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Artículos Científicos

Aplicación inteligente en la práctica profesional del contador público en el área fiscal

Intelligent Application in the Professional Practice of the Public Accountant in the Tax Area

Aplicação inteligente na prática profissional do contador público na área tributária

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Resumen

El objetivo de este estudio fue diseñar y evaluar una aplicación inteligente para ser utilizada por el contador público como herramienta en la prestación de sus servicios profesionales. Esto con el propósito de informar al contribuyente, en especial a las personas físicas con actividad empresarial, sobre los impuestos federales en México, tal y como el impuesto sobre la renta (ISR) y el impuesto al valor agregado (IVA). El diseño de la aplicación inteligente se estructuró conforme a las disposiciones contenidas en las leyes fiscales del periodo 2019. Para la evaluación se creó un instrumento con base en la norma ISO 9126, norma internacional que especifica las variables que conforman la calidad de la aplicación. Dicho instrumento fue aplicado a 50 contadores públicos certificados, quienes utilizaron la herramienta en el Colegio Profesional de Contadores Públicos, en el Estado de México. El procedimiento para la obtención de datos se realizó en cinco etapas (propósito, descripción, análisis, práctica y evaluación). Después de su aplicación, se realizó el procesamiento de datos mediante el programa SPSS versión 20. Al aplicar estadística descriptiva e inferencial, se pudo conocer el nivel de calidad de la aplicación inteligente fiscal y cada una de las variables que la conforman: Funcionalidad, Confiabilidad, Usabilidad, Eficiencia, Mantenibilidad y Portabilidad. Los resultados arrojaron que las funciones y propiedades específicas para cubrir las necesidades del usuario y cumplir con eficacia las tareas o actividades fiscales ofrecen un rendimiento de nivel excelente.

Palabras clave: aplicación informática, impuesto sobre la renta, trabajos prácticos, tributación.

Abstract

The objective of this study was to design and evaluate an intelligent application to be used by the public accountant as a tool in the provision of their professional services. This with the purpose of informing the taxpayer, especially individuals with business activity, about federal taxes in Mexico, such as income tax (ISR, by its acronym in Spanish) and value added tax (IVA, by its acronym in Spanish). The design of the application was structured according to the provisions contained in the tax laws of the 2019 period. For the evaluation, an instrument was created based on the ISO 9126 standard, an international standard that specifies the variables that make up the quality of the application. This instrument was

applied to 50 certified public accountants, who used the tool at the Colegio Profesional de Contadores Públicos in the Estado de México. The procedure for obtaining data was carried out in five stages (purpose, description, analysis, practice and evaluation). After its application, data processing was carried out using the SPSS version 20 program. By applying descriptive and inferential statistics, it was possible to know the quality level of the intelligent fiscal application and each of the variables that make it up: Functionality, Reliability, Usability, Efficiency, Maintainability and Portability. The results showed that specific functions and properties to meet user needs and effectively fulfill fiscal tasks or activities offer excellent performance.

Keywords: computer application, income tax, practical work, taxation.

Resumo

O objetivo deste estudo foi projetar e avaliar um aplicativo inteligente a ser utilizado pelo contador público como ferramenta na prestação de seus serviços profissionais. Com o objetivo de informar o contribuinte, principalmente as pessoas físicas com atividade empresarial, sobre os tributos federais no México, como o imposto de renda (ISR) e o imposto sobre o valor agregado (IVA). O design da aplicação inteligente foi estruturado de acordo com o disposto na legislação tributária do período 2019. Para a avaliação, foi criado um instrumento baseado na norma ISO 9126, norma internacional que especifica as variáveis que constituem a qualidade da aplicação. Este instrumento foi aplicado a 50 contadores públicos credenciados, que utilizaram a ferramenta na Associação Profissional de Contadores Públicos do Estado do México. O procedimento de obtenção dos dados foi realizado em cinco etapas (objetivo, descrição, análise, prática e avaliação). Após a sua aplicação, o processamento dos dados foi realizado no programa SPSS versão 20. Por meio da aplicação da estatística descritiva e inferencial, foi possível conhecer o nível de qualidade da aplicação fiscal inteligente e cada uma das variáveis que a compõem: Funcionalidade, Confiabilidade , Usabilidade, Eficiência, Capacidade de Manutenção e Portabilidade. Os resultados mostraram que funções e propriedades específicas para atender às necessidades do usuário e cumprir com eficácia as tarefas ou atividades fiscais oferecem excelente desempenho.

