Articles

Innovation startups: Study of software applications to optimize home delivery of products.

Startups de innovación: Estudio de aplicaciones informáticas para optimizar el suministro de productos a domicilio

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ABSTRACT

This research focuses on a comparative study between the levels of rice exports before and during dollarization, corresponding to the years 1980-2020; thus, the information from the World Bank, Central Bank of Ecuador and SENAE is used as a data base, which eventually leads us to a non-experimental research with a quantitative approach and through the t-test was able to determine the existence of a significant change in rice exports before and during dollarization. On the other hand, the coefficient of determination allows us to appreciate that with dollarization there is a 10% incidence between price and export levels, as well as establishing that during this stage, dependence on international relations and high production costs influence the degree of competitiveness of the price of rice.

Keywords: Dollarization, Price, Rice Exports

RESUMEN

La presente investigación se enfoca en realizar un estudio comparativo entre los niveles de exportación de arroz antes y durante la dolarización, correspondientes a los años 1980-2020; es así que se

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recurre a tomar como base de datos la información del Banco Mundial, Banco Central de Ecuador y SENAE, misma que eventualmente nos lleva a una investigación no experimental con enfoque cuantitativo y que mediante la prueba t pudo determinar la existencia de un cambio significativo en las exportaciones de arroz antes y durante la dolarización. Por otro lado, el coeficiente de determinación permite apreciar que con la dolarización hay un 10% de incidencia entre el precio y los niveles de exportación, así como también se establece que durante esta etapa, la dependencia de las relaciones internacionales y los elevados costos de producción influyen en el grado de competitividad del precio del arroz.

Palabras clave: Dolarización, Precio, Exportación de Arroz

INTRODUCTION

New technologies are the precursors of the advancement and development of hardware and software tools in different productive sectors. In the agricultural sector, the use of applications adjusted to this environment has made the actors involved in the different processes: field, production, supervision and distribution, more effective and efficient. Currently, information and communication technologies make it possible to improve and optimize agricultural production; however, the marked technological gap due to geographical location, lack of academic preparation, uncertainty in the results to be obtained, limits the expansion and progress of precision agriculture in all sectors, despite this, the need to reach the final consumer is permanent and in order to satisfy the demand for food, various distribution channels are established, It is here where the presence of intermediaries between the producer and the consumer generates, among other aspects, considerable changes in the final price, lack of care in the presentation and inappropriate asepsis, from this background arises the initiative to develop through formative research, the study of computer applications to optimize the supply of products at home, as an alternative of innovation - startup.

The term "startup" is said to have come into use in 1957 when eight engineers left their jobs at Shockley Labs and created Fairchild Semiconductor with outside funding. Although startups can belong to any industry, they are usually associated with technology because of their intensive use of scientific and technological knowledge or their relationship with the internet and information and communication technologies [ICT] (Pineda, 2016).

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Likewise, a startup is a temporary organization with the objective of finding a way of doing business that can be repeated and grow. To achieve this, it is necessary to invest in research and development to produce something innovative. Most of these companies provide ingenious solutions to common problems through the use of technology and unlike traditional companies that are based on imitating already established and entrenched concepts through proven and accepted processes and technologies; startups focus on research and development in order to create a final, unique and distinctive product or service (Escartin et al., 2020).

Startups, being based on research and development projects, aim to create new and unique products or services, however, innovating involves certain risks, so it is not always suitable for all organizations, however, companies that manage to adapt, not only improve their competitiveness and grow economically, also allows to give their products or services a unique and non-transferable added value, in addition, it is necessary to accompany the innovation with an effective marketing strategy to make the proposal known to the market and ensure that it is accepted. Failure to do so risks wasting time, resources and money (Muñoz & Espinosa, 2018).

Innovation is fundamental to success, it is the basis for the emergence of new companies and the key to their long-term survival and growth. To achieve this, the organization must implement innovation activities and have the ability to adopt new technologies, based on several criteria that are related to organizational change: product innovations, process innovations, organizational innovations and marketing innovations.

