

Eficiencia de la contabilidad simplificada como herramienta para generar información financiera

Efficiency of simplified accounting as tool to generate financial reporting

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Resumen

El objetivo del presente trabajo es demostrar la eficiencia de la contabilidad simplificada como herramienta para generar información financiera, útil al usuario en general, en la toma de decisiones efectivas sobre los recursos materiales y financieros orientadas a incrementar el desarrollo del negocio o empresa; derivado de este fenómeno, se desarrolló un software financiero con base en la Normatividad de la Información Financiera y las leyes fiscales mexicanas. La investigación fue de tipo descriptiva, correlacional, no experimental, no probabilística, conformada por 90 sujetos. Se creó un instrumento conformado por 20 ítems con base en la Norma ISO 9126, estructurado con escala tipo Likert y con un alfa de Cronbach de 0.90. El análisis estadístico muestra las variables con mayor valor predictivo en la eficiencia, lo que permite deducir que el

software puede incorporarse en las gestiones empresariales y su relación con las autoridades fiscales en México.

Palabras clave: Eficiencia, ISO 9126, software, contabilidad, información.

Abstract

The aim of this paper is to demonstrate the efficiency of the simplified accounting as a tool to generate financial, useful information to the user in general, in making effective decisions about materials and financial resources aimed at increasing business development or enterprise; derivative this phenomenon, a financial software was developed based on the Regulation of the financial Information and the Mexican tax laws. The research was descriptive, correlational, not experimental, nonrandom, consisting of 90 subjects type. A staff of 20 items based on the ISO 9126 standard instrument, structured Likert scale with a Cronbach's alpha of 0.90. El statistical analysis shows the variables with the highest predictive value was created in efficiency, so it can be deduced that the software can be incorporated into business management and its relationship with the tax authorities in Mexico.

Key Words: Efficiency, ISO 9126, software, accounting, information.

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Introduction

Businesses in Mexico are classified according to their activity, capital and number of employees (Article 3 LDCMPME), it is done with the purpose of clearly defining the business status of the business (Table 1), regardless of the magnitude, activity or type of company, organizations carry out acts of commerce that require having evidence through the registration of operations and generate information in order to know the situation at a certain date and the development that the company has had at the end of the period, empirically it has been observed that businesses keep their accounting through an

informal technique, it only shows what is sold or sometimes what is spent, without showing interest on the remnants or surpluses of the items that intervene in debts and credits.

Table1. Stratification of micro, small and medium enterprises

Estratificación por Número de Trabajadores			
Sector/Tamaño	Industria	Comercio	Servicios
Micro	0-10	0-10	0-10
Pequeña	11-50	11-30	11-50
Mediana	51-250	31-100	51-100

Fuente: Secretaria de Encomia y Secretaria de Hacienda y Crédito Publico

The development of this proposal consists of designing a technological model of simplified accounting to generate financial information, through the use of the personal computer. This new financial application will allow generating information on the resources that the business has, as well as the debts and the investment that prevails; The information generated with the use of software will allow the business owner to know in advance the financial status, being aware of the situation and the results obtained in a given period, will promote greater efficiency and effectiveness in the application of resources.

The general objective of the research is to show the efficiency of simplified accounting to improve the business decision-making process, since it is important to provide the entrepreneur with a simple accounting system with quality that contains elements established in the law as an important part of comply with an obligation established by law.

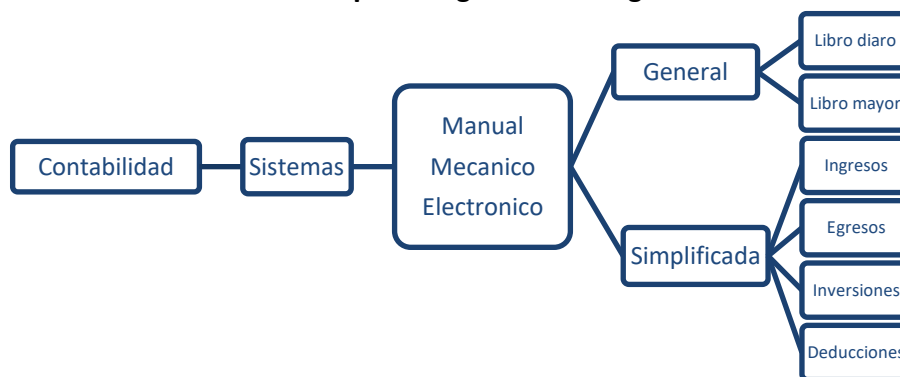
The Spanish royal academy defines accounting as the aptitude of things to be able to reduce them to account or calculation. System adopted to keep account and reason in

public and private offices, denotes the simplification of the way of keeping business accounts through the application of systems that make known the reason for the origin and application of resources, in In the same sense, the regulation of financial information issued by the Mexican Institute of Public Accountants defines it as the technique used to record the operations carried out by an entity and that systematically and structuredly produces financial information (NIF A1, P3, 2013).