Palavras-chave: aplicação informática, imposto de renda, trabalho prático, tributação.

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Introduction

Mobile technology has brought new ways of doing academic and professional activities. At the same time, this technology has brought new demands in both fields. In particular, the use of electronic means in the functions and activities of the public accountant is distinguished by bringing immediate solutions to certain activities related to the fiscal context. How much do I have to pay? How is income tax (ISR) calculated? How is value added tax (VAT) calculated? Why do I have to pay that amount? What can I deduct? How do I carry out my operations? These are some of the questions that are constantly raised in the tax area.

The objective of this study was to design and evaluate an intelligent application to be used by the public accountant as a tool in the provision of their professional services. This with the purpose of informing the taxpayer, especially individuals with business activity, about federal taxes in Mexico, such as ISR and VAT. The design of the smart application was structured in accordance with the provisions contained in the tax laws of the 2019 period. For the evaluation, an instrument was created based on the ISO 9126 standard, an international standard that specifies the variables that make up the quality of the application. This instrument was applied to 50 certified public accountants, who used the tool at the Professional Association of Public Accountants, in the State of Mexico. The procedure for obtaining data was carried out in five stages (purpose, description, analysis, practice and evaluation). After its application, the data processing was carried out using the Statical Package for the Social Sciences (SPSS, version 20) program. By applying descriptive and inferential statistics, it was possible to know the quality level of the smart fiscal application and each of the variables that make it up: Functionality, Reliability, Usability, Efficiency, Maintainability and Portability.

The results showed that specific functions and properties to meet user needs and effectively fulfill fiscal tasks or activities offer excellent performance. When used by the user under normal operating conditions, the response time is equally satisfactory. The ease of use, of learning, of rapid data processing, of modifying and correcting, make the intelligent tool

show a certainty in the results on taxes paid by the taxpayer, and its portability allows it to be used at any time that is required. The tool provides reliable, comparable, understandable and relevant information, useful for the fulfillment of the tax obligations of Mexican taxpayers, all of which is aimed at avoiding sanctions, infractions and fines that affect the assets of the entity or business and improving processes tax management; It can be seen as a guide to present the declaration on the platform of the tax authority. In short, it guarantees a professional performance with quality; provides reliable, relevant and understandable information at the time required by the contractor of the service, and provides the basis for reporting with certainty and precision. Without a doubt, the application can be used and incorporated into tax practices in order to improve the management of tax collection in Mexico.

History of the problem

The Political Constitution of the United Mexican States (2020), considered the supreme law in Mexico (Quintanilla and Rojas, 1999; Sánchez, 2014), establishes the obligation of Mexicans to contribute to the public expenses of the federation, the state and of the municipality in which they reside. From the content of this provision emanates the obligation to pay the tax by employers from the provisions established by federal or state law. In addition, taxes must be equitable and fair considering the economic capacity of the subject of the tax relationship.

From the constitutional system, a legal link arises between two subjects: the active subject represented by the State, who is empowered to demand compliance and payment of taxes in Mexico, and the taxable person, represented by the employer, who has the obligation to comply with the provisions established in the tax laws materialized through the payment of taxes. Taking this binomial into account, Gianni (cited in Diez, 2005) establishes that the State administers the assets derived from the collection of taxes, and invests them directly in the development of its activities. Garza (2005), for his part, refers that the State and other public entities carry out actions aimed at obtaining the necessary income to sustain public services.

This activity is known as financial activity of the State: it regulates ordinary and extraordinary income and expenditures of the state organization. To carry out this activity, the State, through the Ministry of Finance and Public Credit (SHCP) (the body in charge of

collecting taxes), implements strategies that facilitate tax management for the taxpayer. Among them, in recent decades, it has established platforms for electronic government or e-government, which allow the transition from the traditional model of a bureaucratic State to a modern model of a State that provides goods and services (Carranza, 2002). The Mexican Government must take advantage of information and communication technologies (ICT) to improve the internal management processes of the public administration and thus provide better services, facilitate the obtaining of applications, allow access to information, increase accountability , transparency and strengthening citizen participation (Secretariat of Public Function [SFP], 2019).

An alternative to improve tax management processes is the incorporation of flexible technology: mobile government (m-government), which refers to ICTs related to wireless or mobile technologies such as cell phones / smartphones, laptops and assistants digital personal data (PDA, for its acronym in English) connected to local wireless networks (Carrión and Larenas, 2009, p. 8).