Figure 1. Types of innovation

Each type of innovation can have a significant impact on the company and its industry, and it is important to identify and prioritize the areas most in need of improvement to achieve a sustainable competitive advantage (Sanchez & Juan, 2011).

E-Commerce

E-commerce is a way to buy, sell or exchange goods, services and information over the Internet. It offers many options for acquiring products or services from suppliers around the world. Buying goods or services online is attractive because of its convenience and

ease. Throughout history, commercial transactions have evolved from ancient exchanges to the present day where time and space barriers have disappeared thanks to the internet. Thus, anyone anywhere in the world can buy or sell products from other parts of the world in an instant with just an internet connection.

There are three different types of e-commerce: B2B business-to-business, B2C business-to-consumer and C2C consumer-to-consumer (Torres Castañeda & Guerra Zavala, 2012).

The elimination of intermediaries in e-commerce allows direct interaction between companies and customers, which improves product or service distribution and reduces delivery time. This results in significant savings in terms of time and efficiency (Murillo Silva, 2009).

At the same time, the disappearance of physical forms and the automation of procedures reduces transaction costs and avoids duplicate orders, resulting in a significant decrease in operating costs; e-commerce provides a level of convenience, allowing the purchase of products and services from the comfort of home, as well as access to a wide variety of offers through a faster and more efficient process.

Startups can take advantage of the benefits of e-commerce to reach a global audience, increase their visibility and improve their operational efficiency, as well as offer a personalized and convenient shopping experience to their customers, which leads to an increase in sales. The effects of the use of e-commerce are reflected in improved quality, cost reductions and a more perfect competition, facts that finally have a direct impact on the price of products (González Rodríguez, 2015).

Agricultural products from Ecuador

In Ecuador, the agricultural sector is of great importance for the economy, since it is the main source of employment in the country, currently representing 29.4% of the economically active population. In the economic sphere, agriculture is considered one of the main activities that generates large revenues to the economy of Ecuador. The participation of this sector in the GDP has made it one of the main pillars of the national economy. In 2015, through the implementation of government policies, access to agricultural inputs was facilitated, which allowed Ecuadorian producers to have a favorable market (Chuncho et al., 2021).

However, due to the growing population, environmental pollution, land erosion, scarcity of water, soil and energy, it has become necessary to improve crops and agricultural processes to achieve a sustainable and profitable activity (Boza et al., 2021). This particularity has encouraged innovation by including technologies in various aspects of this sector. Ecuador is a country with an agricultural tradition and a great variety of crops; among the main products grown and exploited inside and outside the country are bananas, cocoa and sugarcane.

Banana production is one of the most profitable and widely cultivated crops in Latin America and the Caribbean. In addition, it is the main agricultural export product in Ecuador and the main source of economic income in the agricultural sector. The demand for bananas is based on its quality, which has made it a very popular fruit.

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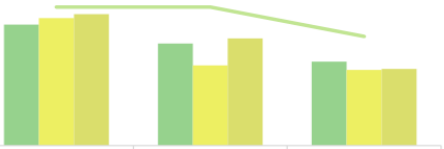
Due to its rich composition of macro and micronutrients, as well as its health-enhancing properties and bioactive compounds, bananas are essential for families in coastal Ecuador. The outlook for growth in banana production and exports worldwide, especially in Ecuador, is high (Zhiminaicela Cabrera, Quevedo Guerrero, & García Batista, 2020).

Figure 2. Statistical table of banana production from 2019 to 2020.

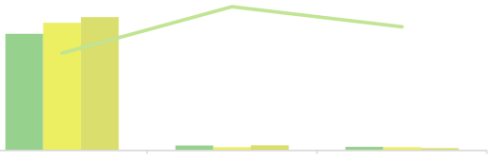


	Los Ríos	Guayas	El Oro
2019	2.369	1.999	1.642
2020	2.496	1.569	1.481
2021	2.571	2.098	1.502
Rend.2021(tm/ha)	45	45	36

Source: National Institute of Statistics and Census (INEC, 2022).

