentos válidos y sobre todo que los contribuyentes son conscientes que este proceso ayudará a disminuir la evasión fiscal.*

***Palabras Clave:*** *Comprobantes electrónicos, facturación, contribuyentes, bombonas de gas.*

## 1. Introduction

Electronic invoicing is currently a highly relevant issue because it is becoming more common for businesses to adopt this method in their daily

operations and activities, either for efficiency or because it is mandatory. According to Barreix and Zambrano (2018), Chile initiated the electronic invoicing project in 2003, making it the pioneer country in its use. From 2010 to 2018, countries such as Argentina, Brazil, Mexico and Ecuador regulated their laws to join this project and achieve that in the future, all taxpayers embrace this system.

In recent years, electronic invoicing systems have been considered a method that allows greater transparency in commercial transactions, in addition to protecting the environment by reducing the use of paper. For all these factors, by resolution NAC-DGERCGC14-00157, in 2014, Ecuador began to force certain to implement the electronic system, starting with public institutions to include the domestic gas cylinder distribution sector in 2018 by resolution NAC-DGERCGC18-00000191.

In Ecuador, the distribution of domestic gas cylinders has been carried out for more than 70 years; taxpayers engaged in this economic activity generate a constant source of employment because it is a staple product that is necessary throughout the year and the accessible way of acquiring the product that most often comes in cylinders of 15 kilograms. However, the adoption of electronic invoicing has been a challenge for domestic gas distributors, and this study is based on this premise and is aimed at analyzing the advantages and disadvantages of changing from physical to electronic invoicing.

It is important to mention that the main problem of the transition from electronic to physical invoicing is a challenge for all sectors because some businessmen or entrepreneurs do not have an updated knowledge of the reforms or the requirements to obtain the issuance of digital signatures. Other factors that influence are the lack of control in the companies, tax evasion and the limitation of good advice.

The decision to change the way of issuing sales receipts and reform the calendar over time has generated some acceptance and rejection in various sectors. However, it is an inevitable process, and all taxpayers who invoice at the beginning of 2023 must be able to issue electronic sales receipts, except for those who issue sales notes.

### 1.1 Literature review



Some previous research on electronic invoicing is presented below to identify, analyze and highlight relevant data that will serve as bibliographic support for this research.

Benavides (2018), in the research entitled "analysis of electronic invoicing as an international tax prevention mechanism," examines a series of tax reforms established to curb or eliminate tax evasion practices in Ecuador. Among these reforms, the main one is the mandatory issuing of electronic invoices for different economic activities.

The results of Benavides (2018) reflect that there is an increase in income tax collection of 82.84% from 2012 to 2016 and a reduction in the tax evasion rate of 7% referring to the years that the issuance of physical invoices was carried, concluding that the positive impact generated by this type of measures is evident, in addition to the fact that with these methods the IRS databases are constantly updated, which gives way to greater controls and obtaining truthful information.

For their part, Jurado (2017) in the study entitled "Analysis of the implementation of electronic invoicing in tax management as an instrument for tax collection in Ecuador," considers that the use of electronic sales receipts is an agile and easy-to-use alternative, and evidence the differences between the issuance of physical invoices and electronic invoices.

Based on theories, concepts and statistical data, the authors conclude that the occupation of technologies is inevitable because all activities are being modernized. In addition, the IRS, eager to modernize its systems and better control taxpayers, was projected to implement this method by the end of 2022. In 2016, 22,754 companies had already joined the billing system, and undoubtedly that figure has been increasing.

The authors Cabezas and Andrade (2021) in their research named "Strengthening tax collection through the implementation of electronic invoicing," add that Ecuador is considered one of the first countries to opt for these measures and that these tax transformations can also generate negative factors such as the reduction of jobs and the risks of manipulating information systems despite generating positive ecological, political and administrative aspects.

### 1.2. Electronic Invoicing

According to the executive decree (2020), sales receipts are fiscal documents that prove daily activities; this means taxpayers support the history of their acquisitions and report to the State in their tax returns; in Ecuador, the act of requiring these receipts is part of the formal duties, and their non-issuance can generate fines or closure.

All types of vouchers must be issued at the time an action is performed and must be issued for any activity that is considered lawful. The most commonly used sales voucher in Ecuador is the invoice. According to the Regulation of sales vouchers, withholding and complementary documents are issued and delivered when goods are transferred, services are rendered, or other taxable transactions are carried out.

In 2013, Ecuador officially launched electronic invoicing through the SRI in response to tax evasion and simplifying taxpayer compliance with tax obligations. In addition, a series of resolutions has been gradually adding different economic sectors, requiring them to comply with this measure.

Barreix and Zambrano (2018) consider that electronic invoicing is a project that has been developing in different Latin American countries due to the modernization, globalization of systems and the processing of transactions to make them faster and more efficient, maximizing the levels of requirements and needs of both taxpayers and the State.