The smartphone or smart phone is a communication device that can be moved from one place to another. This device allows the communication of voice, images, text, videos and sounds; allows entertainment with games from different platforms, access to the Internet and multiple functions of practical utility that impact the social, work and professional life of its users (Malo, Casas, Figuer y González, 2006).

In a note published in El Economista (Notimex, June 28, 2019) it is reported that during the first quarter of 2019, 120.7 million mobile lines were counted in the country, 3.6% more than the base reached the previous year. Of these, 81.8% or 98.7 million correspond to the prepaid modality and 22.0 million (18.2%) to postpaid, according to a study by the consulting firm The Competitive Intelligence Unit (The CIU). How many of them are used to connect to the m-government? There's no answer. However, every good professional accountant, who has clients who need to cover tax obligations, makes use of wireless technologies to effectively and efficiently fulfill the client.

The m-government has been a useful tool for accountants, however, each year they have to solve a problem: the fiscal changes that are implemented annually by the federal government. These changes give rise to the need for the accountant to receive training to understand the changes, why and how to apply them. They go to seminars, conferences,

accountancy associations and colleges, and institutions of higher education in search of relevant knowledge.

Those who attend constant updates on the accounting profession and trainings through face-to-face and distance courses make use of ICT. This situation is the basis of the idea behind the study presented here: to develop and evaluate an application for a smartphone that leads the user to provide a professional service in an agile and efficient way, and at the same time, facilitate their work.

The complexity of Mexican tax laws, the reforms that are made annually, the lack of efficiency and effectiveness in accounting advice to the employer affect the time of complying, in a timely manner, with the tax legal obligations of the individual or the Owner of the business.

Accountants require digital means that simplify procedures to comply with the requirements of the Tax Administration Service (SAT). The use of the smartphone is evolving in tax practice; It is promoting the design and development of tax applications based on current tax laws. Therefore, the fundamental purpose, the basis of the study presented here, is to have an intelligent application that contributes to the professional or taxpayer to improve the process and to make the full payment of federal taxes. The use of the electronic application will not only favor the public accountant, but also the taxpayer in paying their taxes in a timely manner and the authority to increase tax collection in Mexico.

Method

In this section the steps that were carried out in the development of the study are exposed, without ever losing sight of the objective of the research: to link the current environment with the practice carried out by the accountant professional in order to facilitate their development in the field fiscal.

The smart application design was carried out taking into account the concepts contained in the Income Tax Law (Chamber of Deputies of the H. Congress of the Union, December 11, 2013) and the Value Added Tax Law (Chamber of of Deputies of the H. Congress of the Union, December 29, 1978) and the development of the applications incorporated by the federal Government for the process of the payment and the entire federal tax.

In the design, all the necessary elements were considered to improve the conditions in the determination and calculation of federal taxes. The regulatory methodology was also considered in order to comply with a quality service: inform, present and promote compliance with the taxpayer's tax obligations.

Method description

1) The design and development of the mobile application was carried out taking care to comply with current Mexican tax provisions, and thus determine and calculate federal taxes. This through extreme programming, also known as XP methodology, which is an agile and flexible methodology used for software development. The Crimson Editor program was also used to develop the Java programming language and the Java 2 Micro Edition platform, aimed at developing applications for small devices with limited capabilities, such as the cell phone, in which it is possible to apply the executable file to carry out the tax practice (Prieto, 2005).

2) In order to exemplify the application of the cell phone in tax practice, the data of a taxpayer for the month of January 2019 were considered.

3) The procedure for calculating the income tax for the month of January 2019 was carried out manually: the profit or profit was calculated, subtracting the authorized deductions (expenses for the same period) from the total income obtained in that month; To the result obtained, the corresponding table of Article 96 of the Income Tax Law (Chamber of Deputies of the H. Congress of the Union, December 11, 2013) was applied, and the withholdings that were deducted from the determined amount They were carried out by legal persons.

4) The VAT calculation was made by subtracting from the total VAT collected or VAT transferred (originating from sales) the total VAT withheld by the legal entity and the VAT paid (creditable VAT) originated from the expenses of the month. Here we can have two possible results: VAT to pay or VAT in favor. The VAT payable is when the VAT charged is greater than the sum of the VAT withheld and the VAT paid; When the VAT charged plus the

withheld is higher than the VAT paid, we will have a VAT result in favor, which can be reduced by the VAT to be paid in subsequent periods.

5) The results obtained in the tax tool must be downloaded in the electronic format provided by the tax authority, which must be presented at the authorized institution closest to the taxpayer or on the bank's electronic platform.