Sugarcane production is considered one of the most relevant products in Latin America in terms of income generation for some countries. In Ecuador, it is of great importance due to its capacity to generate income for both large and small producers. According to the Central Bank of Ecuador, the sugarcane harvest contributes 1.4% of the national GDP and provides more than 30,000 direct jobs and 80,000 indirect jobs, especially during the dry harvest season (Navarrete, Naikiat, & Parrales, 2022).

Figure 3. Statistical table of sugar cane production from 2019 to 2020.



	Guayas	Imbabura	Loja
2019	7.549	312	235
2020	8.264	201	209
2021	8.631	334	150
Rend.2021(tm/ha)	88	130	112

Source: National Institute of Statistics and Census (INEC, 2022).

The cocoa tree is native to the jungles of Central and South America, and its scientific name, "Theobroma", means "food of the Gods". It takes 4 to 5 years for the cocoa tree to begin to bear fruit, but its maximum production is achieved between 8 and 10 years. The existence of cocoa was known by the Mayas 400 years before Christ, and it was considered a seed of great value, being used as a currency and as a luxury food due to its nutritional properties (Cordova et al., 2021).
Cocoa has been a tradition since the time of colonization and is the source of work and economic livelihood for many families; for the years 2002-2011, its contribution to total

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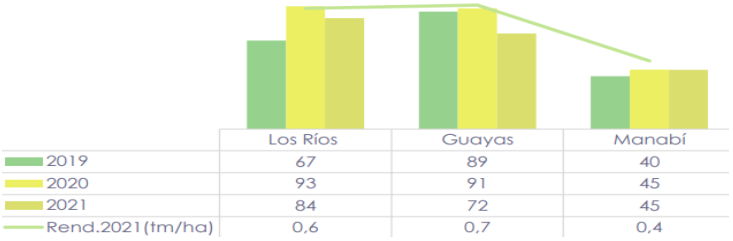
GDP was 0.57% and to agricultural GDP was 6.4%. It is also an important provider of employment, with approximately 600,000 people working directly in the activity (Intriago et al., 2018).

Figure 4. Statistical table of cocoa production from 2019 to 2022



	Los Ríos	Guayas	Manabí
2019	67	89	40
2020	93	91	45
2021	84	72	45
Rend.2021(tm/ha)	0,6	0,7	0,4

Source: National Institute of Statistics and Census (INEC, 2022).

With the purpose of inserting the product in society, places arise, whether physical or virtual, where different products and services are bought and sold. In this environment, different agents participate, interact and establish relationships in order to satisfy their needs, interests and objectives related to the commercialization of goods and services.

The concept of trading has its roots in ancient times, when people relied on hunting and farming for food. This led to the emergence of barter, one of the oldest methods of exchanging goods without the need for money. This primitive system, although considered inefficient by administrators, has left a legacy in today's monetary economies and has had an impact on the current financial crisis.

In general terms, marketing is the process of carrying out the necessary functions from the time the producer manufactures a product until it reaches the consumer through a specific market. It is a means of coordinating transfers and exchanges between the different actors involved in a production chain.

The important functions of marketing include: buying, selling, transporting, storing, financing, assuming risks and obtaining market information, activities that are complemented through distribution channels, which are a combination of organizations that perform the tasks necessary for a supplier's product to reach the end customer. This system may include primary participants, such as retailers or wholesalers who acquire ownership and assume risks, and specialized channel participants who sell and transport the product (Sierra, Moreno, & Silva, 2015).

Distribution channels are essential to make marketing strategies a reality and are a key component in satisfying the needs of the end consumer; they make it possible to meet a customer demand by making a product or service available, shortening distance and reducing response time. In addition, they foster economies of scale, as all members of the channel have the opportunity to expand. They also have a direct impact on product pricing (Acosta, 2017). The transfer of products and services from their origin to the final consumer are closely linked to the distribution channel.