Based on article 33 of the commercial code (CC, 2013), it is established that every business or company has the obligation to manage an accounting system according to its needs, and must comply with requirements that allow the operations carried out to be identified and that contain the original vouchers of said operations, allow integrating the balance or global movements of a period, serve as a basis for the preparation of financial information; include an internal control system to ensure the registration of all operations generated in the company.

Another foundation is established in article 28 of the federal tax code (CFF, 2013), establishes that the obligation to keep accounts through the analytical accounting record through manual, mechanical or electronic systems, likewise, in the same system establishes two types of accounting: general made up of daily and ledger, and simplifies made up of books of income, expenses and registration of investments and deductions (Graph 1).

Graph 1. Legal accounting model



Font: Own elaboration

The importance of incorporating accounting-financial software with quality in tax management and also contributing to the objective of the economic development plan of Mexico is transcendental; as well as having evidence that shows compliance with the criteria and indicators established by international quality standards.

Efficiency is the ability to achieve an objective through the desirable relationship between factors and production results, that is, maximizing resources with minimal effort and better results.

Currently in the information and knowledge society, software applications are a success factor, by which companies use more efficient tools in order to make their management more efficient in a practical way, however, quality turns out to be an important factor. In applications because one of its purposes is to improve and facilitate internal operations, minimizing costs and time (Omaña and Cárdenas, 2010). Pressman (2002) mentions that the information process establishes greater areas of application of technological programs, the constant transformation is directed towards the renewal of management information systems (GIS), these applications provide representative data to facilitate commercial operations or manage decision making; In addition to the activities required in data processing, mobile applications also promote interactive calculations. Likewise, due to the widespread use and the trust of people in the applications, it is important to highlight the guarantee in compliance with quality and reliability.

Moreno (2008) developed a model for evaluating the quality of website use, based on the ISO/IEC 9126 4 standard, called SW-AQUA, which measures four aspects: effectiveness, productivity, security and satisfaction in the area of school control of the Technological Institute of Motul with a sample of 8 participants, the study demonstrated the level of quality in its use, determining an excellent level in its effectiveness, productive, safe and satisfies the needs of the users in the standard levels of quality.

Likewise, Solarte (2009) designed a quality model for software processes, in which he performed a meta-analysis of the quality models: the ISO/IEC standard, the integration of

the CMMI capability maturation model and the IT MARK quality for SMEs, to determine the benefits and drawbacks of quality software development; determining that the CMMI model contributes to improving work processes and the model to obtain certification.

In a study carried out by Chaustre, Bolaños & Navia (2010) in Colombia, an approach to the quality practices of mobile applications in MSMEs, it can be seen that the level of software quality based on quality metrics is scarce. or null, because for companies it is important to meet the requirements set by the client and without considering the certification or quality evaluation, the only way they have to know if their product is suitable and accepted by their client, since great part of the developers deals only with creating software without using any model or standard to measure the quality of their projects, or the quality characteristics of the product, because the development processes are based on a complete specification of requirements, construction and tests; they present maladjustments to the rapid development of applications, sometimes implying that the quality of the software product must be sacrificed in favor of user deliveries, speed and low cost.

Omaña and Cárdenas (2010), in a contribution to the development of quality software, carried out a non-experimental, descriptive and cross-sectional documentary study at the Simón Bolívar University, Venezuela; called Lean Manufacturing, with a view to the universities that offer courses in the area of computing, systems or informatics, can train professionals capable of responding to the needs of the environment, based on the premise that the software developments carried out to date do not satisfy expectations of development time, reliability, maintainability, portability and quality. Version 4 of SQLfi was evaluated under a systemic model of software quality (MOSCA) applied to a population of 26 subjects with an intentional sample of 11, obtaining a null systemic level of quality, for which they concluded in the proposal of the adoption of a development model for the construction of quality software based on established standards of lean manufacturing (Lean Manufacturing). The contribution corresponds to an improvement of

the systemic quality of software development that allows obtaining products in an agile way, at a reasonable cost and with the budgeted resources. The prototype of the model allows identifying the strengths and weaknesses of the software products studied. When evaluating the software products with the prototype, they verified their compliance with respect to the critical quality requirements established by the person interested in the evaluation and at the same time used the results to improve them. Since the evaluation is systemic, they identify the processes that influence certain characteristics of the products.