6) To assess the quality of the tax application, the instrument was applied to 50 public accountants who are currently engaged in providing independent professional advisory / consulting services to individuals. All participants are associated with the concepts that were handled and the buttons contained to calculate the ISR and VAT.

Method implementation

Moving on to operationalization, the method was divided into five phases.

First phase

At the beginning of the evaluation process, the general procedure was explained to the participants and their voluntary cooperation was requested to use in a real situation and then evaluate the smart tax application through an instrument designed for that purpose.

a) They were explained what a tax application is.

b) In addition, the type of technology in which the tax application can be used was specified. Likewise, it was pointed out that the development of the technological model was developed based on Mexican tax legislation.

c) Subsequently, the file was provided by email, bluetooth and WhatsApp to be uploaded to your personal phone, and thus use the tax application and start the evaluation process.

Second stage

In this phase, the concepts that make up the tax application in each of the taxes involved in the determination were described.

a) The amounts that must be entered to obtain the results required by the tax authority were determined and explained.

Third phase

In the third phase, the 20-item questionnaire (Annex 1) was applied, which was previously piloted with a sample of five participants, professional service providers active in the SAT database, who indicated that the questions did not present difficulties in understanding it, so it was applied.

Fourth phase

In the fourth phase, a group session was held with a duration of approximately 50 minutes, where the software was presented, its operation was explained, real practical cases of taxpayers dedicated to providing independent professional services in a municipality of the State of Mexico; then they were provided with a taxpayer's data to use the tax application; in this way the subjects were trained to use the software.

Fifth phase

Data processing and analysis was carried out. For this, the SPSS statistical package (version 20) was used, a statistical computer program used as a quantitative analysis instrument that facilitates the management of data obtained in field research. Through this program the following was done:

a) A descriptive analysis, in order to have an overview of the results obtained.

b) An inferential analysis, in order to argue about the statements of the participants and in order to find the degree of correlation between the quality variables; Furthermore, linear regression was used to predict the variables that most strongly influence quality.

Results

The sample was chosen from a population of 50 subjects; 100% (n = 50) voluntarily agreed to participate in the study. Regarding gender, 60% (n = 30) were men and 40% (n = 20) women; all used the tax application on their cell phone as a tool to obtain tax information on federal taxes (table 1).

Tabla 1. Distribución de la muestra por género

Género	**Frecuencia**	**Porcentaje**
Femenino	20	40
Masculino	30	60
Total	50	100.0

Fuente: Elaboración propia

Regarding the age of the participants, 18.0% (n = 9) were 32 years old, 18.0% (n = 9) were 33 years old, 18.0% (n = 9) were 34 years old, 18.0% (n = 9) was 35 years old, 18.0% (n = 9) were 37 years old and 10.0% (n = 5) 36 years old (Table 2).

Tabla 2. Distribución de la muestra por edad

Edad	**Frecuencia**	**Porcentaje**
32 años	9	18.0 %
33 años	9	18.0 %
34 años	9	18.0 %
35 años	9	18.0 %
36 años	5	10.0 %
37 años	9	18.0 %
Total	50	100.0 %

Fuente: Elaboración propia

Regarding the type of services provided by the participants, 34% (n = 17) were for commerce, 28.0% (n = 14) were for services, and 38% (n = 19) were for transformation (Table 3).

Tabla 3. Distribución por prestación de servicios

Servicios	**Frecuencia**	**Porcentaje**
Comercio	17	34.0 %
Servicios	14	28.0 %
Transformación	19	38.0 %
Total	50	100.0 %

Fuente: Elaboración propia

Table 4 shows the mean (μ) and standard deviation (σ) of the predictors of quality, namely: Functionality, Reliability, Usability, Efficiency, Maintainability and Portability; as you can see, the level tends to be excellent.

Tabla 4. Factores predictores de la calidad

	Factores						**Total**
	Funcionalidad	Fiabilidad	Usabilidad	Eficiencia	Mantenibilidad	Portabilidad	
μ	2.20	2.70	1.60	1.50	2.90	2.04	2.16
Σ	0.981	0.641	0.320	0.207	0.220	0.180	0.424

Fuente: Elaboración propia

Regarding the relationship between the subscales, as well as quality, we can observe that there is a very strong correlation between the factors: Usability, Functionality, Efficiency and Maintainability (table 5).