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Figure 5. Distribution channel functions

Ayudan a concretar transacciones	Información	Recopilar y divulgar información relacionada con el entorno de mercadeo, que pueda aportar nuevas formas de planificar y realizar el intercambio de mercancías
	Promoción	Crear y publicitar información atractiva y persuasiva relacionada con las ofertas
	Contacto	Detectar posibles clientes y establecer comunicación con ellos
	Adecuación	Ajustar la oferta de acuerdo con las necesidades del comprador, lo cual abarca todo el proceso desde la fabricación hasta el empaque del producto.
	Negociación	Efectuar los acuerdos necesarios con respecto al precio de venta y otras características, que permiten realizar intercambio de la mercancía.
Llevan a cabo las transacciones concertadas	Distribución física	Esta parte se encarga de transportar y almacenar la mercancía
	Financiamiento	Hace referencia a los diferentes fondos que puede utilizar un canal para sostener sus costos
	Aceptación de riesgos	No es otra cosa que asumir los riesgos inherentes al desarrollo del trabajo dentro del canal.

Source: (Acosta, 2017)

Production costs

Production costs represent the expenses associated with the creation of a good or service, expressed in monetary terms. These include the cost of materials, labor and indirect expenses related to manufacturing. It is defined as the value of inputs required for production such as capital, labor, and goods and services consumed during the production process. This includes interest, profits and employees' salaries, as well as raw materials, fuels and services used in the production process.

Apps

Apps are tools created to fulfill a specific purpose on a particular platform, such as a cell phone, tablet, television or computer. The term "App" is an abbreviation of the word "application", which means "application" in English. These applications can be downloaded or accessed through mobile devices or the internet, and can be of various types, such as games, productivity-enhancing tools, messaging services, among others. The most popular online stores for downloading applications include the App Store for Apple devices and the Google Play Store for Android devices (Castañeda, 2015).

Native applications: A native application is one that has been designed and developed to run on a particular operating system, using the corresponding software development kit (SDK). Mobile platforms, such as Android, IOS or Windows Phone, have different systems, so if you want an application to be available on multiple platforms, you must create specific versions for each of them, using the appropriate programming language for each operating system.

Web Apps: A web application or web App is one that is developed using popular programming languages such as HTML, JavaScript and CSS. The main advantage of these applications is that they can work independently of the operating system in which they are used, which means running on different devices without having to create specific versions for each of them.

Hybrid Applications: A hybrid application combines the features of a native application and a web app. These applications are developed using HTML, JavaScript and CSS, which allows their use on different platforms. In addition, it also allows access to a large part of the device's hardware features. The main advantage of hybrid applications is that, despite being developed with HTML, java or CSS, it is possible to group the codes and distribute them in application stores, such as the app Store. (Castañeda, 2015).

Due to technological advances and the ease of access to the Internet, online sales have become popular. It is a purchasing method that is used daily and quickly with the aim of promoting, marketing and managing the company's products. In the case of stores, social networks and other media are an ideal platform to disseminate all the information about the company, including promotions and online sales in different ways, to sell online is recommended:

- Have clarity as to how the business will be promoted through the web. This allows the proper planning of strategies and the audience to which the products will be directed;
- Creating a positive image for the business is important, as customers are not only interested in the products, but also in the trust and image of the company. This can influence their decision making when choosing a website to make purchases. Therefore, it is essential to promote trust, quality and good business content.
- Keeping the business web pages or website up to date is crucial. Continuously updating these websites allows customers to not feel that the space is neglected or outdated, which can decrease their interest in visiting the site and, therefore, affect sales (Rodríguez Ruíz, 2017)

MATERIALS AND METHODS

This research arises from a quantitative approach with an exploratory scope, through the statistical method. With the purpose of identifying the applicability of a computer tool for the sale of organic agricultural products at home, an instrument is developed for producers and consumers, each of them composed of 10 questions; using SPSS v25 software, reliability is analyzed through the Crombach's alpha statistical technique, obtaining a value of 0.895, which guarantees the appropriate result according to the interest pursued. The number of consumers is calculated based on the universe, which is equivalent to the total population of the canton of La Troncal, 54,389 inhabitants (INEC, 2023). (INEC, 2023)Cañar province, where the study is applied for the development of the startup proposal.