For the issuance of electronic receipts, companies can choose their issuance system, accounting packages on file or online, and these programs have an acquisition cost for the taxpayer. Another more favorable alternative is the use of free applications provided by the SRI. The following are the options enabled by the SRI for issuing electronic documents: electronic biller and the SRI and an online system.

The free electronic biller generates signs, and sends receipts for authorization by the SRI. It also offers a friendly visualization of the Printed Representation of the Electronic Document (RIDE). To use this tool, companies must have an electronic signature obtained with RUC, and with extension p12, this system is recommended for companies and individuals who are required to keep accounting.

The SRI & YO online portal is aimed at individuals who are not required to keep accounting records. It automatically fulfills the functions of generating, electronically signing, authorizing and notifying their receipts by email to the recipients (customers). It also offers a friendly display of the Printed Representation of the Electronic Document (RIDE), the record of this portal is automatically saved and available for review at any time. This portal is simple to use and adapted to the needs of taxpayers who do not have a good accounting education.

Chica et al. (2020) summarize that electronic invoicing offers the following advantages to the taxpayer: it generates a document with legal and tax validity of the value to be paid, reduces costs arising in the compliance of tax obligations, efficiently fulfills the processes that are carried out and improve methods of obtaining information, provides a tool to access information in a quick and timely manner and contributes positively to improve the environment.

Díaz et al. (2016) consider that the main disadvantages of acquiring an electronic invoicing system are: finding the necessary equipment and tools that adapt to the program that the taxpayer acquires, investment costs for personnel, hiring professionals to advise the company, the change of culture or adapting to these technological changes, the difficulties of having good internet or network access in the

business, and the resistance of consumers not to require the physical document.

### 1.3. Gas Commercialization

One of the most important energy consumptions in the country is liquefied petroleum gas, the fastest growing energy source in recent years, due to the substitution of electrical appliances for their equivalent in the domestic sector. Meanwhile, in the commercial sector, gas cylinders have increased, distributed in restaurants, hotels and commerce.

Regarding the commercialization of domestic gas cylinders for internal consumption, 89% of this is destined for Ecuadorian households, while 11% is distributed among industry, commerce and agriculture. It should be remembered that a 15 kg cylinder is marketed at $1.6, with the State assuming a subsidy of $13.5, with an average of 1.64 cylinders per household in 2020.

Table 1 shows the figures produced and bottles consumed in Ecuador from 2010 to 2020.

*Table 1. Gas cylinder distribution data*

| Year | Kilograms produced for domestic use | 15 kg cylinders | Average number of gas cylinders consumed per household per month |
|---|---|---|---|
| 2010 | 867.534.122 | 57.835.608 | 1,33 |
| 2011 | 893.224.644 | 59.548.310 | 1,37 |
| 2012 | 897.130.869 | 59.808.725 | 1,41 |
| 2013 | 920.849.041 | 61.389.936 | 1,37 |
| 2014 | 944.203.097 | 62.946.873 | 1,48 |
| 2015 | 963.015.711 | 64.201.047 | 1,43 |
| 2016 | 941.625.916 | 62.775.061 | 1,4 |
| 2017 | 982.309.992 | 65.487.333 | 1,38 |
| 2018 | 1.030.185.822 | 68.679.055 | 1,41 |
| 2019 | 1.066.870.670 | 71.124.711 | 1,49 |
| 2020 | 334.053.041 | 22.270.203 | 1,64 |

*Note: Data obtained from the book "Gas Natural en el Ecuador" Zambrano et al. (2021).*

By the year 2021, it is estimated that 9 out of 10 households nationwide will use gas as the primary fuel for cooking, leaving aside other uses such as: for business, vehicle or water heating, for which they should acquire 45 kg cylinders, whose value is not subsidized, forcing the people to supply their needs with the 15 kg cylinder.

In the province of Santa Elena, the use of domestic gas cylinders is as constant as in the rest of the country, but this activity is more relevant because the province is one of the country's leading distributors. This fact has generated that it is one of the sectors that have been growing, and it was considered for this research because, in 2020, it was part of the group required to issue electronic invoices.



## 2. Materials and Methods

The present research work has a non-experimental quantitative approach of a descriptive-cross-sectional type directed to the analysis of the effects caused by the use of electronic invoicing in the taxpayers dedicated to the distribution of gas for domestic use. The inductive method was used because it allowed an analysis of the particular characteristics of the collection centers and distributors of gas for domestic use, referring to the dimensions proposed in the research.

In addition, the study provides breadth to the research by obtaining significant information that allows the researcher to have a basis for studying phenomena. For this reason, the analytical method was also used, allowing to break down into parts each of the elements involved in the research through the analysis of the theoretical information collected to reach the intended purpose and to have clarity in the object of this study.

### Population and Sampling

The selected population is the total number of active and registered companies with the activities: G4730.02 "Sale of gas in cylinders, coal and firewood for domestic use in specialized establishment" for the year 2021 in the province of Santa Elena.