Tabla 5. Correlación de Pearson

Variables de calidad							
	Funcionalidad	Fiabilidad	Usabilidad	Eficiencia	Mantenibilidad	Portabilidad	**Calidad**
Funcionalidad	1.0						
Fiabilidad	0.414**	1.0					
Usabilidad	0.748**	0.755**	1.0				
Eficiencia	0.506**	0.678**	0.827**	1.0			
Mantenibilidad	0.853**	0.473**	0.724**	0.457**	1.0		
Portabilidad	0.494**	0.222**	0.701**	0.585 **	0. 411**	1.0	
Calidad	0.845**	0.675**	0.970**	0.805**	0. 826**	0.732**	1.0

*$p < 0.05$; **$p < 0.01$

Fuente: Elaboración propia

Discussion

The sample consisted of 40% women and 60% men. In this study there is a slight variation between the participants, which reflects an opportunity for technological balance between genders.

The ages ranged from 32 to 37 years. The most representative data indicates that 73.7% belongs to the range of 32 to 34 years. Middle-aged participants have greater skill in handling technology, therefore, they tend to maximize technological resources, which generates reliability and certainty in the evaluation of the instrument.

Likewise, 100% of the participants are involved in the provision of professional services; broken down, 34% in commerce activities, 28% in services and 38% dedicated to the transformation of articles or products, which enriches and contributes to the fulfillment of the research objective, in addition to providing accurate information on the results of the evaluation. Technological applications favor and enhance the work of accountants, since they are focused on the requirements of each activity, therefore, they enable the correct and timely presentation of tax information before the relevant authority.

The measurement instrument obtained a Cronbach's alpha coefficient of □ = 0.921, which suggests an excellent level of reliability.

The perception of the subjects in general shows high compliance with the factors of Reliability (μ = 2.7000 and a standard deviation of 0.64138), Efficiency (μ = 1.5000 with a standard deviation of 0.207) and Functionality (μ = 2.2000 with a standard deviation 0.98143). In these variables, the lowest standard deviation corresponds to Reliability. The variables of Portability (μ = 2.0467 with standard deviation of 0.1800), Usability (μ = 1.6000 with standard deviation of 0.3200) and Maintainability of the tool (μ = 2.9000 with standard deviation of 2.220) present a good trend of compliance with the criteria quality, in addition to specifying an almost uniform standard deviation in the opinion of the participants.

In Pearson's correlation, 21 significant correlations were found out of a total of 21 possible. The highest correlations were between Functionality and Maintainability (r = 0.853). Quality shows significant positive correlations with Usability (r = 0.970), Functionality (r = 0.845), Maintainability (r = 0.826), Efficiency (r = 0.805), Portability (r = .0732) and Reliability (r = 0.414); There were no variables with which they did not present a significant relationship with the quality of the tax application.

The determination coefficients (r^2) allowed to know the level at which each independent variable allows predicting the behavior of the dependent one. The results suggest that the behavior of the variables Functionality, Reliability, Usability, Efficiency, Portability and Maintainability predict the behavior of the quality variable of the fiscal application in 94.0%. The variable with a very high level in the prediction of quality behavior is Usability (r^2 = 0.940); with a high level of prediction they are Functionality (r^2 = 0.712), Maintainability (r^2 = 0.681) and Efficiency (r^2 = 0.647); with a moderate level of prediction, Portability (r^2 = 0.536) and the Reliability variable (r^2 = 0.456). Statistically, they all show a significant level of prediction of the dependent variable.

Conclusions

The app, as a tool for solving practical cases in tax activity, has excellent quality levels; From this it can be inferred that it guarantees optimal professional performance, and provides reliable, relevant and understandable information to complement fiscal tasks.

When ICTs are incorporated, in addition to solving cases in a more immediate and practical way, the accountant professional also has the possibility of gradually developing intercontextual skills, aptitudes and attitudes; in short, autonomously acquire new skills aimed at personal and professional development in the tax context. The use of specialized apps in the tax area with quality not only promotes skills, it also creates a new way of solving the problems raised in a tax context immediately; A model is presented in which different real simulation scenarios can be generated that allows the professional to generate useful information for the employer and thus he can optimize business resources.

The use of specialized mobile applications that guarantee functionality in smart devices, electronic equipment, portability, that is, being transported from one place to another, maintainability, remaining executed when required, the reliability of the information it presents, usability that is given for the purposes pursued, the efficiency in terms of optimizing the electronic resource in data processing, allows the user to obtain financial, understandable, reliable, relevant and comparable information to comply with legal obligations and contribute with business development and obtain returns on the resources invested in the entity.

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Anexo 1

Calidad sobre la app para el pago de impuestos federales de las personas físicas

El objetivo de este instrumento es tener su opinión acerca de la calidad que tiene la aplicación (*app*) para el pago provisional del régimen profesional.