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$$n = \frac{N * Z_{\propto}^2 * p * q}{[d^2 * (N-1)] + [Z_{\propto}^2 * p * q]}$$

Knowing that:
N = Total population
Zα = 1.96 (if 95% certainty)
p = expected proportion (5%)
q = 1 - p
d = accuracy (5%)

The result obtained for the sample of consumers is seventy-three (73) people, the instrument is applied to a total of eighty-four (84) participants without prejudice of error, in a similar way the analysis is carried out for agricultural producers, taking as reference a total of 274 families grouped in eleven agricultural associations of the study area, a sample of fifty-eight (58) participants is obtained.
Once the instrument has been applied, information is obtained that allows the descriptive statistical analysis to be carried out, which indicates the percentages of the criteria selected for the study.

RESULTS
The results obtained from the survey of 84 consumers are shown below:

Table 1 . *Age range of consumers*

CONSUMER AGE	FREQUENCY	PERCENTAGE
Between 18 and 25 years old	30	36%
Between 26 and 30 years old	12	14%
Between 31 and 35 years old	7	8%
Between 36 and 40 years old	7	8%
Between 41 and 50 years old	22	26%
More than 50 years	6	7%
TOTAL	84	100%

Prepared by: The author.

It is evident that there are a greater number of consumers between 18 and 25 years, with 36% (30), shows that, currently young people implement a greater consumption of organic agricultural products, although consumers between 26 to 30 years if they make consumption with a percentage of 14% (12) according to respondents, and the lowest rate of age in consumption is over 50 years, with 7% (6).

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Table 2. *Gender of consumers.*

GENDER	FREQUENCY	PERCENTAGE
Female	47	56%
Male	36	43%
I would rather not answer	1	1%
TOTAL	84	100%

Prepared by: The author.

The data obtained show a greater presence of the female gender, with 56% (47) of participation compared to the male gender with 43% (36), and 1% that corresponds to an individual who prefers not to answer.

Table 3. *Zone - Housing*

LIVING AREA	FREQUENCY	PERCENTAGE
Rural area	21	25%
Urban area	63	75%
TOTAL	84	100%

Prepared by: The author.

There is a greater presence of participants whose homes are located in urban areas, with 75% (63) while 25% (21) correspond to rural areas.

Table 4. *Consumption of organic agricultural products.*

CONSUMPTION OF ORGANIC PRODUCTS	FREQUENCY	PERCENTAGE
Yes	68	81%
No	16	19%
TOTAL	84	100%

Prepared by: The author.

Eighty-one percent (67) of the respondents consume some type of organic agricultural product, while 19% (16) of them indicate that they do not consume such products, a significant percentage of people who are not familiar with such inputs.

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Table 5. *Most consumed organic agricultural products.*

ORGANIC PRODUCT TYPE	FREQUENCY	PERCENTAGE
Fruits	53	32%
Vegetables	45	27%
Legumes	58	35%
Processed derivatives	12	7%
TOTAL	168	100%

Prepared by: The author.

Of the total number of respondents who consume organic products, 35% (58) consume vegetables at home, 32% (53) buy fruit, 27% (45) buy vegetables and the lowest consumption rate is for processed products with 7% (12). It is important to note that the consumers surveyed could select from several options, which is why the sum of the frequency is not equivalent to the total number of participants who claim to consume this type of product.

Table 6. *Frequency of consumption of organic agricultural products*

USAGE TIME	FREQUENCY	PERCENTAGE
Between 1 and 3 years	16	24%
More than 3 years	26	38%
Less than 1 year	8	12%
Rarely	18	26%
TOTAL	68	100%

Prepared by: The author.