On the other hand, Santoveña (2010) designed an instrument of the quality of the virtual courses of the UNED in Spain, the instrument consists of 36 items organized in three dimensions: General quality of the environment and methodology, technical quality (navigation and design) and the quality of multimedia resources; in order to present a proposal for improvement.

Another model is the one proposed by Bertoa and Villecillo (2010) for software components in which the authors adapt the ISO/IEC 9126 standard to COTS (Commercial off-the-shelf) components. Rodríguez (2010) presents a methodology for the quality evaluation in UML models, formed by a structured set of processes oriented to quality evaluation, where from a review of standards, norms and methodologies related to the evaluation of software quality, the EVVE methodology was elaborated, under the following principles: formed by a structured set of processes, oriented to the relationship with the client and the outsourcing of quality assessment, easily adaptable; however, it identifies the what, when, and who, of each of the phases and activities of the processes, as well as the sequence of steps that must be followed when carrying out the evaluation.

As we can see, there are investigations that evaluate quality from different approaches and methods, but to date there is no instrument that allows evaluating quality on a specific fiscal application. Quality is an efficiency factor in Software Engineering, among its purposes is to optimize technological resources in its development, this means an increase in productivity and organizational competitiveness; In these times, organizations around

the world recognize that the quality of the product can translate into cost savings. Software development companies are no exception, which is why in current times the growth in technological applications has made intense work to apply the concept of quality in this area (Abud, 2010).

Small businessmen require simplification financial accounting software, in order to comply with obligations before government agencies or banking institutions; The technology with the greatest reach by the user is the personal computer, which allows different actions to be carried out that cover their immediate needs, in the financial context, it could be a tool for the purpose of improving business management processes, as well as providing information on the situation and development of the business, in a practical, simple, reliable and, above all, timely manner; In order to comply with business demands, software was designed to run on a computer that contains provisions contained in the Federal Tax Code and the Federal Tax Code Regulations.

The creation of accounting software requires constant linkage with efficiency models that allow demonstrating the levels of excellence of the products and measurement instruments, including variables, indicators and factors that qualify each of the attributes that make it up. For the development of this research, an instrument was created based on the ISO 9126 Standard (ISO9126, 2011), the 14958 standard in section 5 (ISO 14958, 2010), establishes internal and external criteria for the evaluation of the quality of flexible technologies, in this sense, the quality measurement instrument is made up of 20 items considering 6 variables (functionality, reliability, portability, efficiency, maintainability, usability), structured on a Likert-type scale, considering 1 for excellent; 2 good; 3 fair; 4 deficient; and 5 bad. The instrument was applied to 90 active certified public accountants, who currently provide advisory services, consulting to entrepreneurs engaged in commercial activities, in addition to meeting the necessary criteria for its use and application in accounting practice.

At the beginning of the evaluation, the participants were informed of the objective of the study, to evaluate the efficiency of the financial software, the file was provided on CD, they were told that the development of the simple accounting model was designed based on Mexican tax legislation; the process of installing the software on your personal computer, how to use it and execute it; in order to analyze, process, and report on the results required by the entrepreneur, on the behavior of his business and on the profits earned by carrying out economic activities, It could also be applicable in tax management, the Tax Administration Service (SAT) publishes on its website the tax log with a sheet that helps the taxpayer to control sales and expenses, obtaining in a practical way, the base results to find out and pay taxes; the contribution must be determined, calculated and withheld by the employer himself to be paid in the period specified by law; In addition, the type of technology where it can be used was specified. Likewise, to use it during practice and start the evaluation process.

In the second phase, the concepts that make up the financial software were described, the amounts that must be entered to obtain the results required by the interested user and by the corresponding authority were explained; all participants are associated with the concepts that are handled in the software.

In the third phase, a session lasting approximately 30 minutes was held, the software was presented, its operation was explained, real practical cases were carried out, workers were provided with data to use the financial software and in this way the employees were trained. subjects to use the program, later, the instrument was provided to start their evaluation.

In the data processing, the statistical package *Statistical Package for the Social Sciences (SPSS, Version 19.0)* was used, through the use of the program the descriptive analysis was carried out, with the purpose of having an overview of the results obtained, an analysis

was carried out through of the application of the measures of central tendency in the variables and finally to each one of the predictive factors of quality; an inferential analysis with the purpose of arguing about Pearson's correlation, in order to find the degree of relationship between the quality variables; in addition, linear regression to predict the variables that most strongly influence quality.