Se le solicita sea objetivo en sus respuestas, por tal motivo, lea cuidadosamente.

Instrucciones: Marque con un *x* en el número que considere, sea lo más objetivo posible.

- ¿Cuál es su edad?: _____
- ¿Cuál es su género?: (M) (F)
- Número de veces que usas el celular al día: (1 a 25) (26 a 50) (51 a 100)
- Para que usas con más frecuencia el celular: (Comunicación) (Entretenimiento) (Redes sociales) (Juegos) (Internet)
- Has descargado aplicaciones: (Gratis) (Pago)
- Cuentas con internet en tu móvil: (Sí) (No)
- Marca de celular: (Huawei) (LG) (Samsung) (Nokia)
- Prestación de servicios: (Comerciales) (Industriales) (Servicios)

1 = Malo *2* = Deficiente *3* = Regular *4* = Bueno *5* = Excelente

Funcionalidad					
Adecuación					
1) Las funciones contenidas para realizar la práctica son:	1	2	3	4	5
2) El uso del simulador para resolver la práctica es:	1	2	3	4	5
Exactitud					
3) El grado de exactitud en los resultados mostrados por el simulador son:	1	2	3	4	5
4) El proceso operativo que se realiza para cumplir con la objetivo de la actividad es:	1	2	3	4	5
Interacción					
5) La relación con este tipo de tecnología para realizar la práctica es:	1	2	3	4	5
Seguridad					
6) La inserción de los datos en las celdas activas o disponibles es:	1	2	3	4	5
7) El bloque que tiene las celdas para no insertar datos es:	1	2	3	4	5
Confiabilidad					
Madurez					
8) La ejecución de la aplicación para verificar fallas o errores en la práctica es:	1	2	3	4	5
Recuperación					
9) La capacidad para restablecer su funcionamiento es:	1	2	3	4	5
10) La capacidad que tiene la aplicación para recuperación de datos es:	1	2	3	4	5
Tolerancia a fallos					

11) El nivel de funcionamiento en caso de un error es:	1	2	3	4	5
Usabilidad					
Comprensión					
12) El nivel de entendimiento para el uso en la práctica es:	1	2	3	4	5
13) La facilidad de uso en la actividades o tareas es:	1	2	3	4	5
14) El uso de la aplicación para resolver situaciones empresariales es:	1	2	3	4	5
Aprendizaje					
15) El nivel de aprendizaje para su uso en la práctica es:	1	2	3	4	5
Operatividad					
16) El nivel de operación en la práctica es:	1	2	3	4	5
17) El nivel de esfuerzo para su uso en la práctica es:	1	2	3	4	5
Atracción					
18) Las características que presenta para su uso en la práctica es:	1	2	3	4	5
Eficiencia					
Tiempo					
19) El tiempo de respuesta en los resultados es:	1	2	3	4	5
20) El tiempo del procesamiento de la información es:	1	2	3	4	5
21) Los beneficios obtenidos en la realización de las funciones son:	1	2	3	4	5
Recurso					

22) La capacidad que tiene el teléfono inteligente como herramienta para la práctica es:	1	2	3	4	5
23) La utilización de la app en el teléfono inteligente sin conexión a internet es:	1	2	3	4	5
Mantenibilidad					
Análisis					
24) La identificación de cada uno de los elementos que la integran es:	1	2	3	4	5
25) El diagnóstico realizado con la ayuda de la herramienta es:	1	2	3	4	5
Cambios					
26) Las modificaciones realizadas en la herramienta son:	1	2	3	4	5
Estabilidad					
27) La funcionalidad de las herramientas ante diversas modificaciones es:	1	2	3	4	5
Prueba					
28) Las pruebas realizadas en la herramienta para la solución de la práctica es:	1	2	3	4	5
Portabilidad					
Adaptabilidad					
29) La aceptación de la herramienta en la práctica es:	1	2	3	4	5
Instalación					
30) La facilidad de instalar la herramienta es:	1	2	3	4	5
Coexistencia					
31) La funcionalidad en las tabletas electrónicas es:	1	2	3	4	5

32) La funcionalidad en emuladores Android es:	1	2	3	4	5
33) La funcionalidad en teléfonos inteligentes es:	1	2	3	4	5
Reemplazamiento					
34) La facilidad de reemplazo de la aplicación es:	1	2	3	4	5

¡Gracias por su tiempo!

Observaciones:_____

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Sugerencias:_____

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