It is shown that the highest frequency of consumption of agricultural products corresponds to more than 3 years, with 38% (26), in a significant percentage 26% (18) adduce a sporadic consumption, with 24%(16) the fact of the continuity of consumption between 1 to 3 years, leaving a minimum percentage 12%(8) that reflects the novel consumption of some consumers.

Table 7. *Place of purchase of organic agricultural products*

PLACE OF PURCHASE	FREQUENCY	PERCENTAGE
Supermarkets	35	38%
Grocery store	15	16%
Square or market	40	43%
I do not know the place of sale	3	3%
TOTAL	93	100%

Prepared by: The author.

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It is observed that agricultural products are purchased more frequently in places such as plazas or markets 43% (40), likewise in places such as supermarkets 38% (35), there are some consumers who prefer grocery stores 16% (15), and finally it is evident that there is a minimum percentage of participants 3% (3), who do not know a specific place of sale. it is important to emphasize that the consumers surveyed could select among several options, which is why the sum of the frequency is not equivalent to the total number of participants who claim to purchase this type of products.

Table 8. *Consumer preferences when buying organic agricultural products*

CONSUMER PREFERENCES	FREQUENCY	PERCENTAGE
I like to economize	18	26%
I prefer quality, no matter the cost	50	74%
TOTAL	68	100%

Prepared by: The author.

It shows that 74%(50) of consumers prefer the quality of a product before buying, regardless of its cost, while some of the participants 26%(18) prefer to look for products with a lower price to save money, even knowing that they will not get the same quality.

Table 9. *Technological means preferred by consumers for the purchase of organic agricultural products*

TECHNOLOGICAL MEANS - PURCHASE OF PROD.	FREQUENCY	PERCENTAGE
Cell phone application - APP	12	18%
Website	3	4%
Social networks	13	19%
Visit to grocery stores	40	59%
TOTAL	68	100%

Prepared by: The author.

It is shown that 59%(40) of consumers prefer to visit grocery stores as an alternative for the purchase of organic agricultural products, there is a minimal difference between the use of mobile applications and social networks, 18% and 19% respectively, leaving a lower percentage to pages / websites with 4%(3). This leads to the assumption that there is still a lack of confidence in the use of alternative means for commercial transactions.

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Table 10. *Information considered relevant by the consumer at the time of having an app*

INFORMATION REQUIRED IN AN APP	FREQUENCY	PERCENTAGE
List of products	52	20%
Selling price per unit	42	16%
Methods of payment	43	16%
Delivery time	39	15%
Product description	33	13%
Producer information	33	13%
Delivery tracking	16	6%
Support	5	2%
TOTAL	263	100%

Prepared by: The author.

Finally, within the instrument applied, consumers were asked what they consider relevant if they would have a cell phone application [App], to venture into the online purchase and home delivery system, from highest to lowest degree the following alternatives were obtained as answers: the list of products that are sold 20%, the selling price per unit and payment method 16%, delivery time 15%, product description and producer information 13%, delivery tracking 6%, and finally technical support 2%, characteristics that should be considered when designing the prototype.
The results obtained from a survey of producers are as follows:

Table 12. *Age range of producers*

AGE PRODUCERS	FREQUENCY	PERCENTAGE
Between 18 and 25 years old	0	0%
between 26 and 30 years old	14	24%
Between 31 and 35 years old	0	0%
Between 36 and 40 years old	14	24%
Between 41 and 50 years old	11	19%
Over 50 years old	19	33%
TOTAL	58	100%

Prepared by: The author.

The largest proportion of participants for the collection of data corresponding to agricultural producers were 33%(19) people over 50 years of age, with a similar ratio of 24%(14) between 26 - 30 and 36 - 40 years of age; in a smaller proportion 19%(11), individuals whose ages fluctuate between 41 - 50 years of age.

Table 13. *Gender by producers*

GENDER	FREQUENCY	PERCENTAGE
Female	41	71%
Male	17	29%
TOTAL	58	100%

Prepared by: The author.