The sample was chosen from a population of 90 subjects, where 100% (n = 90) voluntarily agreed to participate in the study. 60% (n = 54) were men and 40% (n = 36) women, who used the accounting program on their personal computer as a tool to control income, expenses and investments (Table 1).

Género	Frecuencia	Porcentaje
Femenino	54	60
Masculino	36	40
Total	90	100.0

Frame 1. Sample distribution table by gender.

Regarding the age of the participants, 12.5% (n = 11) were 35 years old, 31.7% (n = 29) were 36 years old, 24.2% (n = 22) 37 years old, 15.8% (n = 14) 38 years old, and 15.8% (n = 14) were 39 years old (Table 2).

Edad	Frecuencia	Porcentaje
35 años	11	12.5 %
36 años	29	31.7 %
37 años	22	24.2 %
38 años	14	15.8 %
39 años	14	15.8 %

Edad	Frecuencia	Porcentaje
Total	90	100.0 %

Frame 2. Sample distribution table by age.

Of the total sample, the participants used different computers: where I predominated 35% (n = 32) that used HP, 25% (n = 22) Sony, 25% (n = 22) Samsung, and the only 15% (n = 14) with Toshiba (Table 3).

Computadora	Frecuencia	Porcentaje
HP	32	35 %
Sony	22	25 %
Samsung	22	25 %
Toshiba	14	15 %
Total	90	100 %

Frame 3. Distribution table by cell phone brand.

Regarding the type of activity of the participants, it is services, where 60% (n=72) were destined to commerce, 15% (n=18) were destined to services and 25% (n=30) were destined to transformation and industry (Table 4).

Actividad	Frecuencia	Porcentaje
Comercio	54	60 %
Servicios	13	15 %
Transformación	23	25 %
Total	90	100.0 %

Frame 4. Distribution table by activity.

The descriptive evaluation criteria: Mean (\bar{X}) and Standard Deviation (SD) of the quality indicators, we have that the global quality level is 1,136, in each of its subscales: efficiency, portability, functionality, usability, reliability and maintainability tend to be excellent (Table 5).

	Factores						Total Calidad
	Funcionalidad	Fiabilidad	Usabilidad	Eficiencia	Mantenibilidad	Portabilidad	
\bar{X}	1.175	1.125	1.135	1.125	1.125	1.135	1.136
D.E	.082	.095	.095	.085	.085	.085	.087

Frame 5. Table of predictors of quality.

Regarding the correlation between subscales, as well as quality, we observed that usability correlates in a very strong positive way with maintainability; as well as reliability with efficiency, maintainability with portability; reliability with portability; the other variables are related in a considerable positive way; This shows us that in all the variables there is a very strong positive correlation with quality (Table 6).

Variables de calidad							
	Funcionali dad	Fiabilid ad	Usabilid ad	Eficien cia	Mantenibili dad	Portabili dad	Calid ad
Funcionalid ad	1.0						
Fiabilidad	.725**	1.0					
Usabilidad	.863**	.896**	1.0				
Eficiencia	.934**	.975**	.875**	1.0			
Mantenibili dad	.895**	.840**	.986**	.938**	1.0		
Portabilida d	.958**	.826**	.825**	.879**	.965**	1.0	
Calidad	.900**	.975**	.974**	.943**	.965**	.939**	1.0

Frame 6. Pearson Correlation Table.

*p < 0.05; **p < 0.01

The results show that the use of software on the personal computer in financial practices maintains an excellent level of efficiency in business management, the participants' perception of legal and financial requirements provides information necessary to properly apply the resources available to the organization. company during the period of activity; it is a tool that can be didactic in the labor, academic and governmental field.

Discussion

The sample was composed of 40% women and 60% men, which is why this research maintains an active participation in professional activities by men. The ages ranged from 35 to 39 years, highlighting that the most representative data belongs to 37 years of age, representing 24.2% of the sample, which indicates that this type of mobile device is used

by dedicated young adults in an informal way. constant to business management.

In the study, the use of HP brand cell phones predominated with 35%, with a frequency of 32 subjects, against the remaining 25% for the brands: Sony and Samsung, with a frequency of 22 subjects respectively; Toshiba with 15%, with a frequency of 14 subjects, respectively, highlighting that the predominant brand in use among the participants is HP.

Likewise, 100% of the participants know the concepts that are involved in simplified accounting income taxes in the participation of workers in profits, 60% of the participants provide services in the commercial activity, 15% to services activity and 25% to the industrial sector, highlighting that in the participants' area there is a predominance of commercial activity, that is, the purchase and sale of products.