Table 2 shows that there is a varied corporate population: 82 authorized businesses distributed as follows:

*Table 2. Population of companies engaged in gas cylinder distribution, 2021*

| Type of Taxpayer | N | % |
|---|---|---|
| Microenterprises | 36 | 43.9 % |
| Small Business | 17 | 20.7 % |
| Medium Company | 21 | 25.6 % |
| Large Company | 8 | 9.8 % |
| **Total** | **82** | **100,0%** |

*Note: Data obtained from the Superintendence of Companies.*

Since it is a finite population, no sampling was calculated; direct information was obtained from the total number of taxpayers, using the survey technique and the questionnaire as an instrument, whose questions were aimed at finding out the opinion of the taxpayers and their experience with electronic invoicing.

The survey was carried out using the Microsoft Form platform because the location of some of those involved in the research was difficult to contact due to the area in which their businesses were located,

As for data processing, pivot tables were constructed in Microsoft Office Excel spreadsheet.

## 3. Discussion and Results

Prior to the analysis of the survey, Table 3 shows the income of the sector under study for the period 2012 to 2021.

*Table 3. Revenues of the Domestic Gas Cylinder Distributor Sector*

| Year | Revenues |
|---|---|
| 2012 | 507,000 |
| 2013 | 1,361,750 |
| 2014 | 1,443,000 |
| 2015 | 1,404,000 |
| 2016 | 1,326,000 |
| 2017 | 1,287,000 |
| 2018 | 1,248,000 |
| 2019 | 1,170,000 |
| 2020 | 1,131,000 |
| 2021 | 1,092,000 |

*Note: Data obtained from Superintendencia de Compañías.*

Regarding the income from invoicing in Ecuador, about the year 2021 in the item social assistance activities 113,774,841, which is the highest item, followed by food service activities, with 42,767,385, being among the lowest the activities of employers in households with 18,876.

The main results of the surveys conducted are shown below.

*Table 4. The environment influences e-invoicing adoption*

| Detail | Quantity | Percentage |
|---|---|---|
| Always | 61 | 74,39% |
| Almost always | 12 | 14,63% |
| Never | 9 | 10,98% |
| **Total** | **82** | **100,00%** |

*Note: Data obtained from a survey conducted by the author.*

As shown in Table 4, 74.39% of taxpayers in the surveyed sector consider that indicators such as public administration, economic activity, suppliers and customers always influence the adoption of the electronic invoicing system.

*Table 5. Culture influences the adoption of electronic invoicing.*

| Detail | Quantity | Percentage |
|---|---|---|
| Always | 23 | 28,05% |
| Almost always | 18 | 21,95% |
| Regularly | 14 | 17,07% |
| Almost never | 0 | 0,00% |
| Never | 27 | 32,93% |
| **Total** | **82** | **100,00%** |

*Note: Data obtained from a survey conducted by the author.*

Table 5 shows that 32.93% of those surveyed believe that the IRS does not consider aspects such as values, beliefs, tax culture and other qualitative aspects of the taxpayer in the obligation to issue electronic invoices.

*Table 6. Perception of security and use of electronic invoicing*

| Detail | Quantity | Percentage |
|---|---|---|
| Always | 38 | 46,34% |
| Almost always | 12 | 14,63% |
| Regularly | 23 | 28,05% |
| Almost never | 9 | 10,98% |
| Never | 0 | 00,00% |
| **Total** | **82** | **100,00%** |

*Note: Data obtained from a survey conducted by the author.*

Table 6 shows the results of the surveys regarding taxpayers' opinions on the usefulness of the electronic system. 46.34% consider this a valuable system for developing activities and that the processes are carried out faster, more efficiently, securely and transparently.

*Table 7. Perception of satisfaction with the use of electronic invoicing*

| Detail | Quantity | Percentage |
|---|---|---|
| Always | 49 | 59,76% |
| Almost always | 23 | 28,05% |
| Regularly | 10 | 12,20% |
| Almost never | 0 | 00,00% |
| Never | 0 | 00,00% |
| **Total** | **82** | **100,00%** |

*Note: Data obtained from a survey conducted by the author.*

Table 7 reflects the percentage of satisfaction that gas distributors have when using electronic billing; 59.76% consider that they are always satisfied when using the system, and 12.20% consider that their experiences in the use of the biller are regularly satisfactory and consider that there is room for improvement.

## 4. Conclusions



The results show that the change from physical to electronic invoicing brings several advantages in the following aspects: cultural, social, economic and legal, highlighting the improvements that electronic invoicing brings and can lead the business to improve its performance and efficiency in the long term.

The influence that the use of electronic invoicing has on taxpayers whose activity and line of business is the sale of gas for domestic use is mainly due to the tax administration governed by the IRS since it is the one who, under a calendar, imposes the obligation to issue electronic receipts, which in turn helps to improve the general collection required by the Executive Function to meet its needs.

Business owners state that it will take some time for taxpayers to adapt to electronic invoicing since they are used to being given a physical document because certain clients consider it more reliable; however, when analyzing the advantages, they consider that, with the passage of time and adaptation to the changes that have occurred, they will obtain many health benefits for the business.

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