There is a greater number of female farmers with 71% (41) compared to the male farmers with 29% (17).

Table 14. *Location of production zone*

PRODUCTION ZONE	FREQUENCY	PERCENTAGE
Urbana	11	19%
Rural	47	81%
TOTAL	58	100%

Prepared by: The author.

Of the group of producers participating in the data collection, 81% (47) work in rural areas, while 19% (11) work in agricultural activities in urban areas.

Table 15. *Agricultural products grown*

TYPE OF AGRICULTURAL PRODUCTION	FREQUENCY	PERCENTAGE
Derivatives - processed	23	21%
Fruits	23	21%
Vegetables	35	32%
Legumes	28	26%
TOTAL	109	100%

Prepared by: The author.

According to data obtained, in the study area there is a greater production of vegetables with a presence of 32% (35) in relation to other types of organic products, legumes 26% (28), and with a rate of 21% (23) are fruits and processed products, this last value is associated with the development of small fruit farms where organic products such as

jams, wines and others are produced, important to note that the surveyed producers could select from several options, which is why the sum of the frequency is not equivalent to the total number of participants.

Table 16. Product delivery - dispensing

SALE OF THE PRODUCT	FREQUENCY	PERCENTAGE
Final consumer	51	61%
Intermediaries	25	30%
Commercial chains	6	7%
Exporters	1	1%
TOTAL	83	100%

Prepared by: The author.

Agricultural producers' sales are mainly focused on direct sales to the final consumer 61%(51), there is an important participation of intermediaries 30%(25), who buy the product from the source and sell to a third party to close the business cycle, with a lesser presence in the delivery of the product to large commercial chains 7%(6), and with only 1%(1) the producer has the opportunity to export.

Table 17. *Producers' preferences for marketing their products*

MARKETING PREFERENCES	FREQUENCY	PERCENTAGE
Web Sites	8	8%
WhatsApp	58	59%
Facebook	24	24%
Instagram	8	8%
Mobile applications	0	0%
TOTAL	98	100%

Prepared by: The author.

When evaluating the familiarity that producers have with different tools to market the products, the results reveal that 59%(58) have some affinity with the WhatsApp application, 24%(24) with Facebook and with similar percentage 8%(8) web pages and Instagram, which reflects a certain level of knowledge of transactionality mediated by electronic channels.

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Table 18 *Sale, training and use of PPPs to commercialize products*

TECHNOLOGY-ASSISTED SALES	FREQUENCY	PERCENTAGE
YES	58	100%
NO	0	0%

ELECTRONIC MARKETING TRAINING	FREQUENCY	PERCENTAGE
YES	58	100%
NO	0	0%

HAVE AN APP FOR MARKETING	FREQUENCY	PERCENTAGE
YES	58	100%
NO	0	0%

Prepared by: The author.

The three final questions were posed with the purpose of knowing the willingness of producers to venture into e-commerce, to obtain training to establish marketing channels through digital media, and to be part of the innovation Startup for online sales and home delivery of products to consumers, obtaining acceptability from all participants.

CONCLUSIONS

At the end of this research work, the following conclusions were drawn:
The development and implementation of the study of computer applications to optimize the supply of products at home, concludes that a web solution can be promoted, according to the needs of the producer and the consumer to optimize the processes of sale and purchase of agricultural products through technological tools. In the field of web development there are many alternatives, therefore, through the market study and analysis of each one, it is evident the reliability for the creation of a web application, which tends producers to reach the consumer efficiently, taking care of the product quality, presentation and asepsis, conditions that guarantee the effective commercialization and permanence in the market. The usability of a web application can satisfactorily influence the marketing processes, facilitating the acquisition by the consumer, the production and distribution by the producer, the latter maintaining adequate training, can handle the system safely, which will maintain a link with the consumer who with the frequency of use of computer tools created for the purpose, gains confidence and with effective and efficient product delivery mechanisms, loyalty is created, allowing the emergence in the market of innovation Startups.

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