Knowing the simplified accounting, the software has greater acceptance by the participants, in addition the concepts included are based on the provisions applicable to the year 2013, as well as the general minimum wage and the tables issued by the authority to perform the calculation.

The measurement instrument obtained a Cronbach's Alpha Coefficient of $\alpha=0.90$, which indicates a very good level of reliability. The perception of the subjects in general shows a level of excellence and high compliance with respect to efficiency ($X = 1.025$ with standard deviation of .085), portability ($X = 1.035$ with a standard deviation of .085), functionality ($X = 1.175$ and a standard deviation of .095), usability ($X = 1.135$ with a standard deviation of .095), reliability ($X = 1.125$ with a standard deviation of .095) and the maintainability of the tool ($X = 1.125$ with a standard deviation of .095); In general terms of quality, a mean of 1.085 with a standard deviation of .075 was obtained, which means that the software has an excellent level of quality to be adopted in accounting practice.

In Pearson's correlation, twenty-one significant correlations were found out of a total of twenty-one possible ones. The highest correlations were between maintainability and

usability ($r = .986$), quality shows significant positive correlations with reliability ($r = .975$), usability ($r = .974$), maintainability ($r = .965$), efficiency ($r = .943$), portability ($r = .939$), and functionality ($r = .900$); This means that the structure, executions and functions contained in the tax mobile application reduce the response time and make the use of the smartphone in financial processes more efficient and effective.

The determination coefficients (r^2) allowed knowing the level in which each independent variable predicts the behavior of the dependent one. All the variables showed a high level in predicting the behavior of the quality variable: reliability ($r^2 = .975$), portability ($r^2 = .939$), efficiency ($r^2 = .943$) and functionality ($r^2 = .900$); maintainability ($r^2 = .965$) and usability ($r^2 = .974$), the recognition of the quality of the application allows us to consider that it can be used by the entrepreneur in the knowledge of the situation and results of the company's operations, decision-oriented and possibly meeting tax obligations.

conclusion

Accounting software presents significant quality results for business activities in financial practice, currently the entrepreneur is looking for technological programs with immediate solutions to provide more efficient and effective information; likewise, businessmen seek to obtain information that streamlines accounting, administrative, financial and governmental processes; and the tax authorities seek to provide technological tools that are useful to the entrepreneur, aimed at complying with the payment of contributions in a simple, practical and reliable way.

The financial accounting software, being considered with an excellent level of quality by the user, meets the criteria required by the ISO 9126 standard with the aim of improving administrative procedures and methods aimed at compliance with the different institutions to which it is subject. the entrepreneur from period to period, by presenting levels of excellence in their specific functions, does not require investing great effort since its design guides the user in inserting data with ease, its attributes allow increasing the

use of applications that are easy to execute, contributing immediate solution in accounting practices, the high levels of efficiency based on the immediate response time and the use of the type of resource allow immediate, real and true results to be obtained, the optimal levels of maintainability allow the software to remain in execution at moment of being required and executed with satisfactory results; its portability allows it to be transferred from one place to another; the excellent level of reliability provides sufficient elements to be considered as an accounting tool with inclusion in the financial policy and ease in the country's tax procedures.

By developing technological applications that justify the quality of the accounting processes, in a specific case, the determination and calculation of the financial situation of the business and the result in profits, the reason for this research, and incorporating it into the business and professional area, offers important social, economic benefits. that affect financial management such as the availability and obtaining of information in seconds from any place and time, granting efficiency in the capture of data in an easy and specific way, providing mobility in the functions and hierarchy in social organizations, with the mission of facilitate decision making; solutions that are perfectly integrated to the demands of the globalized technological world with simple applications for carrying out efficient tax management and compatible with the information system that the company has for the benefit of the subjects of the tax relationship, improving government processes.

The conclusions of this study reveal that accounting software will revolutionize the simplification of business processes, increase competitiveness and productivity; As a result of the implementation of accounting software with requirements in the legal provisions, it will promote efficiency both internally and externally with timely information on the business situation, used with the vision in the payment of contributions in accordance with the legal provisions of the country. By providing software that allows the financial accounting system to be integrated into any size of

company during the fiscal year, better opportunities for growth and proper application of resources will be provided. Future work on this line of research aims to incorporate this type of flexible technology into the electronic transfer of data, sufficient information to verify and check the way of obtaining the results by electronic means, so busy by users in Mexico in order to simplify time and use in financial management.

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